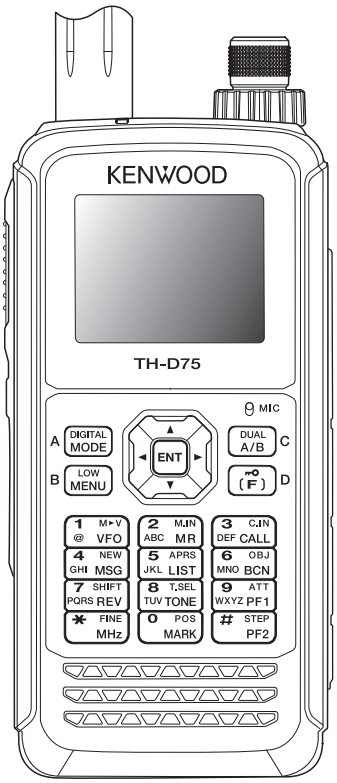
KENWOOD

SERVICE MANUAL

144/220/430MHz TRIBANDER, 144/430MHz DUAL BANDER

TH-D75A, TH-D75E



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This product complies with the **RoHS** directive for the European market.

This product uses Lead Free solder.

B5B-7364-00

No.RA096<Rev.001>
2024/1

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NOTE

- This equipment should be serviced by only qualified technicians.
- Danger of explosion if the battery is incorrectly replaced; replace only with the same type.
- To dispose of batteries, be sure to comply with the laws and regulations in your country or region.

SPECIFICATION

TH-D75A (K type)

GENERAL			
Frequency Range	Band A / Band B	TX	144 - 148, 222 - 225, 430 - 450 MHz
	Band B	RX	136 - 174, 216 - 260, 410 - 470 MHz
	Band B	RX	0.1 - 76, 76 - 108 MHz (WFM) 108 - 524 MHz
Mode	TX		F3E, F1D, F2D, F7W
	RX		F3E, F1D, F2D, F7W, A1A, A3E, J3E
Operating Temp. Range			-20 °C ~ +60 °C (-4°F ~ +140°F) -10 °C ~ +50 °C (+14°F ~ +122°F) (with include KNB-75LA)
Frequency Stability			± 2.0 ppm
Antenna Impedance			50 Ω
Operating Voltage	DC-IN		DC 11.0 ~ 15.9 V (STD: DC 13.8 V)
	BATT		DC 6.0 ~ 9.6 V (STD: DC 7.4 V)
Current Consumption: TX (TYP.)	EXT.PS (DC-IN) 13.8 V	HI	1.4 A
		MID	0.9 A
		L	0.6 A
		EL	0.4 A
	Battery DC 7.4 V	HI	2.0 A
		MID	1.3 A
		L	0.8 A
		EL	0.5 A
Current Consumption: RX (TYP.)	SINGLE	Rated Power	260 mA
		SQ Close	155 mA
		Avg. Save on	50 mA
	DUAL	Rated Power	310 mA
		SQ Close	225 mA
		Avg. Save on	50 mA
	GPS logger mode		115 mA
Battery Life (Approx.) Single, Save on, Rate 6:6:48 sec, GPS OFF Approx. 10 % shorter when GPS is ON	KNB-75LA (1,820 mAh)	HI	6 hours
		MID	8 hours
		L	12 hours
		EL	15 hours
	KBP-9 (Alkaline AAAx6)	HI	------
		MID	------
		L	3.5 hours
		EL	------
Dimensions (W x H x D) Projections not included	with KNB-75LA		56.0 x 121.95 x 32.5 mm (2.20 x 4.80 x 1.28 in)
	with KBP-9		56.0 x 121.95 x 34.6 mm (2.20 x 4.80 x 1.36 in)
Weight (net)	Body only		204 g (7.20 oz)
	with KNB-75LA		346 g (12.20 oz) (w/ Antenna, Belt Clip)
	with KBP-9		391 g (13.79 oz) (w/ Antenna, Belt Clip, AAAx6 Battery)

RECEIVER					**Band A**	**Band B**
Circuitry			F3E, F2D, F1D, F7W		Double Super Heterodyne	Double Super Heterodyne
			A1A, A3E, J3E		-	Triple Super Heterodyne
IF Frequency			1st IF		57.15 MHz	58.05 MHz
			2nd IF		450 kHz	450 kHz
			3rd IF (A1A, A3E, J3E)		-	10.8 kHz
Sensitivity (TYP.)	Amateur Band	FM	12dB SINAD, FM/ NFM	144 MHz	0.18/ 0.22 uV	0.19/ 0.24 uV
				220/ 430 MHz	0.18/ 0.22 uV	0.20/ 0.25 uV
		DV	PN9/GMSK 4.8kbps, BER 1%	144/ 430 MHz	0.22 uV	0.22 uV
				220 MHz	0.22 uV	0.24 uV
		SSB	10 dB S/N		-	0.16 uV
		AM	10 dB S/N		-	0.50 uV

Sensitivity (TYP.)	Except above Amateur Band	AM	10 dB S/N	0.3 - 0.52 MHz	-	4 uV
				0.52 - 1.8 MHz	-	1.59 uV
				1.8 - 54 MHz	-	0.63 uV
				54 - 76 MHz	-	1.12 uV
				118 - 174 MHz	-	0.50 uV
				200 - 250 MHz	-	0.63 uV
				382 - 412 MHz	-	1.12 uV
				415 - 524 MHz	-	1.12 uV
		FM	12dB SINAD	28 - 54 MHz	-	0.32 uV
				54 - 76 MHz	-	0.56 uV
				118 - 144 MHz	0.36 uV	0.36 uV
				148 - 175 MHz	-	0.36 uV
				200 - 222 MHz	-	0.36 uV
				225 - 250 MHz	-	0.36 uV
				382 - 400 MHz	-	0.50 uV
				400 - 412 MHz	0.36 uV	0.36 uV
				415 - 430 MHz	0.36 uV	0.36 uV
				450 - 490 MHz	0.36 uV	0.36 uV
				490 - 524 MHz	-	0.63 uV
		SSB	10 dB S/N	1.8 - 54 MHz	-	0.40 uV
				54 - 76 MHz	-	0.79 uV
				144 - 148 MHz	-	0.16 uV
				222 - 225 MHz	-	0.20 uV
				430 - 450 MHz	-	0.16 uV
	FM BC Band	WFM	30 dB S/N	76 - 95 MHz	-	1.59 uV
				95 - 108 MHz	-	2.00 uV
Squelch (TYP.)					0.18 uV	0.25 uV
Channel Selectivity			-6 dB		12 kHz or more	
			-50 dB		30 kHz or less	
Spurious Rejection			144, 220 MHz		50 dB or more	45 dB or more
			430 MHz		50 dB or more	40 dB or more
IF Rejection					60 dB or more	55 dB or more
Audio Output			7.4 V, 10% Dist.		400 mW or more/ 8 Ω	

TRANSMITTER			
RF Power Output	EXT.PS 13.8 V / Battery DC: 7.4 V	HI	5 W
		MID	2 W
		L	0.5 W
		EL	0.05 W
Modulation	FM		Reactance Modulation
	DV		GMSK Reactance Modulation
Modulation Deviation	FM		± 5.0 kHz
	NFM		± 2.5 kHz
Spurious Emissions	HI / MID		-60 dBc or less
	L		-50 dBc or less
	EL		-40 dBc or less
Microphone Impedance			2 kΩ
GPS			
TTFF (Cold start) (Ta = 25°C, Open sky)			Approx. 40 sec
TTFF (Hot start) (Ta = 25°C, Open sky)			Approx. 5 sec
Horizontal Accuracy (Ta = 25°C, Open sky)			10 m or less
Receive sensitivity			Approx. -141 dBm (Acquisition)
Bluetooth			
Version, Class			Version 3.0, Class 2
Output Power			-6 < Pav < 4 dBm
Modulation Characteristics			140 ≦ △f 1avg ≦ 175 kHz
Initial Carrier Frequency			-75 ≦ fo ≦ +75 kHz
Carrier Frequency Drift			± 25 kHz (One Slot Packet) ± 40 kHz (Three Slot Packet) ± 40 kHz (Five Slot Packet)

Note:

Except for sensitivity, these specifications are guaranteed for Amateur Bands only.

Specifications are subject to change without notice, due to advancements in technology.

TH-D75E (E, T types)

GENERAL			
Frequency Range	Band A / Band B	TX	144 - 146, 430 - 440 MHz
	Band B	RX	136 - 174, 410 - 470 MHz
	Band B	RX	0.1 - 76, 76 - 108 MHz (WFM) 108 - 524 MHz
Mode	TX		F3E, F1D, F2D, F7W
	RX		F3E, F1D, F2D, F7W, A1A, A3E, J3E
Operating Temp. Range			-20 °C ~ +60 °C, -10 °C ~ +50 °C (with include KNB-75LA)
Frequency Stability			± 2.0 ppm
Antenna Impedance			50 Ω
Operating Voltage	DC-IN		DC 11.0 ~ 15.9 V (STD: DC 13.8 V)
	BATT		DC 6.0 ~ 9.6 V (STD: DC 7.4 V)
Current Consumption: TX (TYP.)	EXT.PS (DC-IN) 13.8 V	HI	1.4 A
		MID	0.9 A
		L	0.6 A
		EL	0.4 A
	Battery DC 7.4 V	HI	2.0 A
		MID	1.3 A
		L	0.8 A
		EL	0.5 A
Current Consumption: RX (TYP.)	SINGLE	Rated Power	260 mA
		SQ Close	155 mA
		Avg. Save on	50 mA
	DUAL	Rated Power	310 mA
		SQ Close	225 mA
		Avg. Save on	50 mA
	GPS logger mode		115 mA
Battery Life (Approx.) Single, Save on, Rate 6:6:48 sec, GPS OFF Approx. 10 % shorter when GPS is ON	KNB-75LA (1,820 mAh)	HI	6 hours
		MID	8 hours
		L	12 hours
		EL	15 hours
	KBP-9 (Alkaline AAAx6)	HI	------
		MID	------
		L	3.5 hours
		EL	------
Dimensions (W x H x D) Projections not included	with KNB-75LA		56.0 x 121.95 x 32.5 mm
	with KBP-9		56.0 x 121.95 x 34.6 mm
Weight (net)	Body only		203 g
	with KNB-75LA		344 g (w/ Antenna, Belt Clip)
	with KBP-9		389 g (w/ Antenna, Belt Clip, AAAx6 Battery)

RECEIVER					**Band A**	**Band B**
Circuitry			F3E, F2D, F1D, F7W		Double Super Heterodyne	Double Super Heterodyne
			A1A, A3E, J3E		-	Triple Super Heterodyne
IF Frequency			1st IF		57.15 MHz	58.05 MHz
			2nd IF		450 kHz	450 kHz
			3rd IF (A1A, A3E, J3E)		-	10.8 kHz
Sensitivity (TYP.)	Amateur Band	FM	12dB SINAD, FM/ NFM	144 MHz	0.18/ 0.22 uV	0.19/ 0.24 uV
				430 MHz	0.18/ 0.22 uV	0.20/ 0.25 uV
		DV	PN9/GMSK 4.8kbps, BER 1%	144 MHz	0.22 uV	0.22 uV
				430 MHz	0.22 uV	0.22 uV
		SSB	10 dB S/N		-	0.16 uV
		AM	10 dB S/N		-	0.50 uV

Sensitivity (TYP.)	Except above Amateur Band	AM	10 dB S/N	0.3 - 0.52 MHz	-	4 uV
				0.52 - 1.8 MHz	-	1.59 uV
				1.8 - 54 MHz	-	0.63 uV
				54 - 76 MHz	-	1.12 uV
				118 - 174 MHz	-	0.50 uV
				200 - 250 MHz	-	0.63 uV
				382 - 412 MHz	-	1.12 uV
				415 - 524 MHz	-	1.12 uV
		FM	12dB SINAD	28 - 54 MHz	-	0.32 uV
				54 - 76 MHz	-	0.56 uV
				118 - 144 MHz	0.36 uV	0.36 uV
				148 - 175 MHz	-	0.36 uV
				200 - 222 MHz	-	0.36 uV
				225 - 250 MHz	-	0.36 uV
				382 - 400 MHz	-	0.50 uV
				400 - 412 MHz	0.36 uV	0.36 uV
				415 - 430 MHz	0.36 uV	0.36 uV
				450 - 490 MHz	0.36 uV	0.36 uV
				490 - 524 MHz	-	0.63 uV
		SSB	10 dB S/N	1.8 - 54 MHz	-	0.40 uV
				54 - 76 MHz	-	0.79 uV
				144 - 148 MHz	-	0.16 uV
				222 - 225 MHz	-	0.20 uV
				430 - 450 MHz	-	0.16 uV
	FM BC Band	WFM	30 dB S/N	76 - 95 MHz	-	1.59 uV
				95 - 108 MHz	-	2.00 uV
Squelch (TYP.)					0.18 uV	0.25 uV
Channel Selectivity			-6 dB		12 kHz or more	
			-50 dB		30 kHz or less	
Spurious Rejection			144 MHz		50 dB or more	45 dB or more
			430 MHz		50 dB or more	40 dB or more
IF Rejection					60 dB or more	55 dB or more
Audio Output			7.4 V, 10% Dist.		400 mW or more/ 8 Ω	

TRANSMITTER			
RF Power Output	EXT.PS 13.8 V / Battery DC: 7.4 V	HI	5 W
		MID	2 W
		L	0.5 W
		EL	0.05 W
Modulation	FM		Reactance Modulation
	DV		GMSK Reactance Modulation
Modulation Deviation	FM		± 5.0 kHz
	NFM		± 2.5 kHz
Spurious Emissions	HI / MID		-60 dBc or less
	L		-50 dBc or less
	EL		-40 dBc or less
Microphone Impedance			2 kΩ
GPS			
TTFF (Cold start) (Ta = 25°C, Open sky)			Approx. 40 sec
TTFF (Hot start) (Ta = 25°C, Open sky)			Approx. 5 sec
Horizontal Accuracy (Ta = 25°C, Open sky)			10 m or less
Receive sensitivity			Approx. -141 dBm (Acquisition)
Bluetooth			
Version, Class			Version 3.0, Class 2
Output Power			-6 < Pav < 4 dBm
Modulation Characteristics			140 ≦ △f 1avg ≦ 175 kHz
Initial Carrier Frequency			-75 ≦ fo ≦ +75 kHz
Carrier Frequency Drift			± 25 kHz (One Slot Packet) ± 40 kHz (Three Slot Packet) ± 40 kHz (Five Slot Packet)

Note:

Except for sensitivity, these specifications are guaranteed for Amateur Bands only.

Specifications are subject to change without notice, due to advancements in technology.

SECTION 1
PRECAUTION

This service manual does not describe PRECAUTION.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 Circuit Description

2.1.1 Outline

The TH-D75A is an FM triple-band handheld transceiver designed for amateur radio applications in the 144/220/430MHz bands.
The TH-D75E is an FM dual-band handheld transceiver designed for amateur radio applications in the 144/430MHz bands.

2.1.2 Frequency Configuration

This transceiver has two discrete VCO/PLL and IF circuit configurations for the Band A and Band B to achieve simultaneous dual-band signal reception.
The VCO block for the Band A is used as the first local oscillator for VHF and UHF reception in the Band A. The VCO block for the Band B is used as the first local oscillator for a range of 0.1 to 524MHz reception in the Band B. Also, the VCO block for the Band B can be modulated and is also used for VHF/220MHz (TH-D75A only) /UHF transmission.
Also, this transceiver has two PLL reference oscillators with oscillation frequencies of 57.6MHz and 55.95MHz. These two signals are sent to the analog switch circuit, and then either one signal is used as a reference of the PLL. The 57.6MHz signal is also used as the second local oscillator signal for reception.

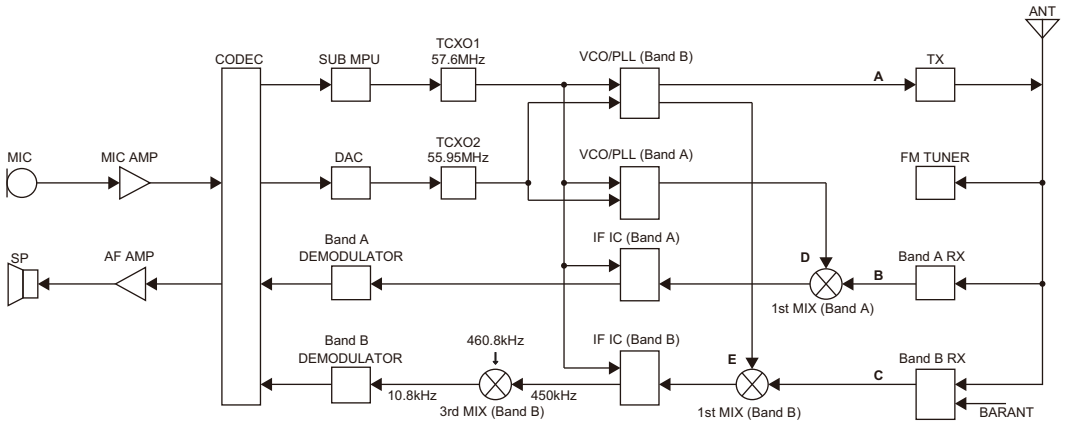


Fig.1 Frequency configuration

Table 1 Frequency configuration

Point	TH-D75A (K type)	TH-D75E (E, T types)
	Frequency range	Frequency range
A	144.000 ~ 147.995MHz 222.000 ~ 224.995MHz 430.000 ~ 449.995MHz	144.000 ~ 145.995MHz 430.000 ~ 439.995MHz
B	136.000 ~ 173.995MHz 216.000 ~ 259.995MHz 410.000 ~ 469.995MHz	136.000 ~ 173.995MHz 410.000 ~ 469.995MHz
C	0.100 ~ 75.995MHz 108.000 ~ 523.995MHz	0.100 ~ 75.995MHz 108.000 ~ 523.995MHz
D	193.150 ~ 231.145MHz 158.850 ~ 202.845MHz 352.850 ~ 412.845MHz	193.150 ~ 231.145MHz 352.850 ~ 412.845MHz
E	58.150 ~ 134.045MHz 166.050 ~ 465.945MHz	58.150 ~ 134.045MHz 166.050 ~ 465.945MHz

2.1.3 Receiver System

2.1.3.1 VHF/220MHz receiver circuit

Note: The 220MHz receiver circuit is applicable only to the TH-D75A.

■Band A VHF/220MHz receiver circuit

The reception signal from the antenna passes through the filter circuit and enters the RF AMP (LNA: Q404). The signal amplified by the RF AMP enters the distribution circuit for signal distribution with the Band B. The distributed signal passes through RF ATT (D411) and notch filter (NOTCH: C438, TH-D75A only), and is amplified by the second RF AMP (Q402). The signal is amplified by the RF AMP, passes through the band-pass filter, and enters the first mixer (1st MIX: Q400). The signal is converted to a first IF of 57.15MHz after the signal undergoes upper heterodyne conversion by the first local oscillation frequency. Then the signal is amplified by the IF AMP (Q900) after the signal passes through the MCF (XF1), and applied to the IF IC (IC900).

The signal undergoes upper heterodyne conversion in the IF IC by the second local oscillation frequency (57.6MHz). Then the signal is converted to a second IF of 450kHz and detected to generate an audio signal.

■Band B VHF/220MHz receiver circuit

The reception signal from the antenna passes through the filter circuit and enters the RF AMP (LNA: Q404). The signal amplified by the RF AMP enters the distribution circuit for signal distribution with the Band A. The distributed signal passes through RF ATT (D512) and is amplified by the second RF AMP (Q502). The signal is amplified by the RF AMP, passes through the band-pass filter, and enters the first mixer (1st MIX: Q500). The signal is converted to a first IF of 58.05MHz after the signal undergoes upper heterodyne conversion by the first local oscillation frequency. Then the signal is amplified by the IF AMP (Q1000) after the signal passes through the MCF (XF2), and applied to the IF IC (IC1002).

The signal undergoes lower heterodyne conversion in the IF IC by the second local oscillation frequency (57.6MHz). Then the signal is converted to a second IF of 450kHz and detected to generate an audio signal. While the transceiver is in AM/SSB/CW mode, the signal is converted to a third IF of 10.8kHz after the signal undergoes upper heterodyne conversion by the third local oscillation frequency (460.8kHz). Then the signal is input into the CODEC (IC2011).

■VHF/220MHz accompanying circuit

Tuning voltage output from the D/A converter (DAC: IC2037) under the control of the MAIN MPU (IC2005) is applied to each band-pass filter through a variable-capacitance diode so that the respective band-pass filters will be tuned to target frequencies.

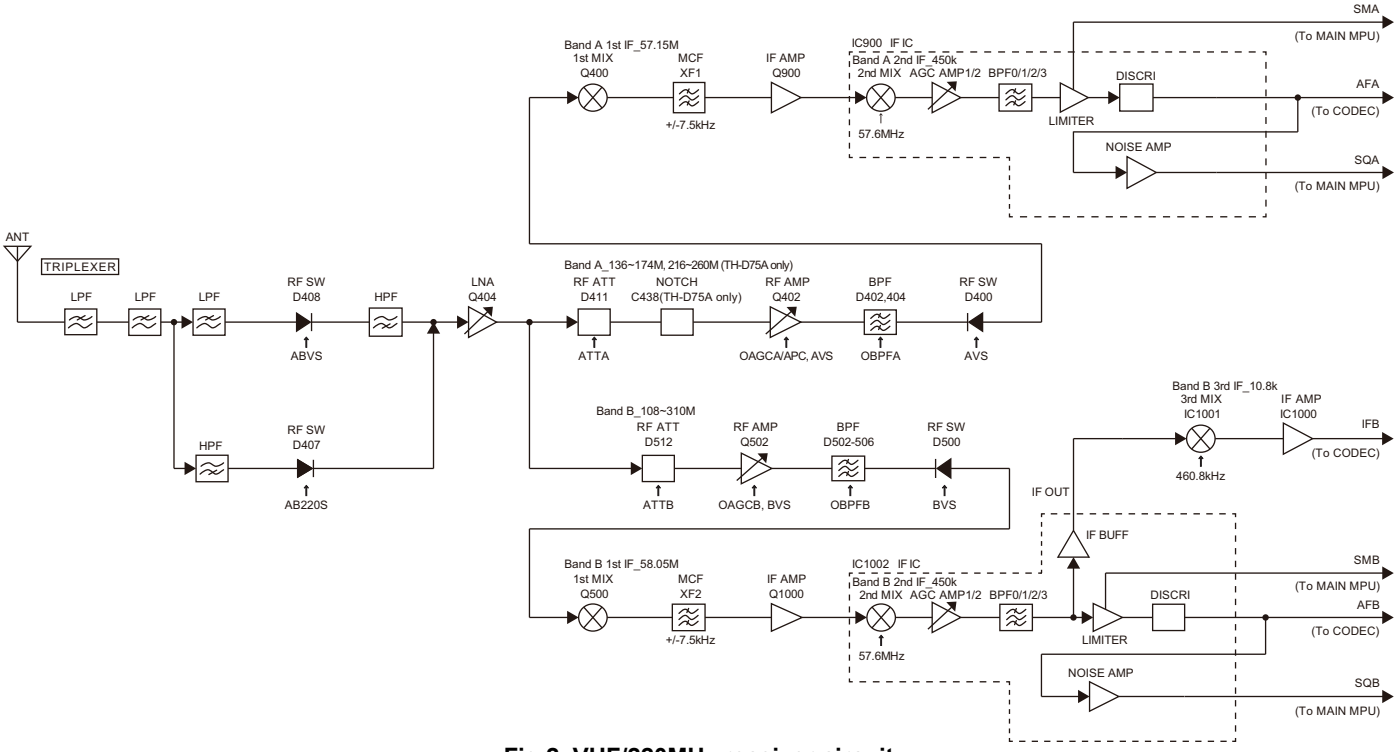


Fig.2 VHF/220MHz receiver circuit

2.1.3.2 UHF receiver circuit

■Band A UHF receiver circuit

The reception signal from the antenna passes through the filter circuit and enters the RF AMP (LNA: Q406). The signal amplified by the RF AMP enters the distribution circuit for signal distribution with the Band B. The distributed signal passes through RF ATT (D410) and is amplified by the second RF AMP (Q403). The signal is amplified by the RF AMP, passes through the band-pass filter, and enters the first mixer (1st MIX: Q400). The signal is converted to a first IF of 57.15MHz after the signal undergoes lower heterodyne conversion by the first local oscillation frequency.

The signal undergoes upper heterodyne conversion in the IF IC by the second local oscillation frequency (57.6MHz). Then the signal is converted to a second IF of 450kHz and detected to generate an audio signal.

■Band B UHF receiver circuit

The reception signal from the antenna passes through the filter circuit and enters the RF AMP (LNA: Q406). The signal amplified by the RF AMP enters the distribution circuit for signal distribution with the Band A. The distributed signal passes through RF ATT (D511) and is amplified by the second RF AMP (Q503). The signal is amplified by the RF AMP, passes through the band-pass filter, and enters the first mixer (1st MIX: Q500). The signal is converted to a first IF of 58.05MHz after the signal undergoes lower heterodyne conversion by the first local oscillation frequency. Then the signal is amplified by the IF AMP (Q1000) after the signal passes through the MCF (XF2), and applied to the IF IC (IC1002).

The signal undergoes lower heterodyne conversion in the IF IC by the second local oscillation frequency (57.6MHz). Then the signal is converted to a second IF of 450kHz and detected to generate an audio signal.

While the transceiver is in AM/SSB/CW mode, the signal is converted to a third IF of 10.8kHz after the signal undergoes upper heterodyne conversion by the third local oscillation frequency (460.8kHz). Then the signal is input into the CODEC (IC2011).

■UHF accompanying circuit

Tuning voltage output from the D/A converter (DAC: IC2037) under the control of the MAIN MPU (IC2005) is applied to each band-pass filter through a variable-capacitance diode so that the respective band-pass filters will be tuned to target frequencies.

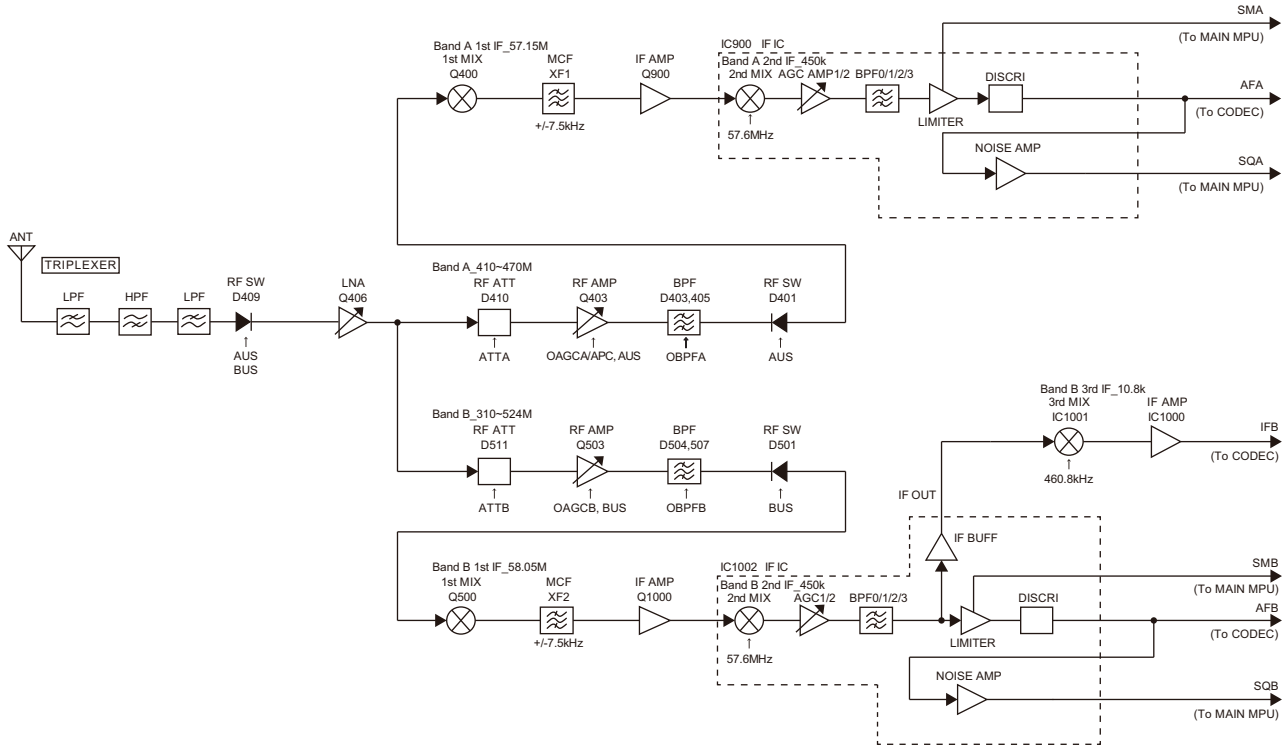


Fig.3 UHF receiver circuit

2.1.3.3 HF receiver circuit

■HF receiver circuit

The received signal from the antenna passes through the filter circuit and RF ATT (D1710), and then enters the RF AMP (Q1707). The signal amplified by the RF AMP is amplified by the second RF AMP (Q1708), and enters the first mixer (1st MIX: Q500).

The signal is converted to a first IF of 58.05MHz after the signal undergoes upper heterodyne conversion by the first local oscillation frequency. Then the signal is amplified by the IF AMP (Q1000) after the signal passes through the MCF (XF2), and applied to the IF IC (IC1002).

The signal undergoes lower heterodyne conversion in the IF IC by the second local oscillation frequency (57.6MHz). Then the signal is converted to a second IF of 450kHz and detected to generate an audio signal.

While the transceiver is in AM/SSB/CW mode, the signal is converted to a third IF of 10.8kHz after the signal undergoes upper heterodyne conversion by the third local oscillation frequency (460.8kHz). Then the signal is input into the CODEC (IC2011).

■BAR Antenna circuit

The bar antenna can be selected for HF reception.

The reception signal from the bar antenna passes through the tuning circuit and enters the RF AMP (Q1712). Then the signal is received on the same path in the HF receiving circuit.

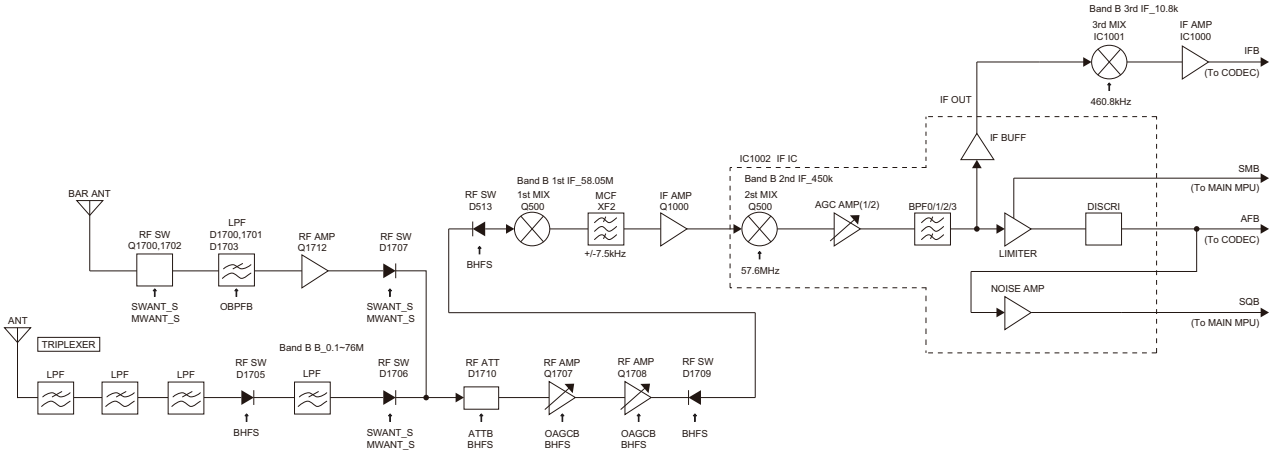


Fig.4 HF receiver circuit

2.1.3.4 FM TUNER receiver circuit

The reception signal from the antenna passes through the filter circuit and enters the RF AMP (Q1709). The signal amplified by the RF AMP is further amplified by the second RF AMP (Q2016) after the signal passes through the band-pass filter, and enters the FM TUNER (IC2047). The RF signal is demodulated in the FM TUNER and converted into an audio signal.

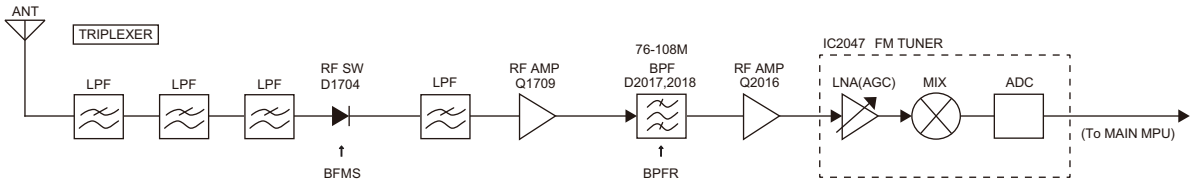


Fig.5 FM Tuner receiver circuit

2.1.4 Transmitter System

2.1.4.1 Transmitter circuit

The Band B VCO/PLL VHF transmission signal that is sent from the RF AMP (Q201) passes through the RF SWs (D204 and D207) and is amplified by the pre-drive amplifier (PRE DRV AMP: IC201) and drive amplifier (DRV AMP: Q212). The signal passes through the RF SWs (D212 and D217), and the final amplifier (FINAL AMP: Q217) amplifies the signal to the final output level. The amplified VHF transmission signal passes through the antenna switches (RF SW: D221, D222, D223, D235 and D236) and triplexer, and is fed to the antenna (ANT).

The Band B VCO/PLL UHF transmission signal that is sent from the RF AMP (Q201) passes through the RF SWs (D202 and D205) and is amplified by the pre-drive amplifier (PRE DRV AMP: IC201) and drive amplifier (DRV AMP: Q212). The signal passes through the RF SW (D214), and the final amplifier (FINAL AMP: Q217) amplifies the signal to the final output level. The amplified UHF transmission signal passes through the antenna switches (RF SW: D218, D219, D227, D228, D237 and D238) and triplexer, and is fed to the antenna (ANT).

The following circuit operation description applies only to the TH-D75A.

The Band B VCO/PLL 220MHz transmission signal that is sent from the RF AMP (Q201) passes through the RF SWs (D203 and D206) and is amplified by the pre-drive amplifier (PRE DRV AMP: IC201) and drive amplifier (DRV AMP: Q212). The signal passes through the RF SW (D213), and the final amplifier (FINAL AMP: Q218) amplifies the signal to the final output level. The amplified 220MHz transmission signal passes through the antenna switches (RF SW: D224 and D225), and triplexer, and is fed to the antenna (ANT).

2.1.4.2 APC circuit

The automatic power control (APC) circuit ensures stable TX power and is in control of TX power by detecting voltage generation from the drain current of the final amplifier (FINAL AMP: Q217 or Q218 [TH-D75A only]) in use.

The voltage generated in the resistors (R226 and R227) by the drain current of the final amplifier (Q217) is amplified by the operational amplifiers (APC: IC200 and Q207). The obtained voltage (CURR) is fed to the MAIN MPU (IC2005) via A/D convertor (ADC: IC2029), and the difference in voltage during transmission and adjustment is compared. The MAIN MPU controls TX power adjustment value according to the compared voltage difference and controls APC voltage via D/A convertor (DAC: IC2037) and operational amplifier (BUFF: IC502).

The transmit output is controlled by changing the gate voltage of the drive amplifier (DRV AMP: Q212) and final amplifier (FINAL AMP: Q217 or Q218 [TH-D75A only]) according to this APC voltage (OAGCA/APC).

2.1.4.3 Thermal protection circuit

The MAIN MPU (IC2005) monitors the detected voltage (FTH) of the thermistor (TH200) arranged for the prevention of the thermal breakdown of the final amplifier (FINAL AMP: Q217 or Q218 [TH-D75A only]) in use.

An APC voltage (OAGCA/APC) change will occur when the temperature exceeds the preset temperature, at which time the TX power will be controlled to prevent excessive heat generation.

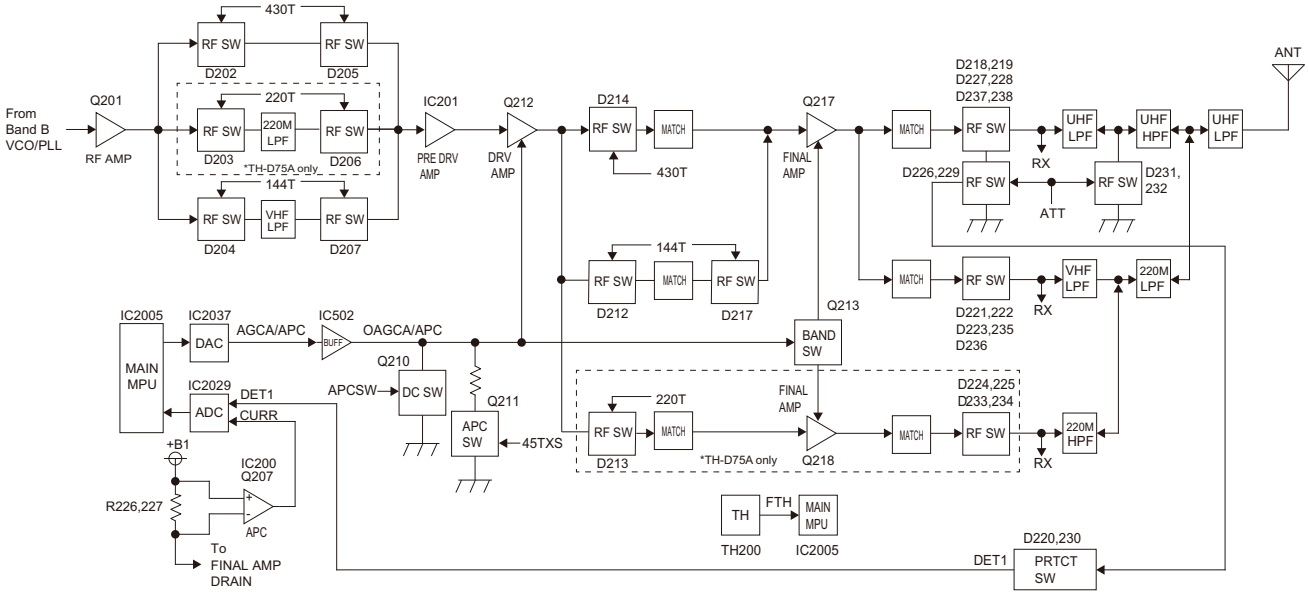


Fig.6 Transmitter circuit

2.1.5 Local Oscillation Circuit

2.1.5.1 VCO/PLL circuit

The first local oscillation signal in the Band A is generated by a PLL with built-in VCO (VCO/PLL: IC800). The RF signal output from the VCO/PLL is amplified by the first local oscillation amplifier (RF AMP: Q800) and then enters the first mixer (1st MIX: Q400) for Band A via the LPF. Similarly, the first local oscillation signal in the Band B is also generated by a PLL with built-in VCO (VCO/PLL: IC700). The RF signal output from the VCO/PLL is amplified by the first local oscillation amplifier (RF AMP: Q700) and then enters the first mixer (1st MIX: Q500) for the Band B via the LPF. These two VCO/PLLs (IC700 and IC800) are controlled by the SUB MPU (IC1103).

The RF signal for transmission is generated by a VCO/PLL (IC700). The RF signal is amplified by the RF AMP (Q201) and then enters the transmitter circuit.

TCXO1 (X600) and TCXO2 (X601) are the reference signal sources for the PLL. Output signal of these two TCXOs are amplified by TCXO amplifiers (RF AMP: Q600 and Q601) respectively, and either one signal selected by the analog switches (ANA SW: IC604 and IC605) is fed to VCO/PLL. TCXO1 is also used as the second local oscillator signal for the receiver circuit. This signal is amplified by the second local oscillation amplifier (RF AMP: Q801) and then enters each IF IC.

2.1.5.2 Lock voltage

Lock detection signal is sent from the VCO/PLLs (IC700 and IC800).
The lock detection voltage is high when the PLL is locked and low when it is unlocked.
The MAIN MPU (IC2005) is in control of the switching timing of transmission and reception by monitoring these voltages.

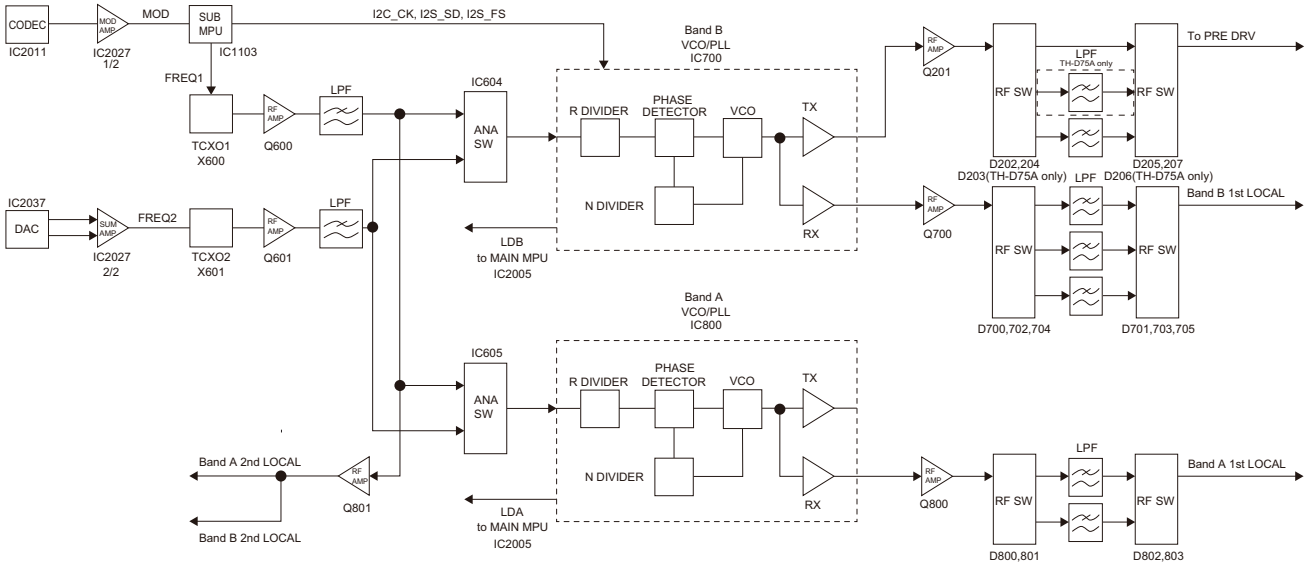


Fig.7 Local oscillation circuit

2.1.6 Power Supply Circuit

2.1.6.1 DC-IN circuit

The +B power supply will be provided with a constant voltage of 8.4V through the charging control IC (DC/DC DRV: IC108) and the switching FETs (DC/DC SW: Q102 and Q103) when power is supplied to the DC-IN JACK or USB connector (USB Type-C). The CHRG_oK pin (pin 4 of IC108) will be set to a high level. When the +B voltage is 5.3V or higher, the output of the comparator IC (AMP: IC106) will be fixed to a low level and the collector voltage of INV (Q101) will be set to a high level.
When the CHRG_oK pin of the IC108 is set to a high level, the monostable multivibrator IC (PLS GEN: IC103) will output a single-pulse signal. Also, when a battery at 5.5V or higher is connected, the monostable multivibrator IC will output a single-pulse signal. The EN pin (pin 1) of the DC/DC module (4.0V DC/DC: IC102) will be set to a high level when the power switch is pressed or when the single-pulse signal is sent to the logic circuitry consisting of the OR circuit (OR: IC104), AND SW (IC105), and NOT circuit (INV: Q100). When the EN pin of the DC/DC module (IC102) is set to a high level, the IC102 will output a constant voltage of 4.0 V to the 40C power supply, and the MAIN MPU (IC2005) will start.
When the MAIN MPU starts, the MAIN MPU will transmit a charge control instruction to the IC108 and set the 40CS to a high level at the same time.
The EN pin of the IC102 will be kept at a high level as the 40CS is set to a high level. As a result, the IC102 will output 4.0 V to the 40C continuously, and the MAIN MPU will continue to operating.

2.1.6.2 Lithium-ion Battery charging control circuit

The charging control IC (DC/DC DRV: IC108) will charge the lithium battery by receiving the charge control instruction from the MAIN MPU (IC2005).
The IC108 will detect the battery voltage and the battery charging current, and operate as shown below.
If the battery voltage is less than 6.0V, the IC108 and DC/DC SWs (Q102 and Q103) will supply a constant voltage of 6.0V to the +B power supply, and control the gate voltage of BATT SW (Q104) and perform pre-charging at a charging current of 128mA.
If the battery voltage is 6.0V or higher and less than 8.4V, the Q104 will be turned ON. Then the IC108, Q102, and Q103 will perform switching (constant current charging) so that the charging current will be a constant current as specified, and supply a voltage almost the same as the battery voltage to the +B power supply.
When the voltage battery rises to 8.4 V, the OR circuit (OR: IC104) will be kept turned ON, and the IC108, Q102, and Q103 will provide the +B power supply with a constant voltage of 8.4 V and perform the constant voltage charging of the battery.
During the constant voltage charging of the battery, the charging current will gradually decrease. The battery will be deemed to be fully charged when the charging current reaches 96 mA or below, and the Q104 will be turned OFF, and the charging will be completed.
If the charging of the battery is completed while the transceiver is in signal reception or a standby state, the IC108, Q102, and Q103 will continue providing a constant voltage of 8.4 V to the +B power supply.
If the transceiver is charging during power-off and has finished charging, the MAIN MPU will send a charge stop instruction to the IC108, and the IC108 will stop charging the battery. The MAIN MPU will set the 40CS to a low level, thus stopping the operation of the DC/DC module (IC102) to block the 40C power supply. Then the MAIN MPU will stop operating, and the transceiver will be turned off.
If the transceiver starts transmission while the battery is charged, the MAIN MPU will send a charge stop instruction to the IC108 to stop charging the battery. Upon completion of transmission, the MAIN MPU will transmit a charge control instruction to the IC108 to resume charging the battery.

2.1.6.3 Protection circuit

The MAIN MPU (IC2005) monitors the temperature detected by the thermistor (TH2000). If the temperature is out of an optimal temperature range of 0°C to 60°C, the MAIN MPU will transmit a charge stop instruction to the charging control IC (DC/DC DRV: IC108) to stop charging the battery.

Also, the MAIN MPU monitors the DC-IN JACK voltage. If an overvoltage beyond guarantee is applied, the MAIN MPU will stop the operation of the transceiver and protect the circuits.

If overvoltage is applied to the USB terminal or over current to the USB terminal, the protection IC (IC2001) protects the external USB device and the main circuit.

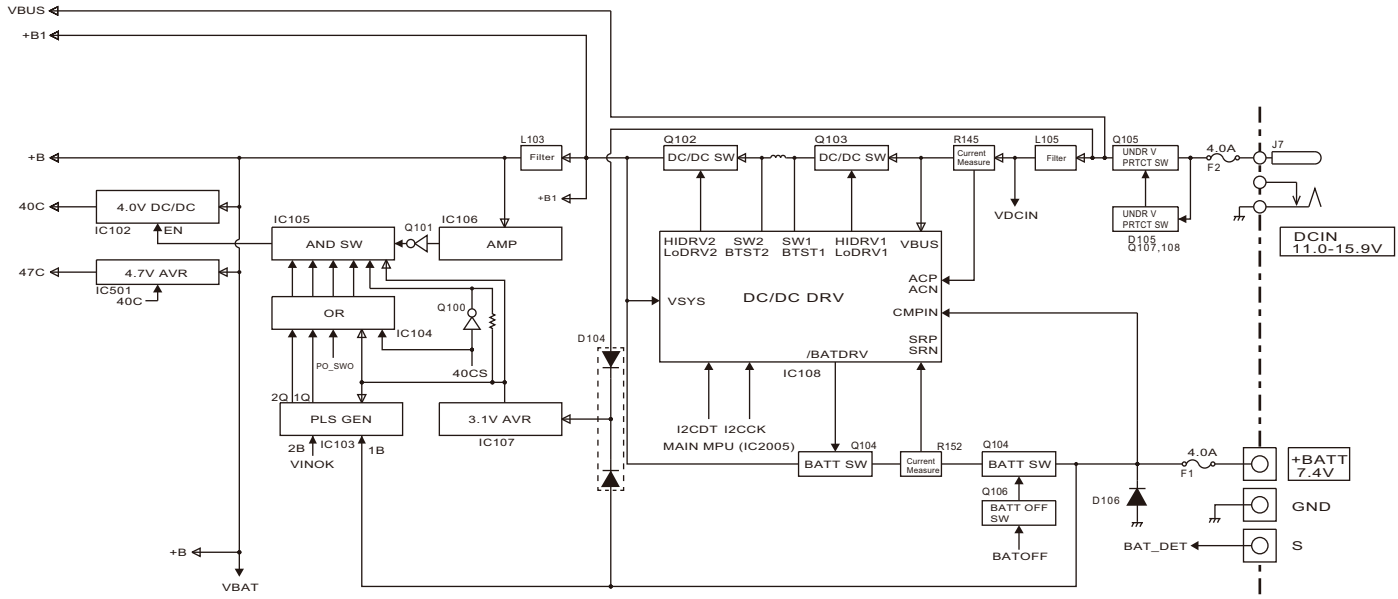


Fig.8 Power supply circuit

2.1.7 AF signal system

2.1.7.1 Reception AF circuit

■Demodulation signal circuit

Reception AF signals demodulated by the respective IF ICs (IC900 and IC1002) for the Band A and Band B are independently applied to the MAIN MPU (IC2005) through the CODEC (IC2011). The received AF signal is then de-emphasized and the volume adjusted. After that, the signal passes through CODEC and is finally amplified by the AF AMP (IC2003).

■Tone decode circuit

Reception AF signals for the Band A and Band B will be independently applied to the MAIN MPU (IC2005) if the CTCSS, DCS, and Weather Alert (TH-D75A only) function are ON. The selected signal components will be amplified to a necessary level for decoding processing.

■BEEP, DTMF circuit

The BEEP and DTMF signals generated from the MAIN MPU (IC2005) are applied to the AF AMP (IC2003) to drive the speakers, respectively. When a BEEP or DTMF signal is output, the AF mute switch in the MAIN MPU turns ON and the received AF signal is muted. This signal is output separately from the received AF signal.

■Squelch circuit

The amount of noise (SQA and SQB) and signal strength (SMA and SMB) obtained from the IF ICs (IC900 and IC1002) are taken into the MAIN MPU (IC2005) to control the AF mute switch.

■FM TUNER circuit

The FM broadcasting band (76 to 108MHz, WFM band) can be received from the SMA connector.
The received signal passes through a band-pass filter, is amplified by the RF AMP (Q2016), and then enters the FM TUNER (IC2047).
The signal is demodulated and detected in the FM TUNER to become an audio signal and de-emphasized.
Then the signal enters the MAIN MPU (IC2005) and the volume is adjusted. The signal is then finally amplified by the AF AMP (IC2003) and then passes through SP mute switches (SW: Q2002, Q2003) to drive the speaker.

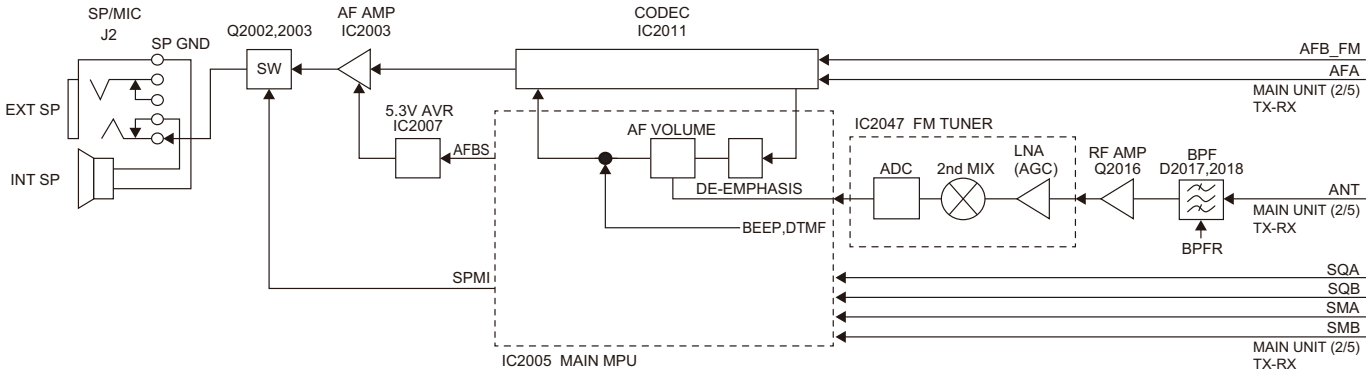


Fig.9 Reception AF circuit

2.1.7.2 Transmission AF circuit

■Modulation signal circuit

The transmission AF signal from the microphone is amplified by the MIC AMP (IC2004). Then the signal passes through the CODEC (IC2011) and enters the MAIN MPU (IC2005), where it is pre-emphasized.
The TONE, DTMF, and 1200/9600bps packet transmission data is generated by the MAIN MPU. The 1200bps packet transmit data is passed through a baseband filter (LPF) and then subcarrier modulated. The 9600bps packet transmission data is output after passing through a baseband filter (LPF).
The transmission AF signal that has been level adjusted to an appropriate value passes through the CODEC and MOD AMP (IC2027), and enters the ADC of the SUB MPU (IC1103). The signal converted by the ADC is converted to I2S format and enters the VCO/PLL (IC700).

■VOX circuit

The input signal from the microphone is amplified by the MIC AMP (IC2004) and detected by the DC-detector (VOX: D2011) to obtain a DC voltage in proportion to the input signal level. This voltage goes into the MAIN MPU (IC2005) to monitor the audio signal level. The MAIN MPU determines whether transmission is possible or not according to the audio signal level and performs transmission/reception switching control.

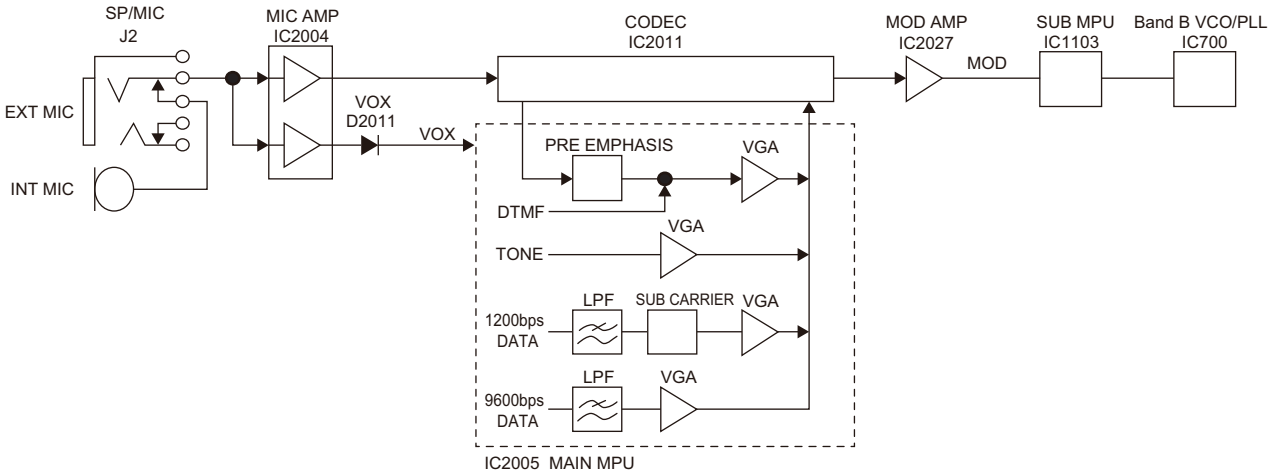


Fig.10 Transmission AF circuit

2.1.8 Control system

The control circuit consists of the MAIN MPU (IC2005), its peripheral circuits, and the SUB MPU (IC1103).
The MAIN MPU has the following primary roles.

(1) Switching of transmission and reception by the PTT signal.
(2) Reading of the system program from the memory.
(3) Control of the audio mute circuit according to decode data.

The SUB MPU has the following primary roles.

(1) Frequency program transfer to the PLL and IF IC control.

2.1.8.1 MAIN MPU

The MAIN MPU (IC2005) incorporates a 32-bit RISC processor, fixed/floating point VLIW digital signal processors, and peripheral functions.

This MAIN MPU operates at 278.4MHz (MAX) clock and 3.3V/1.8V/1.2V DC. The MAIN MPU controls the transmission and reception of data to and from the flash memory (FLASH: IC2008), DDR (IC2002), control circuit, display circuit, SUB MPU (IC1103), and external devices.

2.1.8.2 Memory circuit

The memory circuit consists of the MAIN MPU (IC2005), DDR (IC2002), and flash memory (FLASH: IC2008).

The flash memory has a capacity of 256Mbits, including a transceiver control program and recording data for the MAIN MPU. The DDR has a capacity of 512Mbits. The MAIN MPU copies the program from the flash memory to DDR. The MAIN MPU then uses the DDR as a work area.

2.1.8.3 LCD

The LCD is controlled by a parallel interface from the MAIN MPU (IC2005).

2.1.8.4 Key detection circuit

The key is detected on the I/O expansion IC (I/O EXP: IC2043). The key pressed by IC2043 are notified to the MAIN MPU (IC2005) through the serial line.

2.1.8.5 SUB MPU circuit

The SUB MPU (IC1103) consists of an ARM-based 32-bit processor and 64K bytes of flash memory. The SUB MPU controls the IF ICs (IC900 and IC1002) and VCO/PLLs (IC700 and IC800).

2.1.8.6 DSP

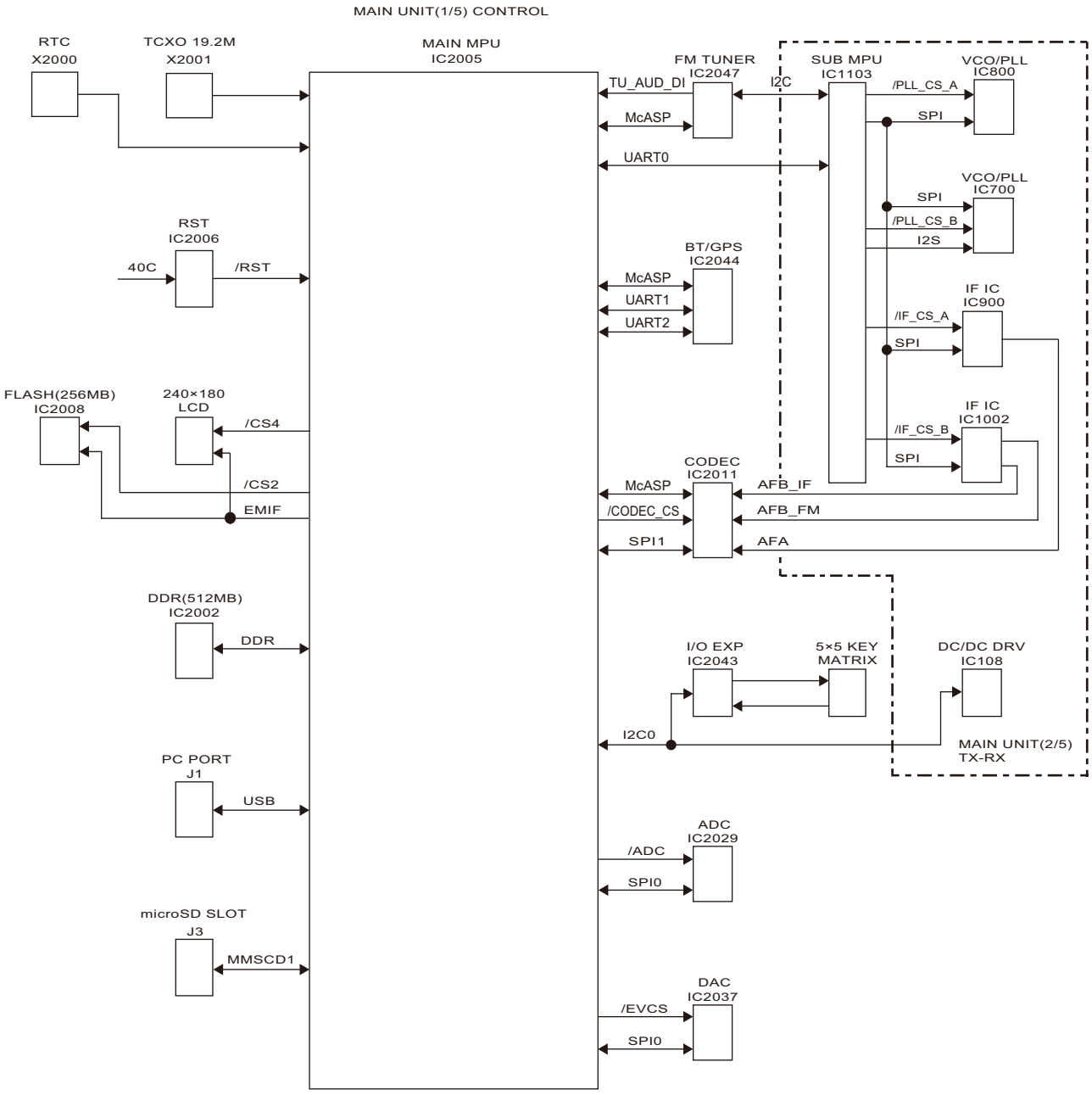
The DSP circuit consists of the MAIN MPU (IC2005) and a baseband signal. The DSP operates at a 278.4MHz (MAX) clock, the I/O section operates at 3.3V/1.8V, and the core section operates at 1.2V.

2.1.8.7 PC Port

The PC port communicates with the MAIN MPU (IC 2005) via a USB connector (USB Type-C). The PC port supports connection (Communication with ARFC-D75 and MCP-D75, Terminal mode via USB connection, etc.) to an external device (PC).

2.1.8.8 microSD slot

The microSD communicates with the MAIN MPU (IC2005) through the microSD slot (J3).



*Some signal names in Figure 11 are interface names.
This is different from the signal name on the block diagram.

Fig.11 Control circuit

2.1.8.9 Bluetooth/GPS Circuit

The Bluetooth/GPS circuit mainly consists of the Bluetooth/GPS IC (BT/GPS: IC2044).

The Bluetooth/GPS requires two clocks, one of which is the 19.2MHz (X2003) clock and the other is the clock at 32.768kHz (X2004) for the UART.

The Bluetooth/GPS IC uses the HCI UART and AI2 UART to communicate with the MAIN MPU (IC2005). The UART and digital audio (PCM), which is the interface between the MAIN MPU and the Bluetooth/GPS IC, are level-converted using a level shift ICs (LV SFT: IC2036, IC2046 and IC2048). The power supply of the Bluetooth/GPS IC is supplied with 1.8 V and 3.3 V generated from two discrete external regulators (1.8 V AVR: IC2038 and 3.3 V AVR: IC2041).

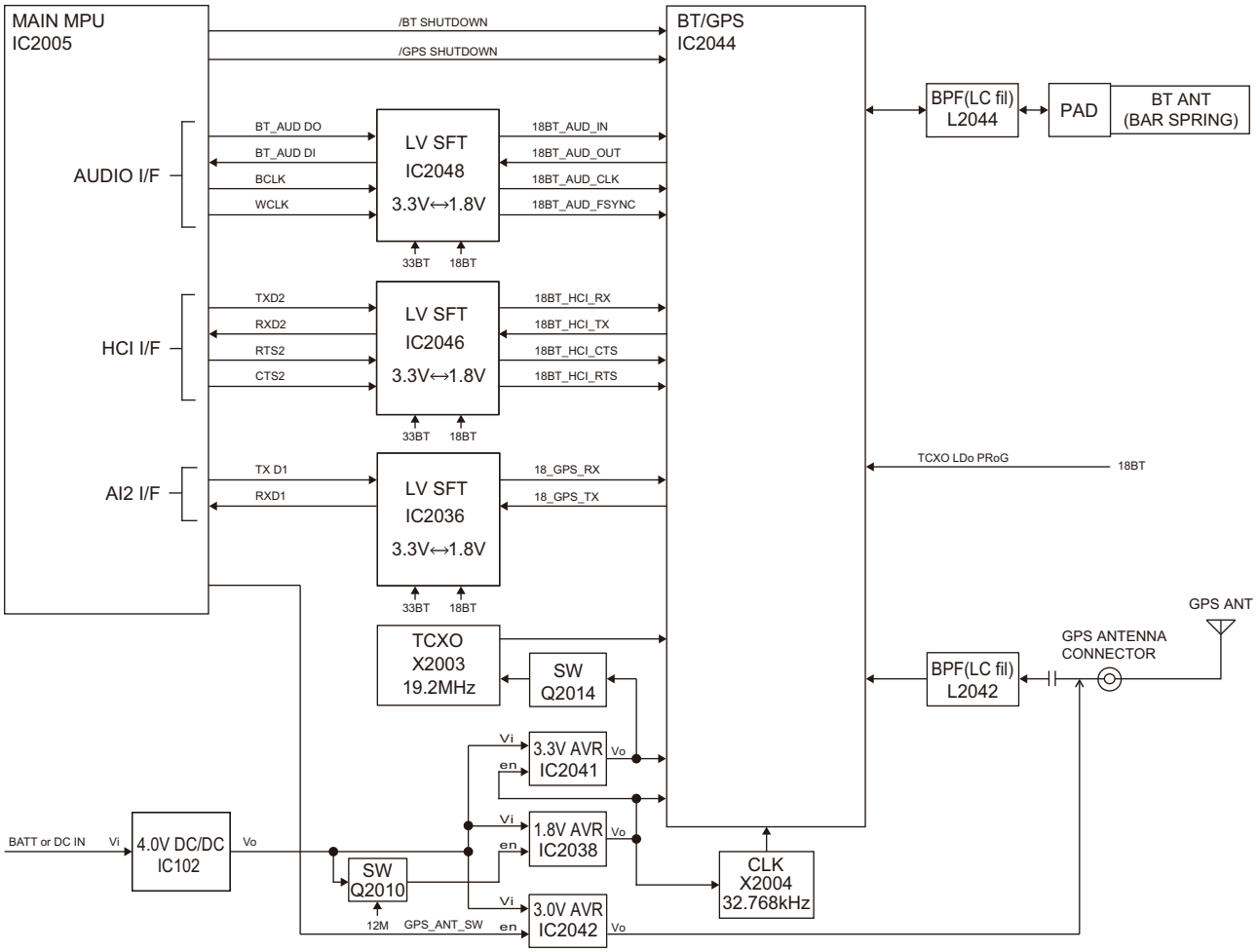


Fig.12 Bluetooth/GPS circuit

2.2 COMPONENTS DESCRIPTION

2.2.1 MAIN UNIT (XC1-388K-01 , XC1-388E-01)

Ref. No.	Use / Function	Operation/Condition/Compatibility
IC102	40C DC/DC	4.0V DC/DC
IC103	Pulse Genera-tor	Power ON Logic for DC IN or Battery Insert [PLS GEN]
IC104	OR Circuit	Power ON Logic for DC IN or Battery Insert [OR]
IC105	AND SW	Power ON Logic for DC IN or Battery Insert [AND SW]
IC106	AMP	Power ON Logic for DC IN or Battery Insert [AMP]
IC107	31BU AVR	3.1V Regulator [3.1V AVR]
IC108	Battery Charger	DC/DC Driver IC with Battery Charg-er [DC/DC DRV]
IC200	APC	AMP [APC]
IC201	PRE DRIVE AMP	TX Pre-drive AMP [PRE DRV AMP]
IC500	33IF AVR	3.3V Regulator [3.3V AVR]
IC501	47C AVR	4.7V Regulator [4.7V AVR]
IC502	BUFFER	OP AMP (AGC/APC/BPF) Band A [BUFF]
IC503	33RB AVR	3.3V Regulator [3.3V AVR]
IC504	BUFFER	OP AMP (AGC/BPF) Band B [BUFF]
IC600	33C AVR	3.3V Regulator [3.3V AVR]
IC601	33RAD AVR	3.3V Regulator [3.3V AVR]
IC602	33CB AVR	3.3V Regulator [3.3V AVR]
IC603	33CA AVR	3.3V Regulator [3.3V AVR]
IC604	Analog SW	REF Signal for Band B PLL [ANA SW]
IC605	Analog SW	REF Signal for Band A PLL [ANA SW]
IC606	33RA AVR	3.3V Regulator [3.3V AVR]
IC700	VCO/PLL	VCO/PLL IC for Band B [VCO/PLL]
IC800	VCO/PLL	VCO/PLL IC for Band A [VCO/PLL]
IC900	IF IC	RX Band A [IF IC]
IC1000	IF AMP	RX Band B [IF AMP]
IC1001	3rd Mixer	Band B [3rd MIX]
IC1002	IF IC	RX Band B [IF IC]
IC1100	33S AVR	3.3V Regulator [3.3V AVR]
IC1101	AND SW	Band A VCO/PLL IC / IF IC Control Signal [AND SW]
IC1102	AND SW	Band B VCO/PLL IC / IF IC Control Signal [AND SW]
IC1103	Sub MPU	SUB MPU
IC2000	33SD AVR	3.3V Regulator [3.3V AVR]
IC2001	Protection	USB Over Voltage Protection [OVR V PRTCT]
IC2002	LPDDR	Program for Operation [DDR]
IC2003	AF AMP	SP Output [AF AMP]
IC2004	MIC AMP	OP AMP [MIC AMP]
IC2005	Main MPU	MPU with DSP [MAIN MPU]
IC2006	Reset	3.5V Detect [RST]
IC2007	AF AMP AVR	Variable Regulator (5.3V) [5.3V AVR]
IC2008	FLASH	Store The program and user data [FLASH]
IC2009	/BINT	5.0V Detect [/BINT]
IC2011	CODEC	Coder/Decoder for IF and AF [CO-DEC]
IC2012	LED Driver	LCD Backlight Driver [LED DRV]
IC2013	AND SW	LCD Backlight Control [AND SW]
IC2014	CODEC AVR	1.8V for CODEC [1.8V AVR]
IC2015	33M AVR	3.3V Regulator [3.3V AVR]
IC2016	30M AVR	3.0V Regulator [3.0V AVR]
IC2017	Level Shift	Level Shift 1.8V Â® 3.1V [LV SFT]
IC2018	31BU AVR	3.1V Regulator [3.1V AVR]
IC2019	33AD AVR	3.3V Regulator [3.3V AVR]
IC2020	18M DC/DC	1.8V DC/DC
IC2021	Inverter	Oscillation Circuit for CODEC [INV]
IC2023	ADC VREF	2.1V Reference Voltage for ADC [ADC VREF]
IC2024	12M DC/DC	1.2V DC/DC
IC2025	SW	Pull up Switch [SW]
IC2026	12BU AVR	1.2V Regulator [1.2V AVR]
IC2027	MOD AMP	OP AMP [MOD AMP]
IC2028	Load SW	18M ON / OFF [LOAD SW]
IC2029	ADC	Signal Level Converter [ADC]
IC2030	Bus SW	Analog Signal ON / OFF [BUS SW]
IC2031	Gate SW	SDO0, SCK0, /EVCS ON / OFF [GATE SW]
IC2032	AND SW	Power ON / OFF [AND SW]
IC2033	Gate SW	SDO0, SCK0, /EVCS ON / OFF [GATE SW]
IC2035	Gate SW	SDO0, SCK0, /EVCS ON / OFF [GATE SW]
IC2036	Level Shift	Level Shift 1.8V <=> 3.3V [LV SFT]
IC2037	DAC	Signal Level Adjust [DAC]
IC2038	18BT AVR	1.8V Regulator [1.8V AVR]
IC2040	LAMP B	Variable Regulator (5.1V) [5.1V AVR]
IC2041	33BT AVR	3.3V Regulator [3.3V AVR]
IC2042	30GPS AVR	3.0V Regulator [3.0V AVR]
IC2043	I/O Expander	Key Scan and LCD Backlight Control [I/O EXP]
IC2044	BT and GPS	Bluetooth and GPS Control [BT/GPS]
IC2045	AND SW	BCLK, WCLK ON / OFF [AND SW]
IC2046	Level Shift	Level Shift 1.8V <=> 3.3V [LV SFT]
IC2047	FM TUNER	FM TUNER

Ref. No.	Use / Function	Operation/Condition/Compatibility
IC2048	Level Shift	Level Shift 1.8V <=> 3.3V [LV SFT]
IC2049	Inverter	Oscillation Circuit for FM TUNER IC [INV]
IC2050	Bus SW	Analog Signal ON / OFF [BUS SW]
Q100, 101	Inverter	Power ON Logic for DC IN or Battery Insert [INV]
Q102, 103	SW	Switching FET for DC/DC with Battery Charger [DC/DC SW]
Q104	SW	Battery [BATT SW]
Q105	SW	Under Voltage Protection Switch [UNDR V PRTCT SW]
Q106	SW	Battery OFF [BATT OFF SW]
Q107	SW	Under Voltage Protection Switch [UNDR V PRTCT SW]
Q108	SW	Under Voltage Protection Switch [UNDR V PRTCT SW]
Q200	DC SW	33TX ON / OFF [DC SW]
Q201	RF AMP	TX AMP [RF AMP]
Q202	DC SW	ATT [DC SW]
Q203	DC SW	UHF TX [DC SW]
Q204	DC SW	VHF TX [DC SW]
Q205	DC SW	220M TX [DC SW] * Q205 is only used in XC1-388K-01.
Q206	DC SW	VHF TX [DC SW]
Q207	APC	AMP [APC]
Q208, 209	DC SW	47C ON / OFF [DC SW]
Q210	DC SW	TX ON / OFF [DC SW]
Q211	SW	APC Slope Change Switch [APC SW]
Q212	DRIVE AMP	TX Drive AMP [DRV AMP]
Q213	SW	Band Switch (VHF,UHF/220M) [BAND SW]
Q214	DC SW	VHF TX [DC SW]
Q215	DC SW	220M TX [DC SW] * Q215 is only used in XC1-388K-01.
Q216	DC SW	UHF TX [DC SW]
Q217	FINAL AMP	TX Final AMP (VHF/UHF) [FINAL AMP]
Q218	RF AMP	TX Final AMP (220M) [FINAL AMP] * Q218 is only used in XC1-388K-01.
Q400	1st Mixer	Band A [1st MIX]
Q401	DC SW	1st Mixer Band A [DC SW]
Q402	RF AMP	VHF/220M RX Band A [RF AMP]
Q403	RF AMP	UHF RX Band A [RF AMP]
Q404	LNA	VHF/220M RX [LNA]
Q405	SW	UHF RX Band A [SW]
Q406	LNA	UHF RX [LNA]
Q407	SW	220M RX [SW]
Q408	SW	UHF RX [SW]

Ref. No.	Use / Function	Operation/Condition/Compatibility
Q409	SW	VHF RX [SW]
Q411	SW	220M RX Notch Band A [SW] * Q411 is only used in XC1-388K-01.
Q500	1st Mixer	Band B [1st MIX]
Q501	DC SW	1st Mixer Band B [DC SW]
Q502	RF AMP	VHF/220M RX Band B [RF AMP]
Q503	RF AMP	UHF RX Band B [RF AMP]
Q504	SW	VHF/220M RX Band A [SW]
Q505	SW	VHF/220M RX Band B [SW]
Q506	SW	VHF/220M RX [SW]
Q507	SW	UHF RX Band B [SW]
Q508	SW	UHF RX [SW]
Q509	SW	HF RX Band B [SW]
Q600, 601	RF AMP	TCXO AMP [RF AMP]
Q700	RF AMP	Band B 1st Local [RF AMP]
Q701-703	DC SW	Band B 1st Local [DC SW]
Q800	RF AMP	Band A 1st Local [RF AMP]
Q801	RF AMP	2nd Local AMP [RF AMP]
Q802, 803	DC SW	Band A 1st Local [DC SW]
Q900	IF AMP	RX Band A [IF AMP]
Q1000	IF AMP	RX Band B [IF AMP]
Q1100, 1101	SW	Beat Shift [SW]
Q1700	RF SW	MW BAR Antenna [RF SW]
Q1701	SW	HF RX Band B [SW]
Q1702	RF SW	SW BAR Antenna [RF SW]
Q1703, 1704	SW	HF (SMA Antenna) RX Band B [SW]
Q1705, 1706	SW	HF (BAR Antenna) RX Band B [SW]
Q1707, 1708	RF AMP	HF RX Band B [RF AMP]
Q1709	RF AMP	FM TUNER (WFM) [RF AMP]
Q1710	SW	HF (SMA Antenna) RX Band B [SW]
Q1711	SW	FM TUNER (WFM) [SW]
Q1712	RF AMP	HF (BAR Antenna) RX Band B [RF AMP]
Q2000	SW	Beat Shift [SW]
Q2001	SW	VBUS ON / OFF [SW]
Q2002, 2003	SW	SP Mute [SW]
Q2005	Level Shift	+B →3.3V [LV SFT]
Q2006	SW	MIC AMP ON / OFF [SW]
Q2007	SW	LCD Reset [SW]
Q2008	SW	33AD ON / OFF [SW]

Ref. No.	Use / Function	Operation/Condition/Compatibility
Q2009	SW	MOD AMP ON / OFF [SW]
Q2010	SW	18M DC/DC ON / OFF [SW]
Q2011	SW	Bus Switch ON / OFF [SW]
Q2012	SW	TX/Busy LEDs ON / OFF [SW]
Q2013	SW	47C ON / OFF [SW]
Q2014	SW	TCXO(GPS) ON / OFF [SW]
Q2016	RF AMP	RX Signal [RF AMP]
Q2017	SW	Blue LED ON / OFF [SW]
Q2018	SW	FM TUNER Clock ON / OFF [SW]
Q2019	SW	USB VBUS Switch [SW]
Q2020	SW	AF AMP ON / OFF [SW]
D100-102	Over Voltage Protection	Power ON Logic for DC IN or Battery Insert [OVR V PRTCT]
D103	Speed up	DC/DC with Battery Charger [SPD UP]
D104	OR Circuit	3.1V Power Supply [OR]
D105	Voltage Detect	Voltage Detect [V DET]
D106	Reverse Voltage Protection	Battery [REV V PRTCT]
D107	SW	Reverse Connect Protection [REV DET SW]
D108, 109	ESD Protection Diode	ESD Protection [ESD PRTCT]
D110, 111	SW	Under Voltage Protection Logic [UNDR V PRTCT SW]
D200, 201	SW	ATT Switch [SW]
D202	RF SW	UHF TX [RF SW]
D203	SW	220M TX [SW] * D203 is only used in XC1-388K-01.
D204	RF SW	VHF TX [RF SW]
D205	RF SW	VHF TX [RF SW]
D206	SW	220M TX [SW] * D206 is only used in XC1-388K-01.
D207	RF SW	UHF TX [RF SW]
D208, 209	SW	TX AMP ON / OFF [SW]
D210	SW	VHF TX [SW]
D211	SW	UHF TX [SW]
D212	RF SW	VHF TX [RF SW]
D213	SW	220M TX [SW] * D213 is only used in XC1-388K-01.
D214	RF SW	UHF TX [RF SW]
D215, 216	Reverse Current Protector	Reverse Current Protector [REV CURR PRTCT]
D217	RF SW	VHF TX [RF SW]
D218, 219	SW	UHF TX [SW]
D220	SW	TX Protector [PRTCT SW]

Ref. No.	Use / Function	Operation/Condition/Compatibility
D221-223	RF SW	VHF TX [RF SW]
D224, 225	RF SW	220M TX [RF SW] * D224 and D225 are only used in XC1-388K-01.
D226	RF SW	ATT [RF SW]
D227, 228	RF SW	UHF TX [RF SW]
D229	RF SW	ATT [RF SW]
D230	SW	TX Protector [PRTCT SW]
D231, 232	RF SW	ATT [RF SW]
D233, 234	RF SW	220M RX [RF SW] * D233 and D234 are only used in XC1-388K-01.
D235, 236	RF SW	VHF RX [RF SW]
D237, 238	RF SW	UHF RX [RF SW]
D239	Surge Protection	Surge Protection [SRG PRTCT]
D400	RF SW	VHF/220M RX Band A [RF SW]
D401	RF SW	UHF RX Band A [RF SW]
D402	BPF Tuning	VHF/220M RX Band A [BPF TUN]
D403	BPF Tuning	UHF RX Band A [BPF TUN]
D404	BPF Tuning	VHF/220M RX Band A [BPF TUN]
D405	BPF Tuning	UHF RX Band A [BPF TUN]
D407	RF SW	220M RX [RF SW]
D408	RF SW	VHF RX [RF SW]
D409	RF SW	UHF RX [RF SW]
D410	RF ATT	UHF RX Band A [RF ATT]
D411	RF ATT	VHF/220M RX Band A [RF ATT]
D500	RF SW	VHF/220M RX Band B [RF SW]
D501	RF SW	UHF RX Band B [RF SW]
D502	BPF Tuning	VHF/220M RX Band B [BPF TUN]
D504	BPF Tuning	UHF RX Band B [BPF TUN]
D505, 506	BPF Tuning	VHF/220M RX Band B [BPF TUN]
D507	BPF Tuning	UHF RX Band B [BPF TUN]
D509	SW	VHF RX [SW]
D510	SW	UHF RX [SW]
D511	RF ATT	UHF RX Band B [RF ATT]
D512	RF ATT	VHF/220M RX Band B [RF ATT]
D513	RF SW	HF RX Band B [RF SW]
D600, 601	RF SW	REF Signal for Band B PLL [RF SW]
D602, 603	RF SW	REF Signal for Band A PLL [RF SW]

Ref. No.	Use / Function	Operation/Condition/Compatibility
D700-705	RF SW	Band B 1st Local [RF SW]
D800-803	RF SW	Band A 1st Local [RF SW]
D1000	Over Voltage Protection	MOD Signal Input [OVR V PRTCT]
D1700, 1701	BAR Antenna Tuning	HF (BAR Antenna) RX Band B [BAR ANT TUN]
D1702	SW	HF (BAR Antenna) RX Band B [SW]
D1703	BAR Antenna Tuning	HF (BAR Antenna) RX Band B [BAR ANT TUN]
D1704	RF SW	FM TUNER (WFM) [RF SW]
D1705, 1706	RF SW	HF (SMA Antenna) RX Band B [RF SW]
D1707	RF SW	HF (BAR Antenna) RX Band B [RF SW]
D1708	RF SW	MW BAR Antenna [RF SW]
D1709	RF SW	HF RX Band B [RF SW]
D1710	RF ATT	HF RX Band B [RF ATT]
D1851-1862	LED	KEY Backlight [LED]
D2000-2008	ESD Protection Diode	ESD Protection [ESD PRTCT]
D2009	Reverse Current Protector	Reverse Current Protector [REV CURR PRTCT]
D2010, 2011	VOX	Current Steering [VOX]
D2012	Voltage Protector	Constant Voltage [V PRTCT]
D2013	Reverse Current Protector	Reverse Current Protector [REV CURR PRTCT]
D2014	Voltage Protector	Constant Voltage [V PRTCT]
D2015	SW	Bus Switch Power ON / OFF [BUS SW]
D2016	LED	TX/Busy [LED]
D2017, 2018	BPF Tuning	FM TUNER [BPF TUN]
D2019, 2020	ESD Protection Diode	ESD Protection [ESD PRTCT]
D2021, 2022	Voltage Protector	Constant Voltage [V PRTCT]

2.3 TERMINAL FUNCTION

2.3.1 MAIN UNIT (XC1-388K-01 , XC1-388E-01) (1/5) CONTROL

Pin No.	Name	I/O	Function
CN1 (to LCD)			
1	LEDK3	I	LED cathode 3
2	LEDK2	I	LED cathode 2
3	LEDK1	I	LED cathode 1
4	LEDA	O	LED anode
5	VSSA	-	Analog GND
6	VSSA	-	Analog GND
7	VCC	O	3V power supply
8	VCC	O	3V power supply
9	DC	O	LCD driver data / command switching signal
10	/CS	O	LCD driver CS signal
11	/RESET	O	LCD driver RESET signal
12	/RD	O	LCD driver RD signal
13	/WR	O	LCD driver WR signal
14	IMO	O	Interface mode select
15	BD15	I/O	LCD driver data bus
16	BD14	I/O	LCD driver data bus
17	BD13	I/O	LCD driver data bus
18	BD12	I/O	LCD driver data bus
19	BD11	I/O	LCD driver data bus
20	BD10	I/O	LCD driver data bus
21	BD09	I/O	LCD driver data bus
22	BD08	I/O	LCD driver data bus
23	BD07	I/O	LCD driver data bus
24	BD06	I/O	LCD driver data bus
25	BD05	I/O	LCD driver data bus
26	BD04	I/O	LCD driver data bus
27	BD03	I/O	LCD driver data bus
28	BD02	I/O	LCD driver data bus
29	BD01	I/O	LCD driver data bus
30	BD00	I/O	LCD driver data bus
31	CABC	-	NC
32	IOVCC	O	1.8V power supply
33	IOVCC	O	1.8V power supply
34	VSSD	-	Digital GND
35	VSSD	-	Digital GND
CN3 (to KEY)			
1	LAMP B	O	LAMP Power supply
2	NC	-	NC
3	LAMP GND	-	LAMP GND
4	SP-	I	SP GND
5	SP+	O	SP AF output

Pin No.	Name	I/O	Function
6	LAMP GND	-	LAMP GND
7	KEY_I0	I	Key matrix
8	KEY_I1	I	Key matrix
9	KEY_I2	I	Key matrix
10	KEY_I3	I	Key matrix
11	KEY_I4	I	Key matrix
12	KEY_O0	O	Key matrix
13	KEY_O1	O	Key matrix
14	KEY_O2	O	Key matrix
15	KEY_O3	O	Key matrix
16	KEY_O4	O	Key matrix
CN4 (to TX-RX)			
1	+B	I	+B power supply
2	DET1	I	Power detect signal
3	+B	I	+B power supply
4	FTH	I	Thermistor voltage for Final Amp
5	MOD	O	Modulation signal (TCXO)
6	CURR	I	Final current detection voltage
7	40C	I	4.0V power supply
8	SQA	I	Band A squelch voltage
9	40C	I	4.0V power supply
10	BPFA	O	Band A BPF adjustment signal
11	RAINT	O	Interrupt signal for FM TUNER (IC2047)
12	AFA	I	Band A audio signal
13	47C	I	4.7V power supply
14	SMA	I	Band A RSSI voltage
15	AGCB	O	Band B AGC signal
16	LDA	I	Band A lock detect signal
17	IFB	I	Band B SSB/CW/AM IF signal
18	LDB	I	Band B lock detect signal
19	AFB_FM	I	Band B D-star/FM audio signal
20	VDCIN	I	VDCIN voltage for AD converter
21	SQB	I	Band B squelch voltage
22	BAT_DET	I	Battery detection signal
23	SMB	I	Band B RSSI voltage
24	GND	-	GND
25	I2CCK	O	I2C CLK signal for DC/DC DRV (IC108)
26	/EN_CLK_R	I	CLK power switch for FM TUNER (IC2047)
27	I2CDT	I/O	I2C DATA signal for DC/DC DRV (IC108)
28	BFMS	I	Band B switch signal for power supply (76-108MHz)
29	I2CCKR	I	I2C CLK signal for FM TUNER (IC2047)

Pin No.	Name	I/O	Function
30	BATOFF	O	Battery line connection switch
31	I2CDTR	I/O	I2C DATA signal for FM TUNER (IC2047)
32	GND	-	GND
33	SCPU_TXD	O	SUB MPU TXD signal
34	GND	-	GND
35	SCPU_RXD	I	SUB MPU RXD signal
36	POSWO	O	Power switch output signal
37	/S_RST	O	Reset signal (SUB MPU)
38	AGCA/APC	O	Band A AGC signal & APC signal
39	40CS	O	40C switch signal
40	VBAT	I	Battery voltage detect signal
41	33SS	O	33S switch signal
42	VBUS	O	VBUS power supply
43	FREQ2	O	Frequency adjustment signal
44	VBUS	O	VBUS power supply
45	BPFB	O	Band B BPF adjustment signal
46	VBUS	O	VBUS power supply
47	33RAD	I	3.3V power supply
48	VBUS	O	VBUS power supply
49	+B1	I	+B power supply
50	VBUS	O	VBUS power supply
CN5 (to VOLUME ENCODER)			
1	GND	-	GND
2	Vol_O	O	Volume signal
3	Vol_I	I	Power supply for volume
4	ENC2	I	Encoder data 2
5	GND	-	GND
6	ENC1	I	Encoder data 1

2.3.2 MAIN UNIT (XC1-388K-01 , XC1-388E-01) (2/5) TX-RX

Pin No.	Name	I/O	Function
CN8 (to MW/SW)			
1	BFMS	O	Band B switch signal for power supply (76-108MHz)
2	FMOUT	I	FM TUNER RF signal
3	SWANT_S	O	SW bar antenna on/off switch signal
4	GND	-	GND
5	GND	-	GND
6	HFIN	O	Band B HF RF signal
7	MWANT_S	O	MW bar antenna on/off switch signal
8	GND	-	GND
9	GND	-	GND
10	BHFS	O	Band B switch signal for power supply (0.1-76MHz)
11	OBPFB	O	Band B BPF adjustment signal

Pin No.	Name	I/O	Function
12	GND	-	GND
13	GND	-	GND
14	HFOUT	I	Band B HF RF signal
15	OAGCB	O	Band B AGC signal
16	ATT_B	O	Band B ATT ON/OFF switch signal
17	GND	-	GND
18	GND	-	GND
19	47C	O	4.7V power supply
20	47C	O	4.7V power supply
CN9 (to CONTROL)			
1	+B	O	+B power supply
2	DET1	O	Power detect signal
3	+B	O	+B power supply
4	FTH	O	Thermistor voltage for Final Amp
5	MOD	I	Modulation signal (TCXO)
6	CURR	O	Final current detection voltage
7	40C	O	4.0V power supply
8	SQA	O	Band A squelch voltage
9	40C	O	4.0V power supply
10	BPFA	I	Band A BPF adjustment signal
11	RAINT	I	Interrupt signal for FM TUNER (IC2047)
12	AFA	O	Band A audio signal
13	47C	O	4.7V power supply
14	SMA	O	Band A RSSI voltage
15	AGCB	I	Band B AGC signal
16	LDA	O	Band A lock detect signal
17	IFB	O	Band B SSB/CW/AM IF signal
18	LDB	O	Band B lock detect signal
19	AFB_FM	O	Band B D-star/FM audio signal
20	VDCIN	O	VDCIN voltage for AD converter
21	SQB	O	Band B squelch voltage
22	BAT_DET	O	Battery detection signal
23	SMB	O	Band B RSSI voltage
24	GND	-	GND
25	I2CCK	I	I2C CLK signal for DC/DC DRV (IC108)
26	/EN_CLK_R	O	CLK power switch for FM TUNER (IC2047)
27	I2CDT	I/O	I2C DATA signal for DC/DC DRV (IC108)
28	BFMS	O	Band B switch signal for power supply (76-108MHz)
29	I2CCKR	O	I2C CLK signal for DC/DC DRV (IC108)
30	BATOFF	I	Battery line connection switch
31	I2CDTR	I/O	I2C DATA signal for FM TUNER (IC2047)
32	GND	-	GND
33	SCPU_TXD	I	SUB MPU TXD signal
34	GND	-	GND
35	SCPU_RXD	O	SUB MPU RXD signal
36	POSWO	I	Power switch output signal
37	/S_RST	I	Reset signal (SUB MPU)
38	AGCA/APC	I	Band A AGC signal & APC signal
39	40CS	I	40C switch signal
40	VBAT	O	Battery voltage detect signal
41	33SS	I	33S switch signal
42	VBUS	I	VBUS power supply
43	FREQ2	I	Frequency adjustment signal
44	VBUS	I	VBUS power supply
45	BPFB	I	Band B BPF adjustment signal
46	VBUS	I	VBUS power supply
47	33RAD	O	3.3V power supply
48	VBUS	I	VBUS power supply
49	+B1	O	+B power supply
50	VBUS	I	VBUS power supply

2.3.3 MAIN UNIT (XC1-388K-01 , XC1-388E-01) (3/5) MW/SW

Pin No.	Name	I/O	Function
CN11 (to TX-RX)			
1	47C	I	4.7V power supply
2	47C	I	4.7V power supply
3	GND	-	GND
4	GND	-	GND
5	ATT_B	I	Band B ATT ON/OFF switch signal
6	OAGCB	I	Band B AGC signal
7	HFOUT	O	Band B HF RF signal
8	GND	-	GND
9	GND	-	GND
10	OBPFB	I	Band B BPF adjustment signal
11	BHFS	I	Band B switch signal for power supply (0.1-76MHz)
12	GND	-	GND
13	GND	-	GND
14	MWANT_S	I	MW bar antenna on/off switch signal
15	HFIN	I	Band B HF RF signal
16	GND	-	GND
17	GND	-	GND
18	SWANT_S	I	SW bar antenna on/off switch signal
19	FMOUT	O	FM TUNER RF signal

Pin No.	Name	I/O	Function
20	BFMS	I	Band B switch signal for power supply (76-108MHz)
CN13 (to BARANT)			
1	SW	I	SW RF signal
2	SW	I	SW RF signal
3	GND	-	GND
4	GND	-	GND
5	MW	I	MW RF signal
6	MW	I	MW RF signal

2.3.4 MAIN UNIT (XC1-388K-01 , XC1-388E-01) (4/5) KEY

Pin No.	Name	I/O	Function
CN14 (to CONTROL)			
1	KEY_O4	I	Key matrix
2	KEY_O3	I	Key matrix
3	KEY_O2	I	Key matrix
4	KEY_O1	I	Key matrix
5	KEY_O0	I	Key matrix
6	KEY_I4	O	Key matrix
7	KEY_I3	O	Key matrix
8	KEY_I2	O	Key matrix
9	KEY_I1	O	Key matrix
10	KEY_I0	O	Key matrix
11	LAMP GND	-	LAMP GND
12	SP+	I	SP AF output
13	SP-	O	SP GND
14	LAMP GND	-	LAMP GND
15	NC	-	NC
16	LAMP B	I	LAMP Power supply

2.3.5 MAIN UNIT (XC1-388K-01 , XC1-388E-01) (5/5) BARANT

Pin No.	Name	I/O	Function
CN15 (to MW/SW)			
1	MW	I	MW RF signal
2	MW	I	MW RF signal
3	GND	-	GND
4	GND	-	GND
5	SW	I	SW RF signal
6	SW	I	SW RF signal

2.3.6 USB Type-C Connector J1

Pin No.	Name	I/O	Function	Rating and Condition
A1	GND	-	GND	GND
A2	TX1+	I	NC	-
A3	TX1-	I	NC	-
A4	VBUS	I	VBUS Input	Input voltage 4.4~5.5V
A5	CC1	I	Communication channel 1	Pull-down resistor 5.1kΩ±10% When CC1 and CC2 ≦ 0.61V, Type-C current USB default mode (500mA) When CC1 ≧ 0.70V, or CC2 ≧ 0.70V Type-C current 1.5A mode
A6	D+	I/O	USB D+	VIH>2.0V, VIL<0.8V VOH>2.4V,VOL<0.4V Full speed (12Mbps)
A7	D-	I/O	USB D-	VIH>2.0V, VIL<0.8V VOH>2.4V,VOL<0.4V Full speed (12Mbps)
A8	SBU1	I/O	NC	-
A9	VBUS	I	VBUS Input	Input voltage 4.4~5.5V
A10	RX2-	O	NC	-
A11	RX2+	O	NC	-
A12	GND	-	GND	GND
B1	GND	-	GND	GND
B2	TX2+	I	NC	-
B3	TX2-	I	NC	-
B4	VBUS	I	VBUS Input	Input voltage 4.4~5.5V

Pin No.	Name	I/O	Function	Rating and Condition
B5	CC2	I	Communication channel 2	Pull-down resistor 5.1kΩ±10% When CC1 and CC2 ≦ 0.61V, Type-C current USB default mode (500mA) When CC1 ≧ 0.70V, or CC2 ≧ 0.70V Type-C current 1.5A mode
B6	D+	I/O	USB D+	VIH>2.0V, VIL<0.8V VOH>2.4V,VOL<0.4V Full speed (12Mbps)
B7	D-	I/O	USB D-	VIH>2.0V, VIL<0.8V VOH>2.4V,VOL<0.4V Full speed (12Mbps)
B8	SBU2	I/O	NC	-
B9	VBUS	I	VBUS Input	Input voltage 4.4~5.5V
B10	RX1-	O	NC	-
B11	RX1+	O	NC	-
B12	GND	-	GND	GND
25	GND1	-	GND	GND
26	GND2	-	GND	GND
27	GND3	-	GND	GND
28	GND4	-	GND	GND

2.3.7 microSD Slot J3

Pin No.	Name	I/O	Function	Rating and Condition
1	DAT2	I/O	Data line is bidirectional signal. Host and microSD drivers operate in push pull mode.	VIH:2.0 to 3.6V VIL:-0.3 to 0.8V VOH(Io=4mA):2.4 to 3.6V VOL(Io=4mA):max 0.4V
2	DAT3	I/O	Data line is bidirectional signal. Host and microSD drivers operate in push pull mode.	VIH:2.0 to 3.6V VIL:-0.3 to 0.8V VOH(Io=4mA):2.4 to 3.6V VOL(Io=4mA):max 0.4V
3	CMD	I/O	Command is bidirectional signal. Host and microSD drivers operate in push pull mode.	VIH:2.0 to 3.6V VIL:-0.3 to 0.8V VOH(Io=4mA):2.4 to 3.6V VOL(Io=4mA):max 0.4V
4	VDD	I	3.3V power supply output.	Output Voltage:3.267 to 3.333V (typ3.3V) Maximum Current max 0.2A
5	CLK	O	Clock is a host to microSD signal. CLK operates in push pull mode.	VOH(Io=4mA):2.4 to 3.6V VOL(Io=4mA):max0.4V Clock frequency (High Speed MODE) MAX 50MHz
6	VSS	-	GND	-
7	DAT0	I/O	Data line is bidirectional signal. Host and microSD drivers operate in push pull mode.	VIH:2.0 to 3.6V VIL:-0.3 to 0.8V VOH(Io=4mA):2.4 to 3.6V VOL(Io=4mA):max 0.4V
8	DAT1	I/O	Data line is bidirectional signal. Host and microSD drivers operate in push pull mode.	VIH:2.0 to 3.6V VIL:-0.3 to 0.8V VOH(Io=4mA):2.4 to 3.6V VOL(Io=4mA):max 0.4V
9	GND1	-	GND	GND
10	GND2	-	GND	GND
11	GND3	-	GND	GND
12	GND4	-	GND	GND
13	GND5	-	GND	GND
14	GND6	-	GND	GND
15	GND7	-	GND	GMD

Pin No.	Name	I/O	Function	Rating and Condition
16	DSW2	I	Usually shorted to GND. Open when microSD is inserted. Short to GND when microSD is not inserted.	VIH:2.0~3.6V VIL:-0.3~0.8V
17	DSW1	-	Connect to GND	GND

2.3.8 External microphone jack (2-pin jack) J2

Pin No.	Name	I/O	Function	Rating and Condition
6	PTT	I	PTT	VIH:2.0 to 3.6V Standby VIL:-0.3 to 0.4V Transmit
7	MIC	I	External Microphone input	2kΩ terminated
10	33M	O	3.3V output	VOH(Io=7.5mA max):2.4 to 3.6V

2.3.9 External speaker jack (2-pin jack) J2

Pin No.	Name	I/O	Function	Rating and Condition
1	SPG	I	SP GND	GND
2	REM	I	Remote key Detection	PF1:3.9kΩ ± 5%, PF2:10kΩ ± 5%, PF3:27kΩ ± 5%, Lock:less than 10Ω
5	SP	O	SP AF output	Output impedance 8Ω or higher. Ex)SMC-34's speaker impedance is 15.5Ω Rated input 0.5W, maximum input 1.0W.

2.3.10 DC Jack J7

Pin No.	Pin Name	I/O	Function	Rating and Condition
1	DC_IN (+)	I	Voltage Supply	Voltage:11.0-15.9V
2	GND	I	GND	GND

SECTION 3
DISASSEMBLY

3.1 How to Remove the Front Panel ASSY

(1) Remove the cap <1>.
(2) Pull out the two knobs <2>.
(3) Remove the two screws <3> on the Front Panel ASSY.
(4) Remove the nut <4> of the antenna receptacle.
(5) Remove the nut <5> of the volume/encoder.
(6) Remove the panel <6>.
(7) After removing the flat cable <7> for the KEY PCB (MAIN UNIT4/5) from the CONTROL PCB (MAIN UNIT 1/5), remove the Front Panel ASSY from the chassis.

3.2 How to Remove the PCB

3.2.1 CONTROL PCB (MAIN UNIT 1/5)

(1) Remove the flexible connector of the LCD <8>. Remove two tabs <9> and two screws <10> on the LCD mounting bracket. Then remove the LCD.
(2) Disconnect the GPS coaxial cable <11> from the connector.

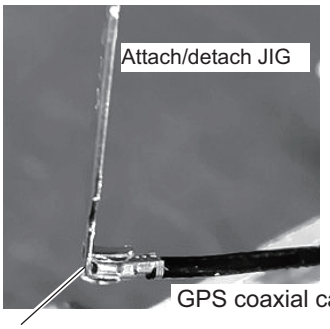
Note:
A connector attachment/detachment jig for a GPS cable is used. * 1

(3) Remove the 3 screws <12> on the PCB.
(4) Lift the CONTROL PCB, disconnect the cord assembly (50-pin) <13> and volume/encoder FPC <14> from the respective connectors.
(5) Remove the CONTROL PCB from the chassis.

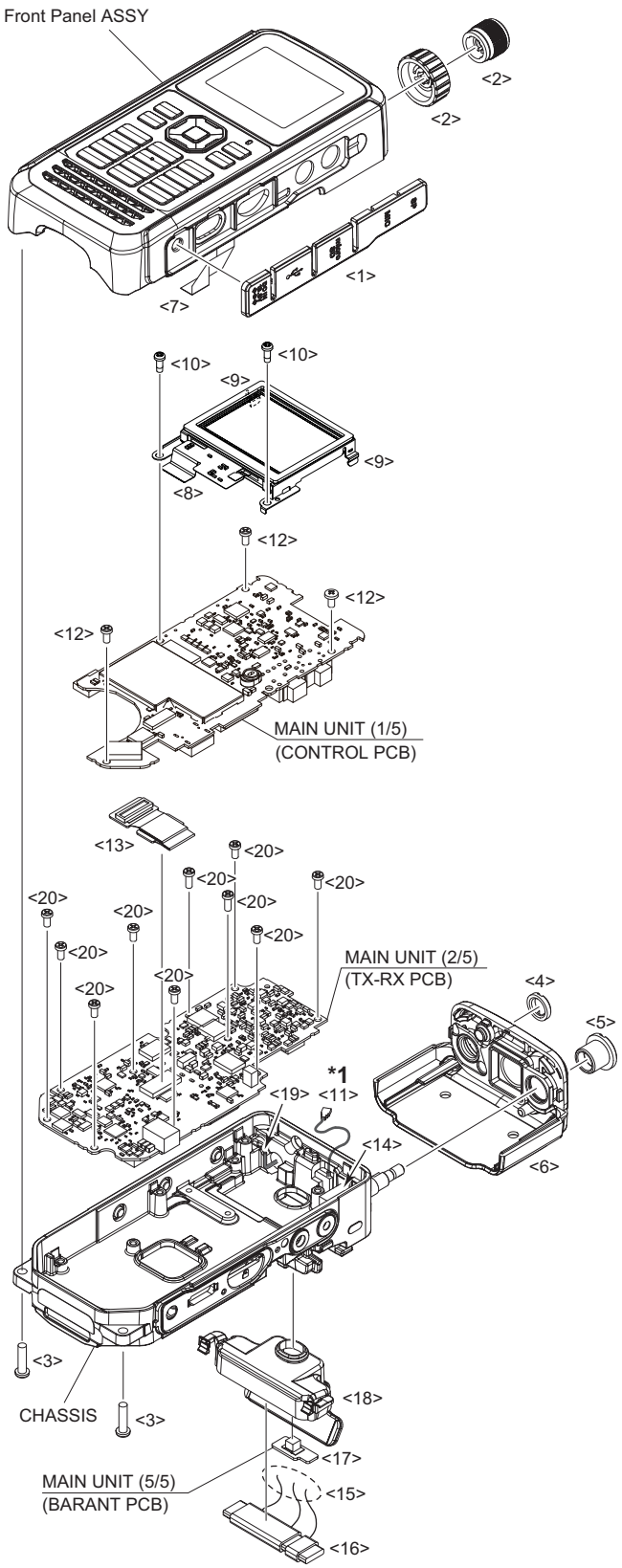
3.2.2 TX-RX PCB (MAIN UNIT 2/5)

(1) Remove the bar BARANT PCB (MAIN UNIT 5/5) solder <15> inside the rubber seal <18>, and remove the bar antenna <16> and BARANT PCB <17>.
(2) Remove the two tabs on the left and right sides of the rubber seal <18> from the chassis, then disassemble it.
(3) Remove the solder on the antenna terminal <19>.
(4) Remove the 10 screws <20> on the PCB.
(5) Lift and remove the TX-RX PCB.

*1 Attach/detach JIG for GPS coaxial cable
Part No:W3F-0679-00



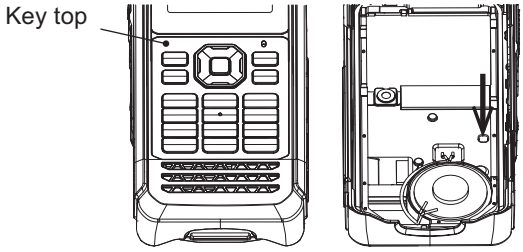
When using the JIG, attach it into the tip of the GPS coaxial cable plug.



3.3 Precautions for Disassembly

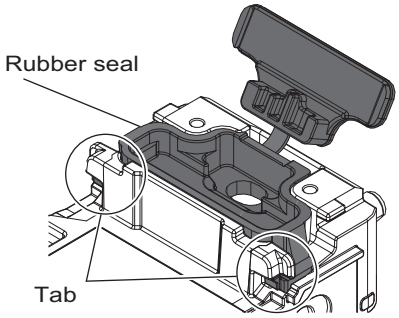
3.3.1 How to Remove Key Tops

(1) The key top is pasted to the surface of the Front Panel ASSY with double-sided tape. Push the key top from the inner side hole of the Front Panel ASSY at the time of removing or replacing the key top.



3.3.2 How to Remove the Rubber Seal

When removing the rubber seal, first remove the two tabs on the left and right sides of the rubber seal from the slits in the chassis.



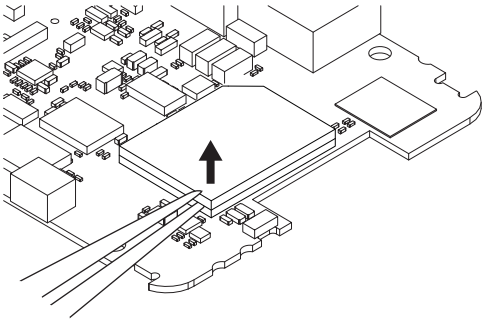
3.3.3 How to Remove the Shielding Cover

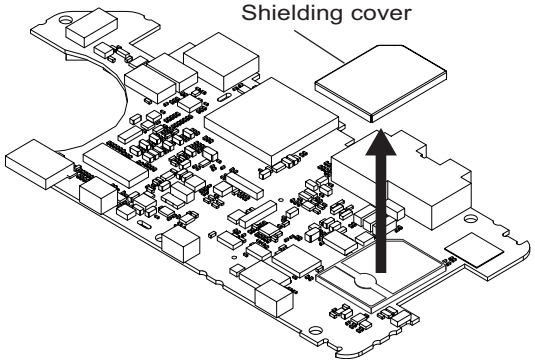
(1) Using tweezers, lift the edge of the shielding cover slightly.

(2) Repeat step (1), changing the lifting position to remove the shielding cover.

Note:

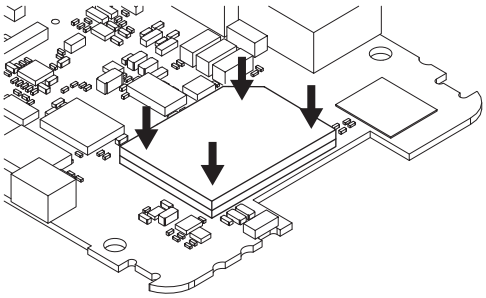
Once the shielding cover is removed, it cannot be used again.





Note:

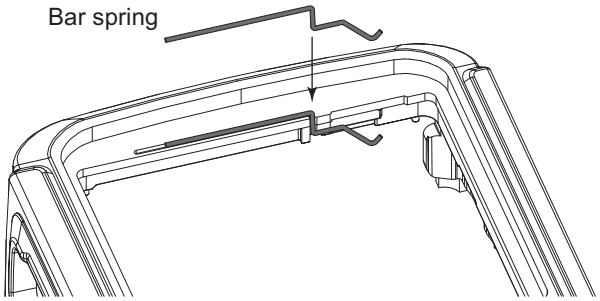
When attaching a new shielding cover to the PCB, be careful not to deform it. After attaching, push the shielding cover top surface (other than the center) evenly.



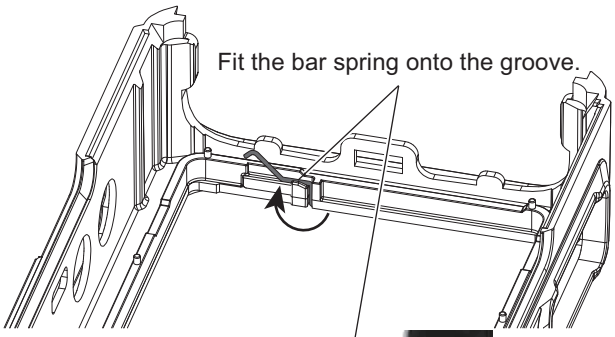
3.4 Precautions for Reassembly

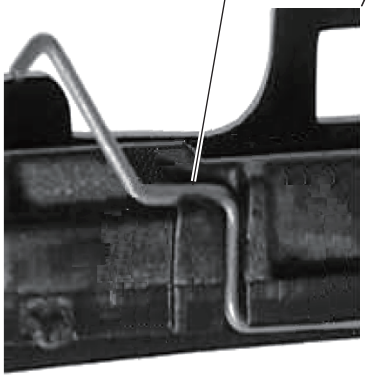
3.4.1 Mounting of the Bar Spring (Bluetooth Antenna)

(1) Mount the bar spring onto the front-side groove of the Front Panel ASSY with the absence of the front glass, the state of which will occur at the time of replacing the front case, for example. (Deformed bar spring cannot be used.)



(2) Turn the bar spring to the rear side of the Front Panel ASSY, and mount the bar spring onto the rear groove of the Front Panel ASSY.

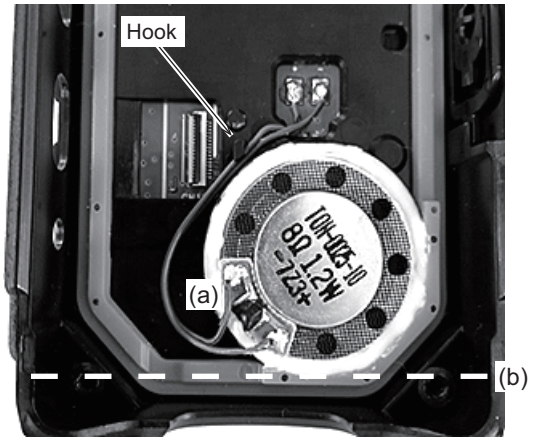




3.4.2 Confirmation of speaker cord soldering and forming (When assembling the Front Panel ASSY)

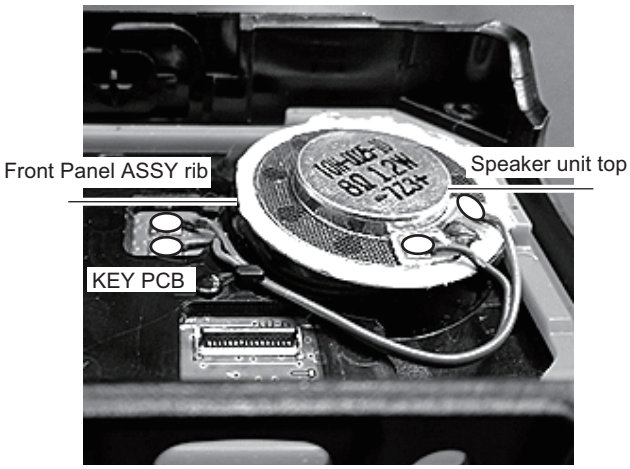
(1) Confirm the speaker cord part (a) is attached from bottom side to top side and soldered.

(2) The speaker cord should be formed inside the dotted line (b) through the slit of the hook as shown.



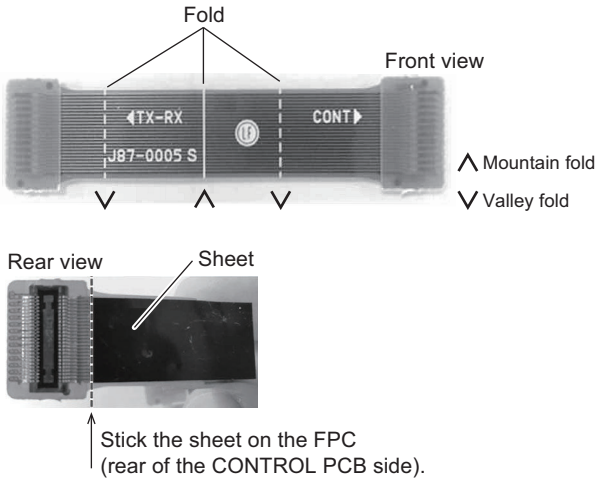
(a):Soldering direction of the speaker cord

(3) Confirm the solder height does not exceed the height of the speaker unit top (speaker side)/Front Panel ASSY rib (KEY PCB side).



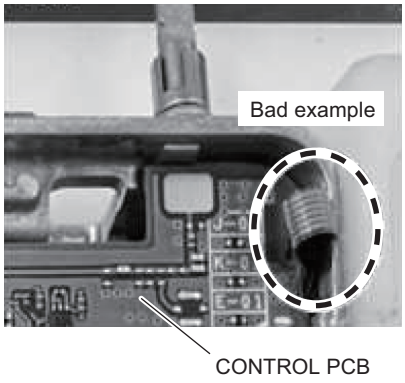
3.4.3 Sticking position of the Sheet

Fold the FPC connecting the CONTROL PCB and TX-RX PCB, then stick the sheet on the FPC as shown.



3.4.4 Precaution when attaching the CONTROL PCB into the chassis

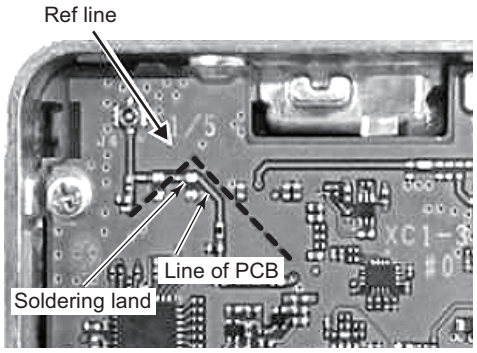
The volume/encoder FPC must be formed at the back side of the CONTROL PCB.

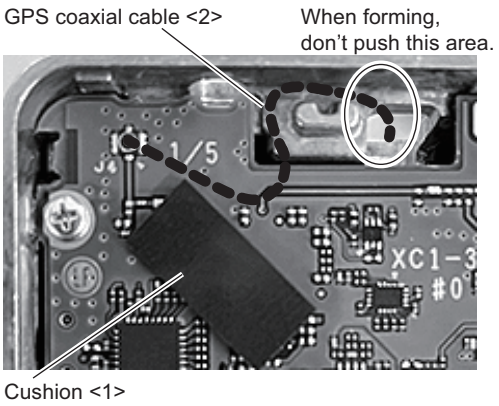


3.4.5 Forming of GPS Coaxial Cable

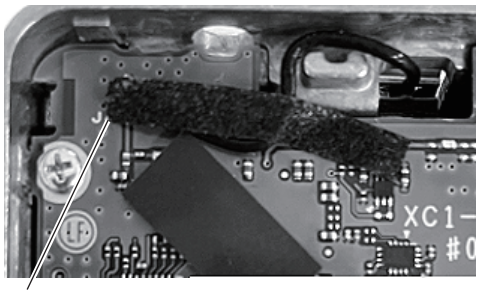
(1) Stick the cushion <1> to cover the soldering land and line of PCB fully as shown.

(2) Insert the GPS coaxial cable <2> into the connector and form it.



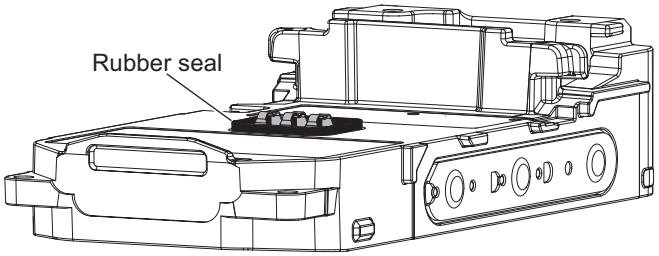


(3) Stick the fibrous sheet <3> to the GPS coaxial cable and fix it to the PCB.

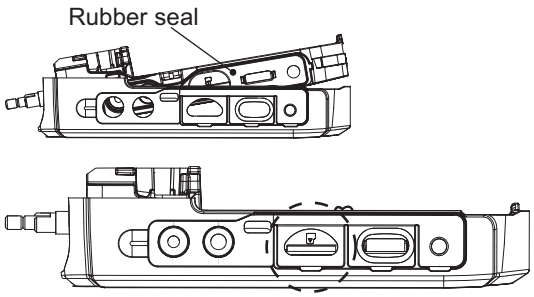


3.4.6 Check the rubber seals (waterproof parts) on the battery terminal section and microSD slot section

(1) After assembling the TX-RX PCB (MAIN UNIT 2/5) into the chassis, check that the rubber seal of the battery terminal section is firmly inserted.



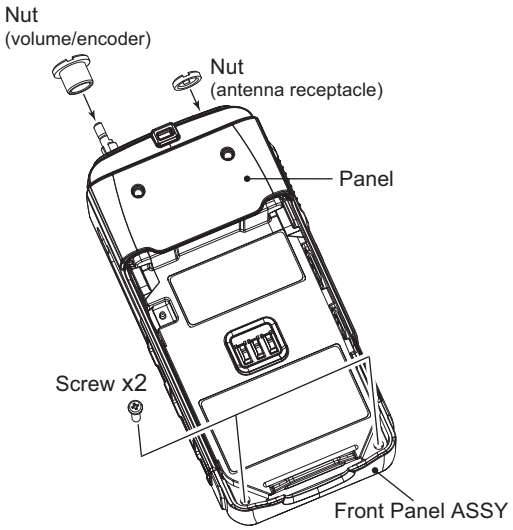
(2) After assembling the Front Panel ASSY into the chassis, check that the rubber seal of the microSD slot section is firmly inserted.



3.4.7 Attaching the nuts for panel and the screws for Front Panel ASSY

(1) After assembling the Front Panel ASSY to the chassis, attach the panel to the chassis. Attach the antenna receptacle nut and volume/encoder nut.

(2) Attach the two screws to fix the Front Panel ASSY.



3.4.8 Assembly Information (Non-reusable parts)

When "Main Parts" is changed (ordered), "Non-reusable parts" should also be changed (ordered) together.
Especially the parts with adhesive such as Cushion and Sheet etc. cannot be reused.
Use new ones regardless of whether they have been used in locations that affect performance of the products.

Main Parts		Non-reusable parts		
Part Name	**Part Number**	**Part Name**	**Part Number**	**Remarks**
FRONT PANEL ASSY (SERVICE)	XC2-068J-00S	KEY TOP	K2K-0666-10	
		SHEET	G1B-0515-00	KEY TOP
		FRONT GLASS	B1A-0135-00	
		SHEET	G1B-0511-00	KEY PCB
		FIBROUS SHEET	G1A-0057-00	MIC
		CUSHION	G1D-0135-00	
MOUNTING (LCD)	J2B-0201-10	CUSHION	G1D-0542-00	
		SHEET	G1B-0217-10	
V RESISTOR ETC	R3K-0001-20	FPC	J82-0114-25	
		SHEET	G1B-0179-00	
MAIN UNIT 1/5 (CONTROL)	XCA-099K-01S (K Type) XCA-099E-01S (E/T Type)	FIBROUS SHEET	G1A-0046-00	
		CUSHION	G1D-0231-00	
MAIN UNIT 2/5 (TX-RX)	XCA-099K-01S (K Type) XCA-099E-01S (E/T Type)	TERMINAL BLOCK	E7C-0040-00	
		FIBROUS SHEET	G10-1348-04	
MAIN UNIT 3/5 (MW/SW)	XCA-099K-01S (K Type) XCA-099E-01S (E/T Type)	CUSHION	G1D-0539-00	QTY: 2
		CUSHION	G1D-0132-00	
MAIN UNIT 4/5 (KEY)	XCA-099K-01S (K Type) XCA-099E-01S (E/T Type)	SHEET	G1B-0511-00	

3.4.9 Replacing Service PCB

The following part does not belong to the Control PCB for service. Please use the part which has been attached to the printed circuit board. After the replacement of the PCB (CONTROL or TX-RX), be sure to update the firmware to the latest version, and then be sure to adjust the transceiver over again.

Service PCB	Part Name	Part Number
CONTROL PCB (MAIN UNIT 1/5)	LITHIUM CELL	W09-0971-05

SECTION 4
ADJUSTMENT

4.1 TH-D75A (K) type

4.1.1 Updating the Firmware

The firmware can be updated using Firmware Updating Program (s).
Update the firmware according to the procedure displayed in updating program.
Download the latest updating program from the following URL:
https://www.kenwood.com/i/products/info/amateur/software_download.html

* The URL may change without notice.

4.1.2 Required Test Equipment

(1) Stabilized Power Supply
- a) The supply voltage can be changed between 3V and 16V and the current is 3A or more.
- b) The standard voltage is 13.8V.

(2) DC Ammeter (DC. A)
- a) Class 1 ammeter (17 ranges and other features)
- b) The full scale can be switched between 300mA and 3A.
- c) A cable with low internal loss must be used.

(3) Frequency Counter (f. counter)
- a) Frequencies of up to 1GHz or so can be measured.
- b) The sensitivity can be changed to 250MHz or below and measurements are highly stable and accurate (about 0.2ppm).

(4) Power Meter (terminal type)
- a) Measurable frequency: Up to 500MHz
- b) Impedance: 50Ω, unbalanced
- c) Measuring range: Full scale of 10W
- d) The specified special connection cable must be used.

(5) RF Voltmeter (RF VM)
- a) Measurable frequency: Up to 500MHz or so

(6) Linear Detector
- a) Measurable frequency: Up to 500MHz
- b) Characteristic is flat and CN is 60dB or more.

(7) Digital Voltmeter (DVM)
- a) Voltage range: FS = 18V or so
- b) Input resistance: 1MΩ or more

(8) Oscilloscope
- a) Measuring range: DC to 30MHz
- b) Provides highly accurate measurements for 5 to 25MHz

(9) AF Voltmeter (AF VM)
- a) Measurable frequency: 50Hz to 1MHz
- b) Maximum sensitivity: 1mV or more

(10) Spectrum Analyzer
- a) Measuring range: DC to 1GHz or more

(11) Standard Signal Generator (SSG)
- a) Maximum frequency: 500MHz or more
- b) Output: -133dBm (0.05μV) to -13dBm (50mV)
- c) Output impedance: 50Ω

(12) Tracking Generator
- a) Center frequency: 50kHz to 200MHz
- b) Frequency deviation: ±35MHz
- c) Output voltage: 100mV or more

(13) Dummy Load
- a) 8Ω, 3W or more

(14) Audio Analyzer

4.1.3 Service Jig

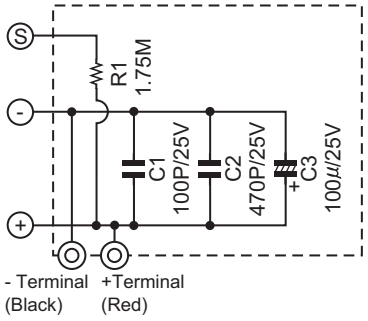
■Battery Jig (W3F-0208-00)

Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or both.

Note:

When using the battery jig, you must measure the voltage at the terminals of the battery jig. Otherwise, a slight voltage drop may occur within the power cable, between the power supply and the battery jig, especially while the transceiver transmits.

Schematic diagram



■Connection cable

Connection cable consists of two pieces of CORD ASSY (X42-3510-10), to extend its cable length double for connection between two PCBs.

For repair and adjustment, use this connection cable to connect a CONTROL PCB (MAIN UNIT 1/5) and a TX-RX PCB (MAIN UNIT 2/5) by inserting the connection
cable to connectors on these PCBs.

Note:

If CONTROL PCB (MAIN UNIT 1/5) and TX-RX PCB (MAIN UNIT 2/5) are disassembled from the main chassis, there may possibly cause short-circuit, electrical shock or the high-frequency signal interference.

To verify the transmit state, be sure to keep CONTROL PCB (MAIN UNIT 1/5) and TX-RX PCB (MAIN UNIT 2/5) assembled in a chassis.

Besides, transmission without a heat sink attached may possibly cause the device to be damaged.

Be sure to verify the transmit performance with LOW/EL transmit power transmitted in a short amount of time.

■Connection cable

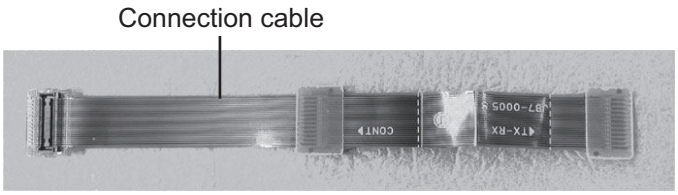


Fig.1

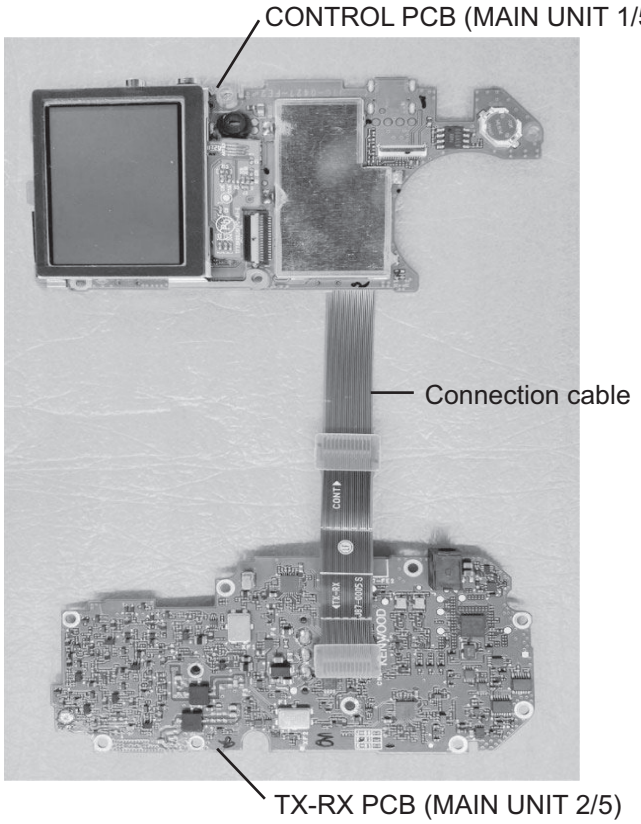


Fig.2

■How to enter adjustment mode using 3-pin plug (⌀2.5)

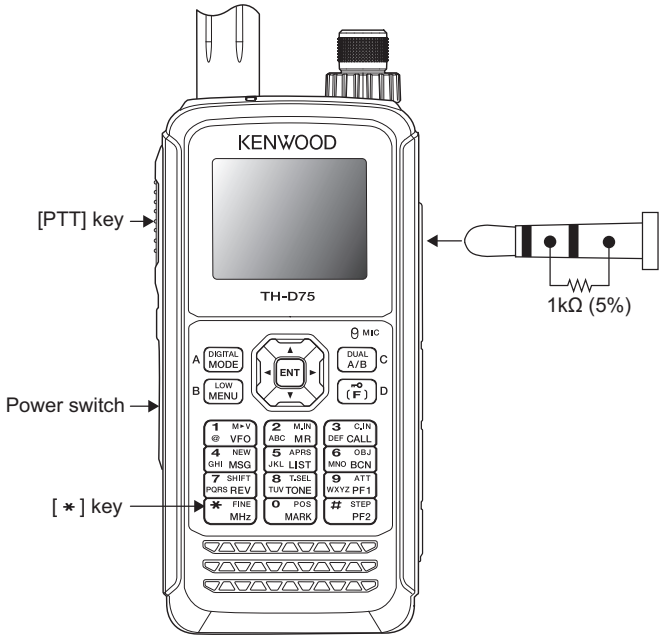
Description

It is possible to enter the adjustment mode by installing a resistor between the REM and GND terminals of the speaker jack.

Connect a resistor (1kΩ) between the two pins of the 3-pin plug as shown in the figure.

Operation method

Insert the modified 3-pin plug into the speaker jack of the transceiver. Then, enter the adjustment mode by pressing and holding the power switch while pressing the [＊] and [PTT] keys on the transceiver and turning the power ON.



4.1.4 Adjustment Mode

■Outline

(1) Set the transceiver to adjustment mode and change each setting data item.

(2) This mode is used when the CONTROL PCB (MAIN UNIT 1/5) or TX-RX PCB (MAIN UNIT 2/5) is replaced at a service center or at the time of making transceiver re-adjustments.

Note:

All adjustment data is stored in the flash memory (CONTROL PCB (MAIN UNIT 1/5) IC2008).

■Operation procedures in adjustment mode

There are two ways to enter the adjustment mode.

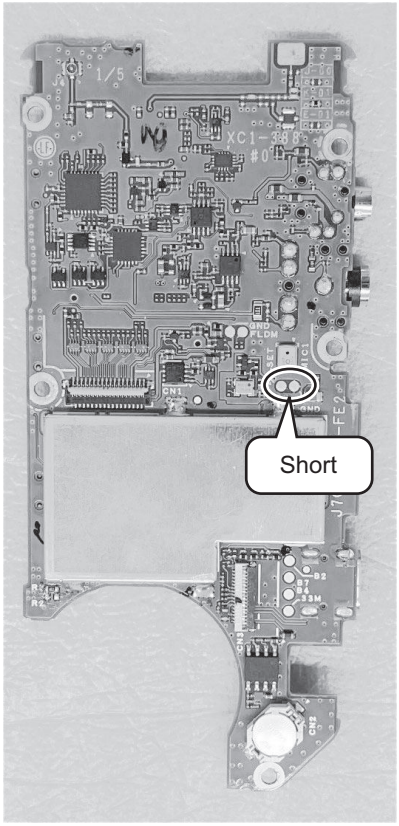
(1) How to enter adjustment mode by shorting two lands

a) Turn ON the transceiver.

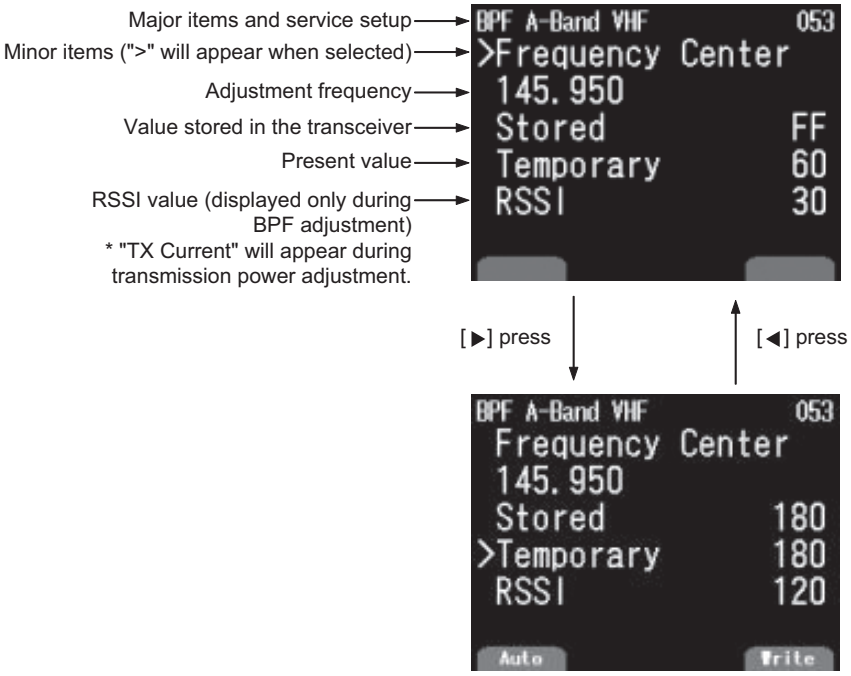
b) Short-circuit two lands (SET and GND) on the component side of the CONTROL PCB (MAIN UNIT 1/5) using tweezers, etc. to set the transceiver to adjustment mode.

(2) How to enter adjustment mode using the speaker jack without disassembling the transceiver

Refer to the contents of "■How to enter the adjustment mode using 3-pin plug".



■**LCD display in the adjustment mode**



■**Key operation in the adjustment mode**

Key name	Function	
	“>” appears for minor items (Adjustment item change mode).	">" appears for "Temporary" (Adjustment value change/Setting mode)
Encoder, [▲], [▼]	Adjustment item change	Adjustment value change
[◀]	-	Goes to adjustment item change mode
[▶], [ENT], [Write] ([A/B])	Set to adjustment value change/adjustment mode, and “>” moves to "Temporary."	Adjustment value change
[Auto] ([MODE])	-	Start of automatic adjustment (BPF calibration adjustment)*1

Note:

- Transmission power adjustments are possible with the [▶], [ENT] or [Write] key only during transmission.
- The backlight will not be lit while in adjustment mode so as to prevent the adverse influence of the backlight current on the adjustment.

***1**

(1) The BPF automatic adjustment will start when the [Auto] key is pressed.
The adjustment value will be set when the automatic adjustment is finished successfully.

“Adjust NG” will appear if the automatic adjustment fails.

(2) Calibration is adjusted with the [Auto] key.

■**Adjustment items and Display**

TH-D75A (K) type					
Adjustment items	**Display**				
	Adjustment item number	**Major item**	**Minor item**	**Frequency adjustment (MHz)**	**6th line displayed**
A. Battery Voltage (7.4 V)	0	COMMON	Battery	439.900	
B. TX Frequency	1	Frequency1	B/S Off	439.900	
	2		B/S On-		
	3		B/S On+		
	4	Frequency2 COARSE	B/S Off	439.900	
	5		B/S On-		
	6		B/S On+		
	7	Frequency2 FINE	B/S Off	439.900	
	8		B/S On-		
	9		B/S On+		
C. TX Power	10	TX Hi Power VHF	Frequency Center	146.100	TX Current
	11		Frequency Low	144.100	TX Current
	12		Frequency High	147.900	TX Current
	13	TX Mid Power VHF	Frequency Center	146.100	TX Current
	14		Frequency Low	144.100	TX Current
	15		Frequency High	147.900	TX Current
	16	TX Low Power VHF	Frequency Center	146.100	TX Current
	17		Frequency Low	144.100	TX Current
	18		Frequency High	147.900	TX Current
	19	TX EL Power VHF	Frequency Center	146.100	TX Current
	20		Frequency Low	144.100	TX Current
	21		Frequency High	147.900	TX Current
	22	TX Hi Power 220	Frequency Center	223.600	TX Current
	23		Frequency Low	222.100	TX Current
	24		Frequency High	224.900	TX Current
	25	TX Mid Power 220	Frequency Center	223.600	TX Current
	26		Frequency Low	222.100	TX Current
	27		Frequency High	224.900	TX Current
	28	TX Low Power 220	Frequency Center	223.600	TX Current
	29		Frequency Low	222.100	TX Current
	30		Frequency High	224.900	TX Current
	31	TX EL Power 220	Frequency Center	223.600	TX Current
	32		Frequency Low	222.100	TX Current
	33		Frequency High	224.900	TX Current
	34	TX Hi Power UHF	Frequency Center	440.100	TX Current
	35		Frequency Low	430.100	TX Current
	36		Frequency High	449.900	TX Current
	37	TX Mid Power UHF	Frequency Center	440.100	TX Current
	38		Frequency Low	430.100	TX Current
	39		Frequency High	449.900	TX Current

TH-D75A (K) type					
Adjustment items	Display				
	Adjustment item number	Major item	Minor item	Frequency adjustment (MHz)	6th line displayed
C. TX Power	40	TX Low Power UHF	Frequency Center	440.100	TX Current
	41		Frequency Low	430.100	TX Current
	42		Frequency High	449.900	TX Current
	43	TX EL Power UHF	Frequency Center	440.100	TX Current
	44		Frequency Low	430.100	TX Current
	45		Frequency High	449.900	TX Current
D. MOD Gain	46	MOD Gain VHF	Frequency Low	144.100	
	47	MOD Gain 220	Frequency Center	223.600	
	48	MOD Gain UHF	Frequency Low	430.100	
E. MAX Deviation	49	MAX Deviation VHF	Frequency Low	144.100	
	50	MAX Deviation 220	Frequency Center	223.600	
	51	MAX Deviation UHF	Frequency Low	430.100	
F. BPF	52	BPF A-Band VHF	Frequency Low	136.050	RSSI
	53		Frequency Center	145.950	RSSI
	54		Frequency High	173.950	RSSI
	55	BPF A-Band 220	Frequency Low	216.050	RSSI
	56		Frequency Center	224.050	RSSI
	58	BPF A-Band UHF	Frequency Low	410.050	RSSI
	59		Frequency Center	439.950	RSSI
	60		Frequency High	469.950	RSSI
	64	BPF B-Band VHF	Frequency Low	118.050	RSSI
	65		Frequency Center	145.950	RSSI
	66		Frequency High	173.950	RSSI
	67	BPF B-Band 220	Frequency Low	205.050	RSSI
	68		Frequency Center	224.050	RSSI
	71	BPF B-Band UHF	Frequency LowD	379.950	RSSI
	72		Frequency Center	439.950	RSSI
	73		Frequency HighD	469.950	RSSI
G. IF Filter Calibration	75	Calibration	+3kHz	145.950	
	76		-3kHz		
H. SQL/S-meter	78	SQL A-Band VHF	Level1	145.950	
	80	SM A-Band VHF	S-1	145.950	
	81		S-FULL		
	82	SQL A-Band 220	Level1	224.050	
	84	SM A-Band 220	S-1	224.050	
	85		S-FULL		
	86	SQL A-Band UHF	Level1	439.950	
	88	SM A-Band UHF	S-1	439.950	
	89		S-FULL		
	90	SQL B-Band VHF	Level1	145.950	
	92	SM B-Band VHF	S-1	145.950	
	93		S-FULL		
	94	SQL B-Band 220	Level1	224.050	

TH-D75A (K) type					
Adjustment items	Display				
	Adjustment item number	Major item	Minor item	Frequency adjustment (MHz)	6th line displayed
H. SQL/S-meter	96	SM B-Band 220	S-1	224.050	
	97		S-FULL		
	98	SQL B-Band UHF	Level1	439.950	
	100	SM B-Band UHF	S-1	439.950	
	101		S-FULL		
	102	SQL B-Band 50	Level1	51.100	
	104	SM B-Band 50	S-1	51.100	
	105		S-FULL		

4.1.5 Common Section

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1.Battery Voltage	Goes to adjustment mode. See "4.1.4 Adjustment Mode". 1) Battery terminal: 7.4V	DVM		Battery terminal			[▸] or [Write]	**Note:** The correct transmission power will not be output from the transceiver in user mode unless the battery voltage is adjusted correctly.

4.1.6 Transmitter Section: Adjustment Mode Setting Items

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. TX Frequency	Battery terminal:7.4V/3.0A 1) Frequency1 B/S Off Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±50Hz
	2) Frequency1 B/S On- Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±50Hz
	3) Frequency1 B/S On+ Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±50Hz
	4) Frequency2 COARSE B/S Off Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±150Hz **Note:** Before adjusting this item, write 128 to "Frequency2 FINE B/S Off".
	5) Frequency2 COARSE B/S On- Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±150Hz **Note:** Before adjusting this item, write 128 to "Frequency2 FINE B/S On-".

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Frequency	6) Frequency2 COARSE B/S On+ Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±150Hz **Note:** Before adjusting this item, write 128 to "Frequency2 FINE B/S On+".
	7) Frequency2 FINE B/S Off Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±50Hz **Note:** Before adjusting this item, adjust "Frequency2 COARSE B/S Off".
	8) Frequency2 FINE B/S On- Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±50Hz **Note:** Before adjusting this item, adjust "Frequency2 COARSE B/S On-".
	9) Frequency2 FINE B/S On+ Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±50Hz **Note:** Before adjusting this item, adjust "Frequency2 COARSE B/S On+".
2. TX Power	Battery terminal:7.4V/3.0A 1) Power:Hi Frequency:146.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	2) Power:Hi Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	3) Power:Hi Frequency:147.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	4) Power:Mid Frequency:146.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	5) Power:Mid Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	6) Power:Mid Frequency:147.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	7) Power:Low Frequency:146.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
2. Power	8) Power:Low Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	9) Power:Low Frequency:147.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	10) Power:EL Frequency:146.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	11) Power:EL Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	12) Power:EL Frequency:147.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	13) Power:Hi Frequency:223.600MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.8W ±0.1W 2.2A or less
	14) Power:Hi Frequency:222.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.8W ±0.1W 2.2A or less
	15) Power:Hi Frequency:224.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.8W ±0.1W 2.2A or less
	16) Power:Mid Frequency:223.600MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	17) Power:Mid Frequency:222.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	18) Power:Mid Frequency:224.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	19) Power:Low Frequency:223.600MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	20) Power:Low Frequency:222.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	21) Power:Low Frequency:224.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	22) Power:EL Frequency:223.600MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	23) Power:EL Frequency:222.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	24) Power:EL Frequency:224.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
2. Power	25) Power:Hi Frequency:440.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	26) Power:Hi Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	27) Power:Hi Frequency:449.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	28) Power:Mid Frequency:440.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.2W 1.55A or less
	29) Power:Mid Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.2W 1.55A or less
	30) Power:Mid Frequency:449.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.2W 1.55A or less
	31) Power:Low Frequency:440.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	32) Power:Low Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	33) Power:Low Frequency:449.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	34) Power:EL Frequency:440.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	35) Power:EL Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	36) Power:EL Frequency:449.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
3. MOD Gain	Battery terminal: 7.4V/3.0A 1) MOD Gain VHF Frequency: 144.100MHz Linear detector FM+ LPF: 3kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 232. Then check that the deviation is 2.4kHz±75Hz.
	2) MOD Gain 220 Frequency: 223.600MHz Linear detector FM+ LPF: 3kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 232. Then check that the deviation is 2.4kHz±75Hz.

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. MOD Gain	3) MOD Gain UHF Frequency: 430.100MHz Linear detector FM+ LPF: 3kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 232. Then check that the deviation is 2.4kHz±75Hz.
4. Max Deviation	Battery terminal:7.4V/3.0A 1) Max Deviation VHF Frequency: 144.100MHz Linear detector FM+ LPF: 15kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 115. Then check that the deviation is 4.15kHz±100Hz.
	2) Max Deviation 220 Frequency: 223.600MHz Linear detector FM+ LPF: 15kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 115. Then check that the deviation is 4.15kHz±100Hz.
	3) Max Deviation UHF Frequency: 430.100MHz Linear detector FM+ LPF: 15kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 115. Then check that the deviation is 4.15kHz±100Hz.

4.1.7 Transmitter Section: User Mode Confirmation Items

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. TX Frequency	Battery terminal:7.4V/3.0A 1) Frequency: 439.900MHz Transmission	f. counter		ANT			Check	439.900MH ±400Hz
2. TX Power	Battery terminal:7.4V/3.0A 1) Power: Hi Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	4.85W ±0.3W 2.2A or less
	2) Power: Hi Frequency: 147.900MHz Transmission	Power meter Ammeter		ANT			Check	4.85W ±0.3W 2.2A or less
	3) Power: Mid Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	4) Power: Mid Frequency: 147.900MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	5) Power: Low Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	6) Power: Low Frequency: 147.900MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	7) Power: EL Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	8) Power: EL Frequency: 147.900MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	9) Power: Hi Frequency: 222.100MHz Transmission	Power meter Ammeter		ANT			Check	4.8W ±0.3W 2.2A or less
	10) Power: Hi Frequency: 224.900MHz Transmission	Power meter Ammeter		ANT			Check	4.8W ±0.3W 2.2A or less
	11) Power: Mid Frequency: 222.100MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	12) Power: Mid Frequency: 224.900MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	13) Power: Low Frequency: 222.100MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	14) Power: Low Frequency: 224.900MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	15) Power: EL Frequency: 222.100MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	16) Power: EL Frequency: 224.900MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
2. TX Power	17) Power: Hi Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	4.8W ±0.3W 2.2A or less
	18) Power: Hi Frequency: 449.900MHz Transmission	Power meter Ammeter		ANT			Check	4.8W ±0.3W 2.2A or less
	19) Power: Mid Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	20) Power: Mid Frequency: 449.900MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	21) Power: Low Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	22) Power: Low Frequency: 449.900MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	23) Power: EL Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	24) Power: EL Frequency: 449.900MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
3.MIC sensitivity	1) Power: Low Frequency: 146.100MHz Linear detector FM+ LPF:15kHz HPF:OFF De-emphasis: OFF Audio analyzer AG:1kHz/8mV Transmission	Linear detector Oscilloscope Audio analyzer		ANT			Check	2.4~3.9kHz
	2) Power: Low Frequency: 223.600MHz Linear detector FM+ LPF:15kHz HPF:OFF De-emphasis: OFF Audio analyzer AG:1kHz/8mV Transmission	Linear detector Oscilloscope Audio analyzer		ANT			Check	2.4~3.9kHz
	3) Power: Low Frequency: 440.100MHz Linear detector FM+ LPF:15kHz HPF:OFF De-emphasis: OFF Audio analyzer AG:1kHz/8mV Transmission	Linear detector Oscilloscope Audio analyzer		ANT			Check	2.4~3.9kHz

4.1.8 Receiver Section: Adjustment Mode Setting Items

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1.RX BPF A-Band	1) Frequency: 136.050MHz SSG: -110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	2) Frequency: 145.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	3) Frequency: 173.950MHz SSG:-100dBm (2.24μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	4) Frequency: 216.050MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	5) Frequency: 224.050MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	6) Frequency: 410.050MHz SSG:-110dBm (0.707μV) Mode:FM (m (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	7) Frequency: 439.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	8) Frequency: 469.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
B-Band	9) Frequency: 118.050MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	10) Frequency: 145.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	11) Frequency: 173.950MHz SSG:-100dBm (2.24μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	12) Frequency: 205.05MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	13) Frequency: 224.050MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	14) Frequency: 379.950MHz SSG:-100dBm (2.24μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	15) Frequency: 439.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	16) Frequency: 469.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
2.IF Filter Calibration	1) Frequency: 145.953MHz SSG:-53dBm (501μV) Mode:FM OFF	SSG		ANT SP		[Auto]	Automatic adjustment	
	2) Frequency: 145.947MHz SSG:-53dBm (501μV) Mode:FM OFF	SSG		ANT SP		[Auto]	Automatic adjustment	
3.Squelch and S-meter A-Band	1) Frequency: 145.950MHz SQL Level1 SSG:-122.5dBm (0.168μV) S-1 SSG:-117dBm (0.32μV) S-FULL SSG: -102dBm (1.77μV)	SSG		ANT		[▸] or [Write]	Write	
	2) Frequency: 224.050MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	
	3) Frequency: 439.950MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	4) Frequency: 145.950MHz SQL Level1 SSG:-122.5dBm (0.168μV) S-1 SSG:-117dBm (0.32μV) S-FULL SSG: -102dBm (1.77μV)	SSG		ANT		[▸] or [Write]	Write	
	5) Frequency: 224.050MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	
	6) Frequency: 439.950MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	
HF-Band	7) Frequency: 51.100MHz SQL Level1 SSG:-119dBm (0.25μV) S-1 SSG:-114dBm (0.44μV) S-FULL SSG: -99dBm (2.51μV)	SSG		ANT		[▸] or [Write]	Write	

4.1.9 Receiver Section: User Mode Confirmation Items

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1.Sensitivity A-Band	1) Frequency: 147.950MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	2) Frequency: 147.950MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	3) Frequency: 222.050MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	4) Frequency: 222.050MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
A-Band	5) Frequency: 438.050MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	6) Frequency: 438.050MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
B-Band	7) Frequency: 144.550MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	8) Frequency: 144.550MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	9) Frequency: 224.950MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	10) Frequency: 224.950MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	11) Frequency: 438.050MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	12) Frequency: 438.050MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	13) Frequency: 80.200MHz Mode: WFM (75kHz) SSG: -102.5dBm (1.677μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	16dB SINAD or more
	14) Frequency: 118.050MHz Mode: AM 60% SSG: -95.5dBm (3.754μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
2.Squelch A-Band	1) Frequency: 145.950MHz SQL :Level1 Mode: FM (3kHz) SSG: -117dBm (0.32μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	2) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	3) Frequency: 223.550MHz SQL :Level1 Mode: FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	4) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	5) Frequency: 439.950MHz SQL :Level1 Mode: FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	6) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
B-Band	7) Frequency: 145.950MHz SQL :Level1 Mode:FM (3kHz) SSG: -117dBm (0.32μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	8) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	9) Frequency: 223.550MHz SQL :Level1 Mode:FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	10) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	11) Frequency: 439.950MHz SQL :Level1 Mode:FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	12) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	13) Frequency: 51.100MHz SQL :Level1 Mode:FM (3kHz) SSG: -111dBm (0.63μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	14) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch

TH-D75A (K) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
3.S-meter A-Band	1) Frequency: 145.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	2) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	3) Frequency: 223.550MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	4) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	5) Frequency: 439.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	6) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
B-Band	7) Frequency: 145.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	8) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	9) Frequency: 223.550MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	10) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	11) Frequency: 439.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	12) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	13) Frequency: 51.100MHz Mode:FM (3kHz) SSG: -109dBm (0.793μV)	SSG		ANT			Check	One or more segments in S-meter light.
	14) SSG: -94dBm (4.5μV)	SSG		ANT			Check	All segments in S-meter light.
4.AF distortion A-Band	1) Frequency: 145.950MHz Mode:FM (3kHz) SSG: -53dBm (501μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	5% or less
B-Band	2) Frequency: 439.950MHz Mode:FM (3kHz) SSG: -53dBm (501μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	5% or less
5.Standby Current	1) Set the transceiver to the single band. ([F]+[A/B]) 2) Close the squelch.	Ammeter		Battery terminal			Check	170mA or less
6.Built-in BAR Antenna	1) Receive the AM broadcast between 1000 and 1600kHz.			BARANT			Check	Check that AM broadcast is received.

4.2 TH-D75E (E, T) type

4.2.1 Updating the Firmware

The firmware can be updated using Firmware Updating Program (s).
Update the firmware according to the procedure displayed in updating program.
Download the latest updating program from the following URL:
https://www.kenwood.com/i/products/info/amateur/software_download.html

* The URL may change without notice.

4.2.2 Required Test Equipment

(1) Stabilized Power Supply
- a) The supply voltage can be changed between 3V and 16V and the current is 3A or more.
- b) The standard voltage is 13.8V.

(2) DC Ammeter (DC. A)
- a) Class 1 ammeter (17 ranges and other features)
- b) The full scale can be switched between 300mA and 3A.
- c) A cable with low internal loss must be used.

(3) Frequency Counter (f. counter)
- a) Frequencies of up to 1GHz or so can be measured.
- b) The sensitivity can be changed to 250MHz or below and measurements are highly stable and accurate (about 0.2ppm).

(4) Power Meter (terminal type)
- a) Measurable frequency: Up to 500MHz
- b) Impedance: 50Ω, unbalanced
- c) Measuring range: Full scale of 10W
- d) The specified special connection cable must be used.

(5) RF Voltmeter (RF VM)
- a) Measurable frequency: Up to 500MHz or so

(6) Linear Detector
- a) Measurable frequency: Up to 500MHz
- b) Characteristic is flat and CN is 60dB or more.

(7) Digital Voltmeter (DVM)
- a) Voltage range: FS = 18V or so
- b) Input resistance: 1MΩ or more

(8) Oscilloscope
- a) Measuring range: DC to 30MHz
- b) Provides highly accurate measurements for 5 to 25MHz

(9) AF Voltmeter (AF VM)
- a) Measurable frequency: 50Hz to 1MHz
- b) Maximum sensitivity: 1mV or more

(10) Spectrum Analyzer
- a) Measuring range: DC to 1GHz or more

(11) Standard Signal Generator (SSG)
- a) Maximum frequency: 500MHz or more
- b) Output: -133dBm (0.05μV) to -13dBm (50mV)
- c) Output impedance: 50Ω

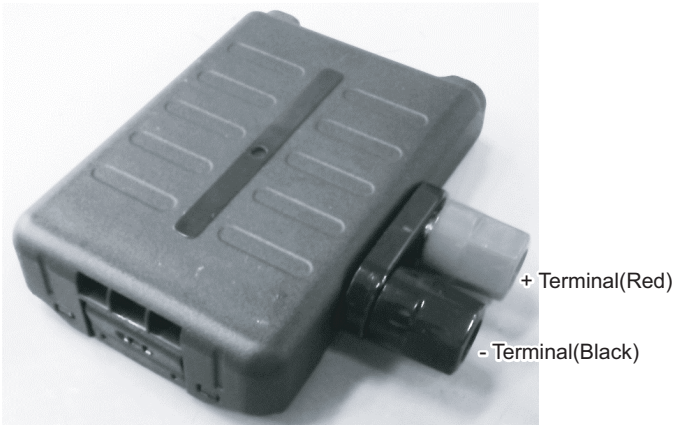
(12) Tracking Generator
- a) Center frequency: 50kHz to 200MHz
- b) Frequency deviation: ±35MHz
- c) Output voltage: 100mV or more

(13) Dummy Load
- a) 8Ω, 3W or more

(14) Audio Analyzer

4.2.3 Service Jig

■Battery Jig (W3F-0208-00)

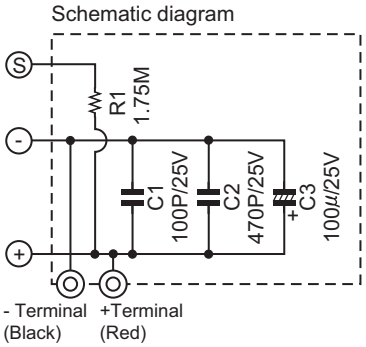


Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or both.

Note:

When using the battery jig, you must measure the voltage at the terminals of the battery jig. Otherwise, a slight voltage drop may occur within the power cable, between the power supply and the battery jig, especially while the transceiver transmits.

Schematic diagram



■**Connection cable**

Connection cable consists of two pieces of CORD ASSY (X42-3510-10), to extend its cable length double for connection between two PCBs.

For repair and adjustment, use this connection cable to connect a CONTROL PCB (MAIN UNIT 1/5) and a TX-RX PCB (MAIN UNIT 2/5) by inserting the connection cable to connectors on these PCBs.

Note:

If CONTROL PCB (MAIN UNIT 1/5) and TX-RX PCB (MAIN UNIT 2/5) are disassembled from the main chassis, there may possibly cause short-circuit, electrical shock or the high-frequency signal interference.

To verify the transmit state, be sure to keep CONTROL PCB (MAIN UNIT 1/5) and TX-RX PCB (MAIN UNIT 2/5) assembled in a chassis.

Besides, transmission without a heat sink attached may possibly cause the device to be damaged.

Be sure to verify the transmit performance with LOW/EL transmit power transmitted in a short amount of time.

■**Connection cable**

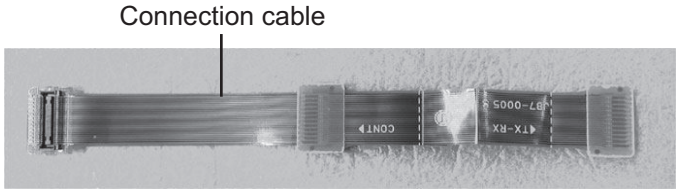


Fig.1

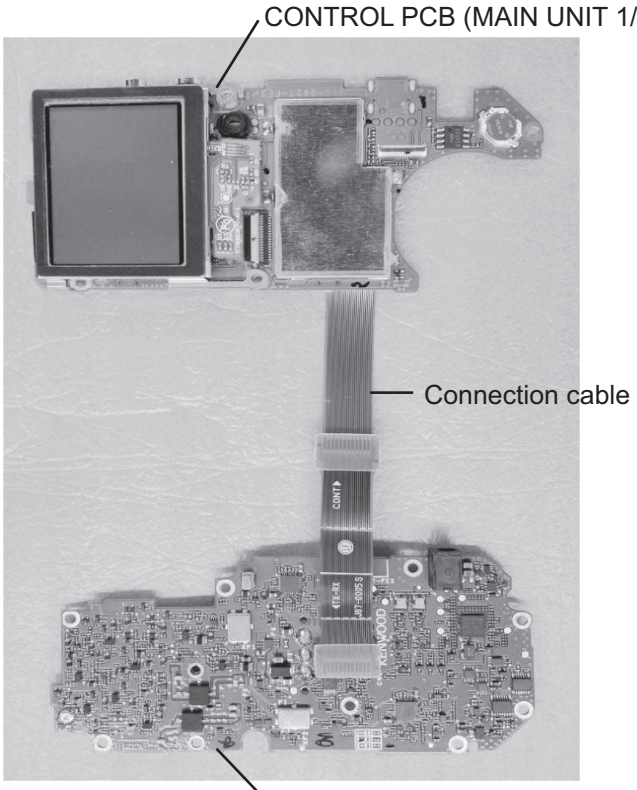


Fig.2

■**How to enter adjustment mode using 3-pin plug (ø2.5)**

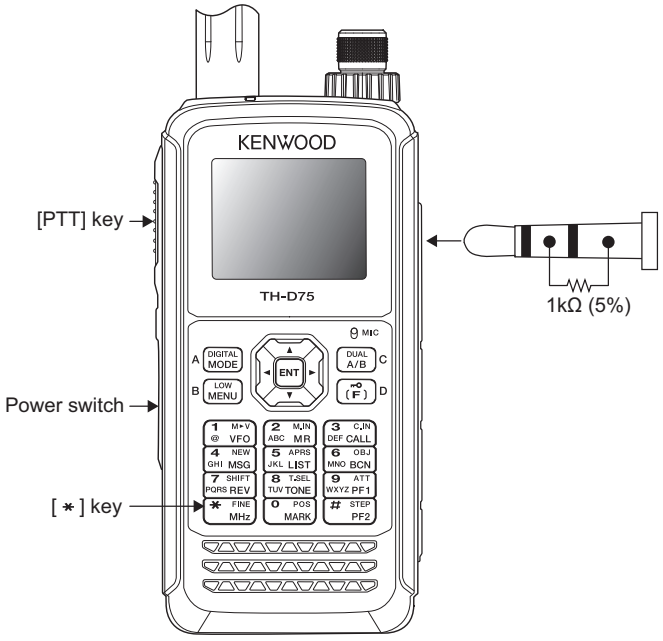
Description

It is possible to enter the adjustment mode by installing a resistor between the REM and GND terminals of the speaker jack.

Connect a resistor (1kΩ) between the two pins of the 3-pin plug as shown in the figure.

Operation method

Insert the modified 3-pin plug into the speaker jack of the transceiver. Then, enter the adjustment mode by pressing and holding the power switch while pressing the [∗] and [PTT] keys on the transceiver and turning the power ON.



4.2.4 Adjustment Mode

■Outline

(1) Set the transceiver to adjustment mode and change each setting data item.

(2) This mode is used when the CONTROL PCB (MAIN UNIT 1/5) or TX-RX PCB (MAIN UNIT 2/5) is replaced at a service center or at the time of making transceiver re-adjustments.

Note:

All adjustment data is stored in the flash memory (CONTROL PCB (MAIN UNIT 1/5) IC2008).

■Operation procedures in adjustment mode

There are two ways to enter the adjustment mode.

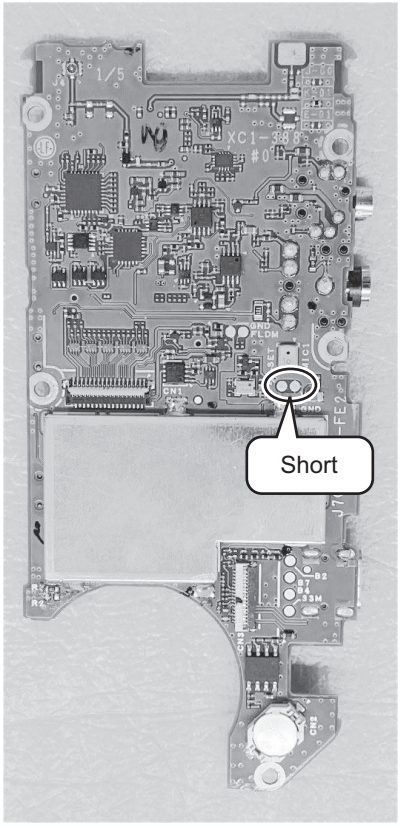
(1) How to enter adjustment mode by shorting two lands

a) Turn ON the transceiver.

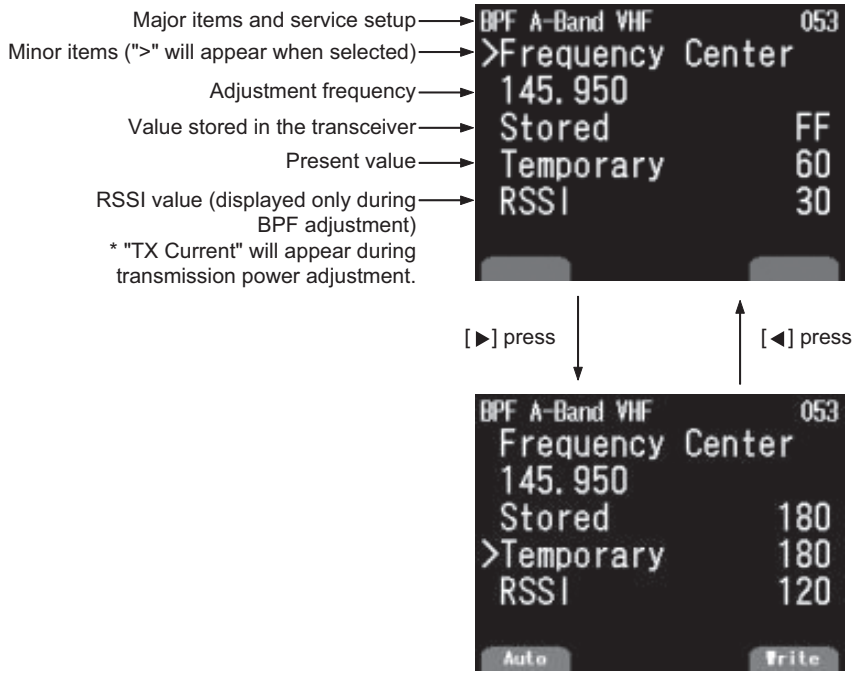
b) Short-circuit two lands (SET and GND) on the component side of the CONTROL PCB (MAIN UNIT 1/5) using tweezers, etc. to set the transceiver to adjustment mode.

(2) How to enter adjustment mode using the speaker jack without disassembling the transceiver

Refer to the contents of "■How to enter the adjustment mode using 3-pin plug".



■**LCD display in the adjustment mode**



■**Key operation in the adjustment mode**

Key name	Function	
	">" appears for minor items (Adjustment item change mode).	">" appears for "Temporary" (Adjustment value change/Setting mode)
Encoder, [▲], [▼]	Adjustment item change	Adjustment value change
[◀]	-	Goes to adjustment item change mode
[▶], [ENT], [Write] ([A/B])	Set to adjustment value change/adjustment mode, and ">" moves to "Temporary."	Adjustment value change
[Auto] ([MODE])	-	Start of automatic adjustment (BPF calibration adjustment)*1

Note:

- Transmission power adjustments are possible with the [▶], [ENT] or [Write] key only during transmission.
- The backlight will not be lit while in adjustment mode so as to prevent the adverse influence of the backlight current on the adjustment.

***1**

(1) The BPF automatic adjustment will start when the [Auto] key is pressed.
The adjustment value will be set when the automatic adjustment is finished successfully.

"Adjust NG" will appear if the automatic adjustment fails.

(2) Calibration is adjusted with the [Auto] key.

■**Adjustment items and Display**

TH-D75E (E, T) type					
Adjustment items	**Display**				
	Adjustment item number	**Major item**	**Minor item**	**Frequency adjustment (MHz)**	**6th line displayed**
A. Battery Voltage (7.4 V)	0	COMMON	Battery	439.900	
B. TX Frequency	1	Frequency1	B/S Off	439.900	
	2		B/S On-		
	3		B/S On+		
	4	Frequency2 COARSE	B/S Off	439.900	
	5		B/S On-		
	6		B/S On+		
	7	Frequency2 FINE	B/S Off	439.900	
	8		B/S On-		
	9		B/S On+		
C. TX Power	10	TX Hi Power VHF	Frequency Center	145.100	TX Current
	11		Frequency Low	144.100	TX Current
	12		Frequency High	145.900	TX Current
	13	TX Mid Power VHF	Frequency Center	145.100	TX Current
	14		Frequency Low	144.100	TX Current
	15		Frequency High	145.900	TX Current
	16	TX Low Power VHF	Frequency Center	145.100	TX Current
	17		Frequency Low	144.100	TX Current
	18		Frequency High	145.900	TX Current
	19	TX EL Power VHF	Frequency Center	145.100	TX Current
	20		Frequency Low	144.100	TX Current
	21		Frequency High	145.900	TX Current
	34	TX Hi Power UHF	Frequency Center	435.100	TX Current
	35		Frequency Low	430.100	TX Current
	36		Frequency High	439.900	TX Current
	37	TX Mid Power UHF	Frequency Center	435.100	TX Current
	38		Frequency Low	430.100	TX Current
	39		Frequency High	439.900	TX Current
	40	TX Low Power UHF	Frequency Center	435.100	TX Current
	41		Frequency Low	430.100	TX Current
	42		Frequency High	439.900	TX Current
	43	TX EL Power UHF	Frequency Center	435.100	TX Current
	44		Frequency Low	430.100	TX Current
	45		Frequency High	439.900	TX Current
D. MOD Gain	46	MOD Gain VHF	Frequency Low	144.100	
	48	MOD Gain UHF	Frequency Low	430.100	
E. MAX Deviation	49	MAX Deviation VHF	Frequency Low	144.100	
	51	MAX Deviation UHF	Frequency Low	430.100	

TH-D75E (E, T) type					
Adjustment items	Display				
	Adjustment item number	Major item	Minor item	Frequency adjustment (MHz)	6th line displayed
F. BPF	52	BPF A-Band VHF	Frequency Low	136.050	RSSI
	53		Frequency Center	145.950	RSSI
	54		Frequency High	173.950	RSSI
	58	BPF A-Band UHF	Frequency Low	410.050	RSSI
	59		Frequency Center	439.950	RSSI
	60		Frequency High	469.950	RSSI
	64	BPF B-Band VHF	Frequency Low	118.050	RSSI
	65		Frequency Center	145.950	RSSI
	66		Frequency High	173.950	RSSI
	67	BPF B-Band 220	Frequency Low	205.050	RSSI
	68		Frequency Center	224.050	RSSI
	71	BPF B-Band UHF	Frequency LowD	379.950	RSSI
	72		Frequency Center	439.950	RSSI
	73		Frequency HighD	469.950	RSSI
G. IF Filter Calibration	75	Calibration	+3kHz	145.950	
	76		-3kHz		
H. SQL/S-meter	78	SQL A-Band VHF	Level1	145.950	
	80	SM A-Band VHF	S-1	145.950	
	81		S-FULL		
	86	SQL A-Band UHF	Level1	439.950	
	88	SM A-Band UHF	S-1	439.950	
	89		S-FULL		
	90	SQL B-Band VHF	Level1	145.950	
	92	SM B-Band VHF	S-1	145.950	
	93		S-FULL		
	94	SQL B-Band 220	Level1	224.050	
	96	SM B-Band 220	S-1	224.050	
	97		S-FULL		
	98	SQL B-Band UHF	Level1	439.950	
	100	SM B-Band UHF	S-1	439.950	
	101		S-FULL		
	102	SQL B-Band 50	Level1	51.100	
	104	SM B-Band 50	S-1	51.100	
	105		S-FULL		

4.2.5 Common Section

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1.Battery Voltage	Goes to adjustment mode. See "4.2.4 Adjustment Mode". 1) Battery terminal: 7.4V	DVM		Battery terminal			[▸] or [Write]	**Note:** The correct transmission power will not be output from the transceiver in user mode unless the battery voltage is adjusted correctly.

4.2.6 Transmitter Section: Adjustment Mode Setting Items

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. TX Frequency	Battery terminal:7.4V/3.0A 1) Frequency1 B/S Off Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±50Hz
	2) Frequency1 B/S On- Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±50Hz
	3) Frequency1 B/S On+ Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±50Hz
	4) Frequency2 COARSE B/S Off Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±150Hz **Note:** Before adjusting this item, write 128 to "Frequency2 FINE B/S Off".
	5) Frequency2 COARSE B/S On- Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▸] or [Write]	439.900MHz ±150Hz **Note:** Before adjusting this item, write 128 to "Frequency2 FINE B/S On-".

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. TX Frequency	6) Frequency2 COARSE B/S On+ Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±150Hz **Note:** Before adjusting this item, write 128 to "Frequency2 FINE B/S On+".
	7) Frequency2 FINE B/S Off Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±50Hz **Note:** Before adjusting this item, adjust "Frequency2 COARSE B/S Off".
	8) Frequency2 FINE B/S On- Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±50Hz **Note:** Before adjusting this item, adjust "Frequency2 COARSE B/S On-".
	9) Frequency2 FINE B/S On+ Frequency:439.900MHz Transmission	f. counter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	439.900MHz ±50Hz **Note:** Before adjusting this item, adjust "Frequency2 COARSE B/S On+".
2. TX Power	Battery terminal:7.4V/3.0A 1) Power:Hi Frequency:145.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	2) Power:Hi Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	3) Power:Hi Frequency:145.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	4) Power:Mid Frequency:145.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	5) Power:Mid Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	6) Power:Mid Frequency:145.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.1W 1.55A or less
	7) Power:Low Frequency:145.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
2. Power	8) Power:Low Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	9) Power:Low Frequency:145.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	10) Power:EL Frequency:145.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	11) Power:EL Frequency:144.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	12) Power:EL Frequency:145.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	13) Power:Hi Frequency:435.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	14) Power:Hi Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	15) Power:Hi Frequency:439.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	4.85W ±0.1W 2.2A or less
	16) Power:Mid Frequency:435.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.2W 1.55A or less
	17) Power:Mid Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.2W 1.55A or less
	18) Power:Mid Frequency:439.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	2.0W ±0.2W 1.55A or less
	19) Power:Low Frequency:435.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	20) Power:Low Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	21) Power:Low Frequency:439.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	0.5W ±0.05W 1.00A or less
	22) Power:EL Frequency:435.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	23) Power:EL Frequency:430.100MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less
	24) Power:EL Frequency:439.900MHz Transmission	Power meter Ammeter		ANT		Encoder [▲]/[▼]	[▶] or [Write]	50mW~100mW 0.55A or less

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. MOD Gain	Battery terminal: 7.4V/3.0A 1) MOD Gain VHF Frequency: 144.100MHz Linear detector FM+ LPF: 3kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 232. Then check that the deviation is 2.4kHz±75Hz.
	2) MOD Gain UHF Frequency: 430.100MHz Linear detector FM+ LPF: 3kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 232. Then check that the deviation is 2.4kHz±75Hz.
4. Max Deviation	Battery terminal:7.4V/3.0A 1) Max Deviation VHF Frequency: 144.100MHz Linear detector FM+ LPF: 15kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 115. Then check that the deviation is 4.15kHz±100Hz.
	2) Max Deviation UHF Frequency: 430.100MHz Linear detector FM+ LPF: 15kHz HPF: OFF De-emphasis: OFF Transmission	Linear detector		ANT		Encoder [▲]/[▼]	[▶] or [Write]	Transmit after writing 115. Then check that the deviation is 4.15kHz±100Hz.

4.2.7 Transmitter Section: User Mode Confirmation Items

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. TX Frequency	Battery terminal:7.4V/3.0A 1) Frequency: 439.900MHz Transmission	f. counter		ANT			Check	439.900MH ±400Hz
2. TX Power	Battery terminal:7.4V/3.0A 1) Power: Hi Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	4.85W ±0.3W 2.2A or less
	2) Power: Hi Frequency: 145.900MHz Transmission	Power meter Ammeter		ANT			Check	4.85W ±0.3W 2.2A or less
	3) Power: Mid Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	4) Power: Mid Frequency: 145.900MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	5) Power: Low Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	6) Power: Low Frequency: 145.900MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	7) Power: EL Frequency: 144.100MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	8) Power: EL Frequency: 145.900MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	9) Power: Hi Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	4.8W ±0.3W 2.2A or less
	10) Power: Hi Frequency: 439.900MHz Transmission	Power meter Ammeter		ANT			Check	4.8W ±0.3W 2.2A or less
	11) Power: Mid Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	12) Power: Mid Frequency: 439.900MHz Transmission	Power meter Ammeter		ANT			Check	2.0W ±0.4W 1.6A or less
	13) Power: Low Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	14) Power: Low Frequency: 439.900MHz Transmission	Power meter Ammeter		ANT			Check	0.5W -0.3/+0.4W 1.0A or less
	15) Power: EL Frequency: 430.100MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less
	16) Power: EL Frequency: 439.900MHz Transmission	Power meter Ammeter		ANT			Check	50mW -40/+250mW 0.6A or less

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
3.MIC sensitivity	1) Power: Low Frequency: 145.100MHz Linear detector FM+ LPF:15kHz HPF:OFF De-emphasis: OFF Audio analyzer AG:1kHz/8mV Transmission	Linear detector Oscilloscope Audio analyzer		ANT			Check	2.4~3.9kHz
	2) Power: Low Frequency: 435.100MHz Linear detector FM+ LPF:15kHz HPF:OFF De-emphasis: OFF Audio analyzer AG:1kHz/8mV Transmission	Linear detector Oscilloscope Audio analyzer		ANT			Check	2.4~3.9kHz

4.2.8 Receiver Section: Adjustment Mode Setting Items

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1.RX BPF A-Band	1) Frequency: 136.050MHz SSG: -110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	2) Frequency: 145.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	3) Frequency: 173.950MHz SSG:-100dBm (2.24μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	4) Frequency: 410.050MHz SSG:-110dBm (0.707μV) Mode:FM (m (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	5) Frequency: 439.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	6) Frequency: 469.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	7) Frequency: 118.050MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	8) Frequency: 145.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	9) Frequency: 173.950MHz SSG:-100dBm (2.24μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	10) Frequency: 205.05MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	11) Frequency: 224.050MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	12) Frequency: 379.950MHz SSG:-100dBm (2.24μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	13) Frequency: 439.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
	14) Frequency: 469.950MHz SSG:-110dBm (0.707μV) Mode:FM (3kHz) AF output:0.63V/8Ω	SSG Oscilloscope Audio analyzer		ANT SP		[Auto]	Automatic adjustment	Max RSSI value
2.IF Filter Calibration	1) Frequency: 145.953MHz SSG:-53dBm (501μV) Mode:FM OFF	SSG		ANT SP		[Auto]	Automatic adjustment	
	2) Frequency: 145.947MHz SSG:-53dBm (501μV) Mode:FM OFF	SSG		ANT SP		[Auto]	Automatic adjustment	
3.Squelch and S-meter A-Band	1) Frequency: 145.950MHz SQL Level1 SSG:-122.5dBm (0.168μV) S-1 SSG:-117dBm (0.32μV) S-FULL SSG: -102dBm (1.77μV)	SSG		ANT		[▸] or [Write]	Write	
	2) Frequency: 439.950MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	3) Frequency: 145.950MHz SQL Level1 SSG:-122.5dBm (0.168μV) S-1 SSG:-117dBm (0.32μV) S-FULL SSG: -102dBm (1.77μV)	SSG		ANT		[▸] or [Write]	Write	
	4) Frequency: 224.050MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	
	5) Frequency: 439.950MHz SQL Level1 SSG:-124dBm (0.14μV) S-1 SSG:-120dBm (0.22μV) S-FULL SSG: -105dBm (1.26μV)	SSG		ANT		[▸] or [Write]	Write	
HF-Band	6) Frequency: 51.100MHz SQL Level1 SSG:-119dBm (0.25μV) S-1 SSG:-114dBm (0.44μV) S-FULL SSG: -99dBm (2.51μV)	SSG		ANT		[▸] or [Write]	Write	

4.2.9 Receiver Section: User Mode Confirmation Items

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1.Sensitivity A-Band	1) Frequency: 145.950MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	2) Frequency: 145.950MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	3) Frequency: 430.050MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	4) Frequency: 430.050MHz Mode: FM (3kHz) SSG: -120.5dBm (0.211μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	5) Frequency: 144.550MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	6) Frequency: 144.550MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	7) Frequency: 224.950MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	8) Frequency: 224.950MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	9) Frequency: 430.050MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:OFF	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
	10) Frequency: 430.050MHz Mode: FM (3kHz) SSG: -119.5dBm (0.237μV) AF output: 0.63V/8Ω ATT:ON	SSG Audio analyzer Oscilloscope		ANT SP			Check	Less than 12dB SINAD
	11) Frequency: 80.200MHz Mode: WFM (75kHz) SSG: -102.5dBm (1.677μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	16dB SINAD or more
	12) Frequency: 118.050MHz Mode: AM 60% SSG: -95.5dBm (3.754μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	12dB SINAD or more
2.Squelch A-Band	1) Frequency: 145.950MHz SQL :Level1 Mode: FM (3kHz) SSG: -117dBm (0.32μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	2) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	3) Frequency: 439.950MHz SQL :Level1 Mode: FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	4) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	5) Frequency: 145.950MHz SQL :Level1 Mode:FM (3kHz) SSG: -117dBm (0.32μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	6) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	7) Frequency: 223.550MHz SQL :Level1 Mode:FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	8) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	9) Frequency: 439.950MHz SQL :Level1 Mode:FM (3kHz) SSG: -120dBm (0.22μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	10) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
	11) Frequency: 51.100MHz SQL :Level1 Mode:FM (3kHz) SSG: -111dBm (0.63μV)	SSG Oscilloscope		ANT			Check	Open Squelch
	12) SSG: OFF	SSG Oscilloscope		ANT			Check	Close Squelch
3.S-meter A-Band	1) Frequency: 145.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	2) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	3) Frequency: 439.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	4) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.

TH-D75E (E, T) type								
Item	Condition	Measurement			Adjustment			Specifications /Note
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
B-Band	5) Frequency: 145.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	6) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	7) Frequency: 223.550MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	8) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	9) Frequency: 439.950MHz Mode:FM (3kHz) SSG: -115dBm (0.4μV)	SSG		ANT			Check	One or more segments in S-meter light.
	10) SSG: -100dBm (2.24μV)	SSG		ANT			Check	All segments in S-meter light.
	11) Frequency: 51.100MHz Mode:FM (3kHz) SSG: -109dBm (0.793μV)	SSG		ANT			Check	One or more segments in S-meter light.
	12) SSG: -94dBm (4.5μV)	SSG		ANT			Check	All segments in S-meter light.
4.AF distortion A-Band	1) Frequency: 145.950MHz Mode:FM (3kHz) SSG: -53dBm (501μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	5% or less
B-Band	2) Frequency: 439.950MHz Mode:FM (3kHz) SSG: -53dBm (501μV) AF output: 0.63V/8Ω	SSG Audio analyzer Oscilloscope		ANT SP			Check	5% or less
5.Standby Current	1) Set the transceiver to the single band. ([F]+[A/B]) 2) Close the squelch.	Ammeter		Battery terminal			Check	170mA or less
6.Built-in BAR Antenna	1) Receive the AM broadcast between 1000 and 1600kHz.			BARANT			Check	Check that AM broadcast is received.

SECTION 5
TROUBLESHOOTING

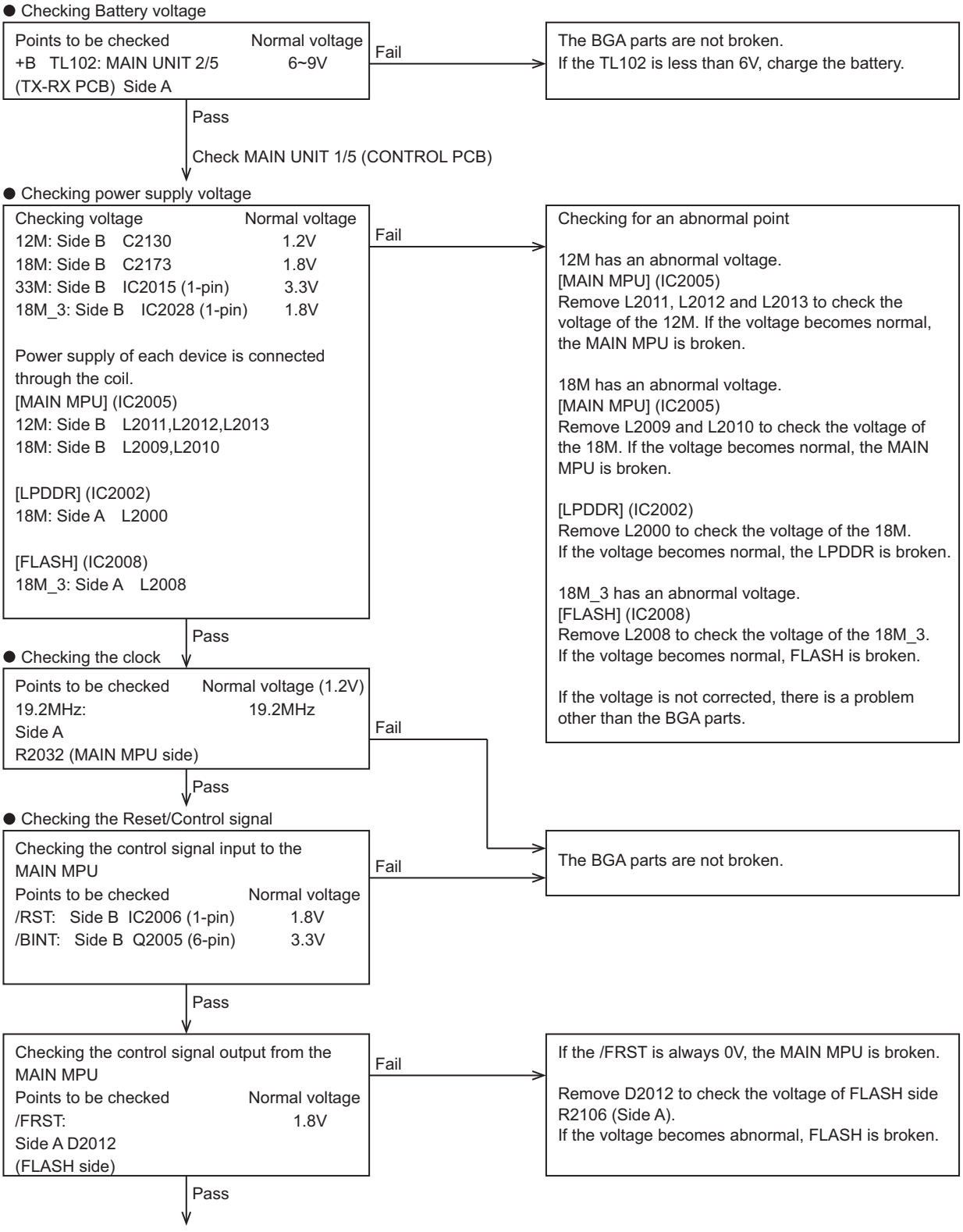
5.1 Fault Diagnosis of the BGA (Ball Grid Array) IC

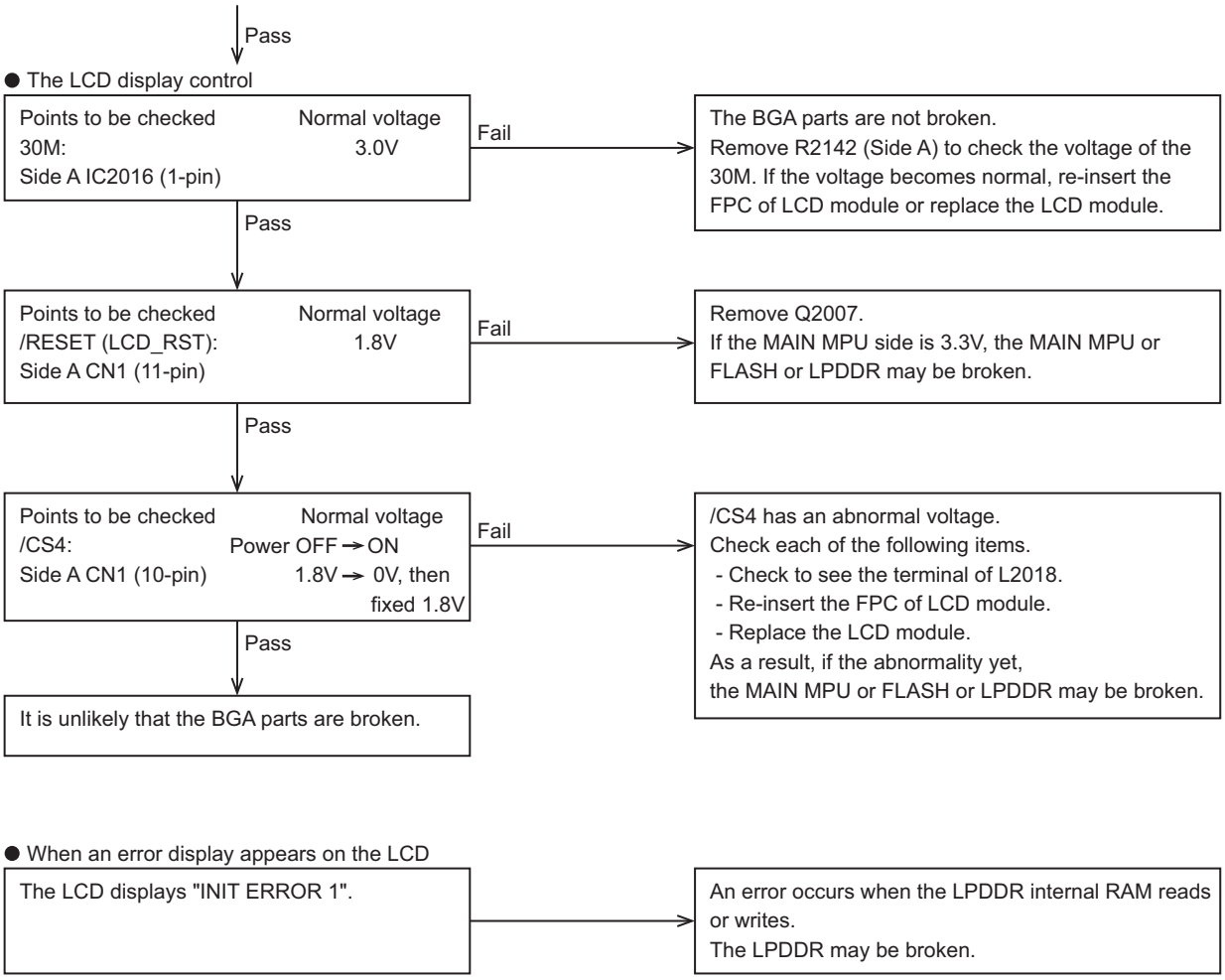
■Overview

A flowchart for determining whether or not the transceiver can be powered on (the LCD does not function even if the power switch is turned on) due to broken BGA parts.

■BGA parts

MAIN MPU (IC2005), LPDDR (IC2002), FLASH (IC2008)





Descriptions of signal names

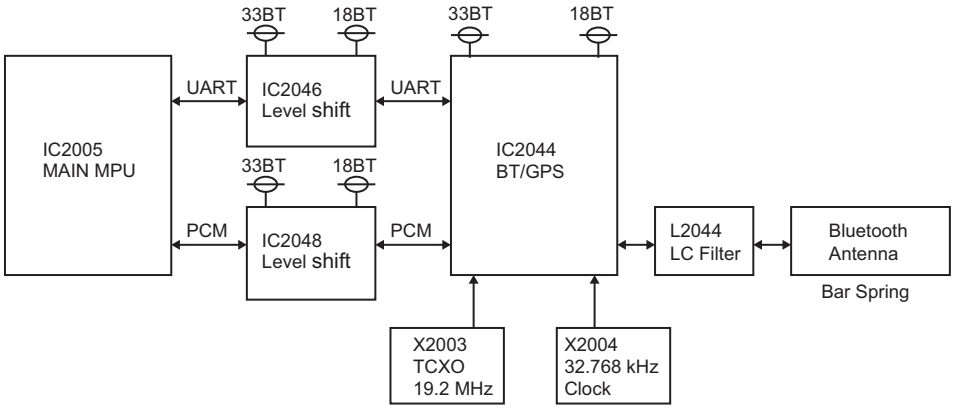
(1) /RST	:MAIN MPU reset signal	LOW → Reset
(2) /BINT	:Battery final voltage monitoring	LOW → Final voltage
(3) /FRST	:FLASH reset signal	LOW → Reset
(4) /CS_F	:FLASH chip select signal	LOW → Active
(5) 30M	:LCD module control 3.0V power supply	
(6) /RESET(LCD_RST)	:LCD reset signal	LOW → Reset
(7) /CS4	:LCD controller chip select signal	LOW → Active

5.2 Failure diagnosis of the Bluetooth section

■Overview:

When the Bluetooth function (HSP: connection to headset, SPP: communication in MCP-D75 or terminal mode, etc.) does not operate, use this flowchart to determine the problem.

Major parts for a Bluetooth circuit
- Bluetooth antenna
- LC filter (L2044)
- BT/GPS (IC2044)
- Level shift (IC2046)
- Level shift (IC2048)
- TCXO 19.2 MHz (X2003)
- 32.768 kHz clock (X2004)
- 33BT AVR (IC2041)
- 18BT AVR (IC2038)
- MAIN MPU (IC2005)



The transceiver does not pair with a Bluetooth (BT) headset.

↓

Check that the built-in battery of the BT headset has a sufficient remaining capacity.
Check that the BT headset is turned power ON.
Check that the BT headset is in pairing mode.

Fail → Charge the BT headset.
Turn ON and bring the BT headset within a distance of 1 to 2m from the transceiver.
Retry pairing the transceiver with the BT headset.

↓ Pass

Check that the BT antenna is in contact with the MAIN UNIT 1/5 (CONTROL PCB) and that the antenna is not deformed. (Check the presence of the contact trace of the BT antenna on the land.)

Fail → Build in the BT antenna correctly.
If the antenna has a defect, replace the corresponding parts.

↓ Pass

Check the CONTROL PCB.

↓

Checking the CONTROL PCB

↓

Make a visual check on the matching circuit of the antenna.
Side A L2047,C2288,C2286,C2279
Side B L2044,C2271

Fail → Replace any defective parts.

↓ Pass

Check that the power supply voltage to the 33BT is 3.3 V.
Side A L2032, L2049: 3.3V

Fail → Replace defective parts of the 33BT circuit as necessary.
Side A IC2041 (33BT AVR)
Side A L2032,L2049
Side A C2218,C2230,C2293
Side B C2245,C2246,C2267,C2285

Fail → The BT/GPS (IC2044) is defective.
Replace the CONTROL PCB.

↓ Pass

Check that the power supply voltage to the 18BT is 1.8 V.
Side A L2033, L2048: 1.8V

Fail → Replace defective parts of the 18BT circuit as necessary.
Side A IC2038 (18BT AVR)
Side A L2033,L2048
Side A C2217,C2223,C2237
Side B C2242,C2265,C2284,C2294

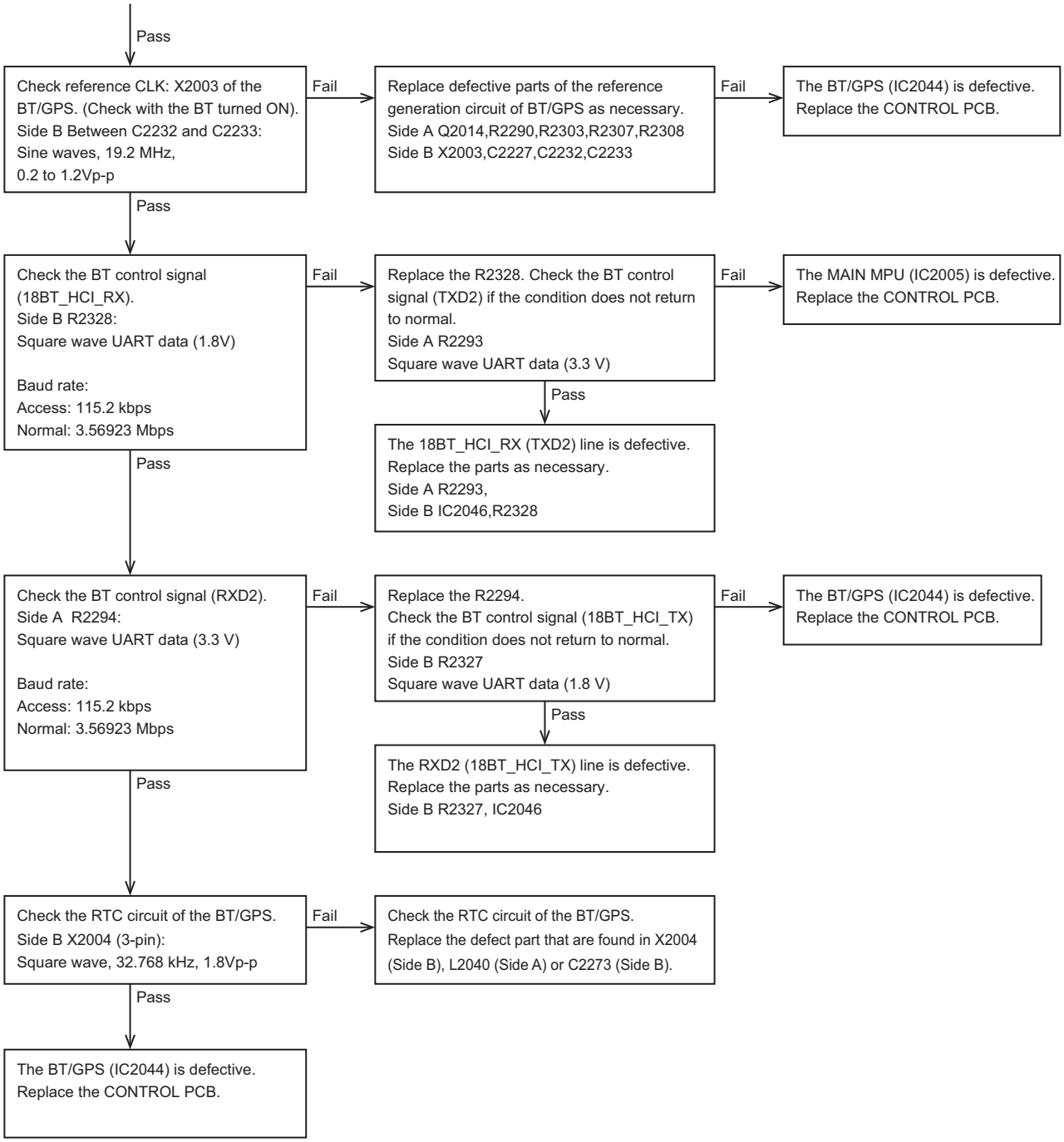
Fail → The BT/GPS (IC2044) is defective.
Replace the CONTROL PCB.

↓ Pass

Check that the 18BT control signal (/BT_SHUTDOWN) is at 1.8 V.
(Check with the BT turned ON).
Side A R2283: 1.8V

Fail → Replace the R2283.
The MAIN MPU (IC2005) is defective if the condition does not return to normal.
Replace the CONTROL PCB.

↓ Pass



Descriptions of signal names

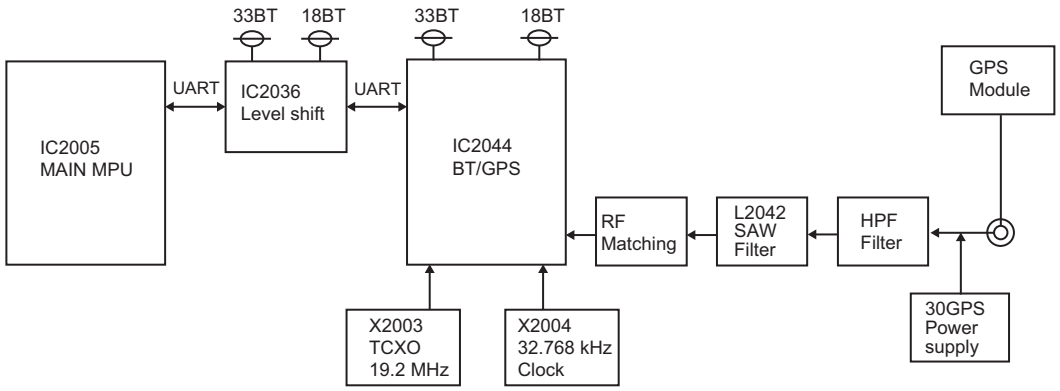
(1) 33BT:BT/GPS IC 3.3V power supply
(2) 18BT:BT/GPS IC 1.8V power supply
(3) TXD2:BT/GPS serial data line (UART)(IC2005(MAIN MPU) → IC2046(Level Shift))
(4) RXD2:BT/GPS serial data line (UART)(IC2046(Level Shift) → IC2005(MAIN MPU))
(5) 18BT_HCI_RX:Serial data line (UART)(IC2046(Level Shift) → IC2044(BT/GPS IC))
(6) 18BT_HCI_TX:Serial data line (UART)(IC2044(BT/GPS IC) → IC2046(Level Shift))
(7) /BT_SHUTDOWN:BT active control (IC2005(MAIN MPU) → IC2044(BT/GPS IC)) High Active, Low Reset

5.3 Failure diagnosis of the GPS section

■Overview:

When the GPS function does not operate, use this flowchart to determine the problem.

Major parts for a GPS circuit
- GPS Connector (J4)
- SAW Filter (L2042)
- BT/GPS (IC2044)
- Level shift (IC2036)
- TCXO 19.2 MHz (X2003)
- 32.768 kHz clock (X2004)
- 33BT AVR (IC2041)
- 18BT AVR (IC2038)
- 30GPS AVR (IC2042)
- MAIN MPU (IC2005)
- GPS module (T9A-0129-**)



Normal positioning fails.

Check that the location is suitable for sufficient GPS signal reception.
- Fail → Receive the GPS signal in an open-sky area.
- Pass

Check that the MAIN UNIT 1/5 (CONTROL PCB) and the patch antenna are connected securely with a coaxial cable.
- Fail → Connect the GPS antenna cable correctly. Otherwise, try replacing the GPS antenna module or the coaxial connector (Side A J4).
- Pass

Check the CONTROL PCB.

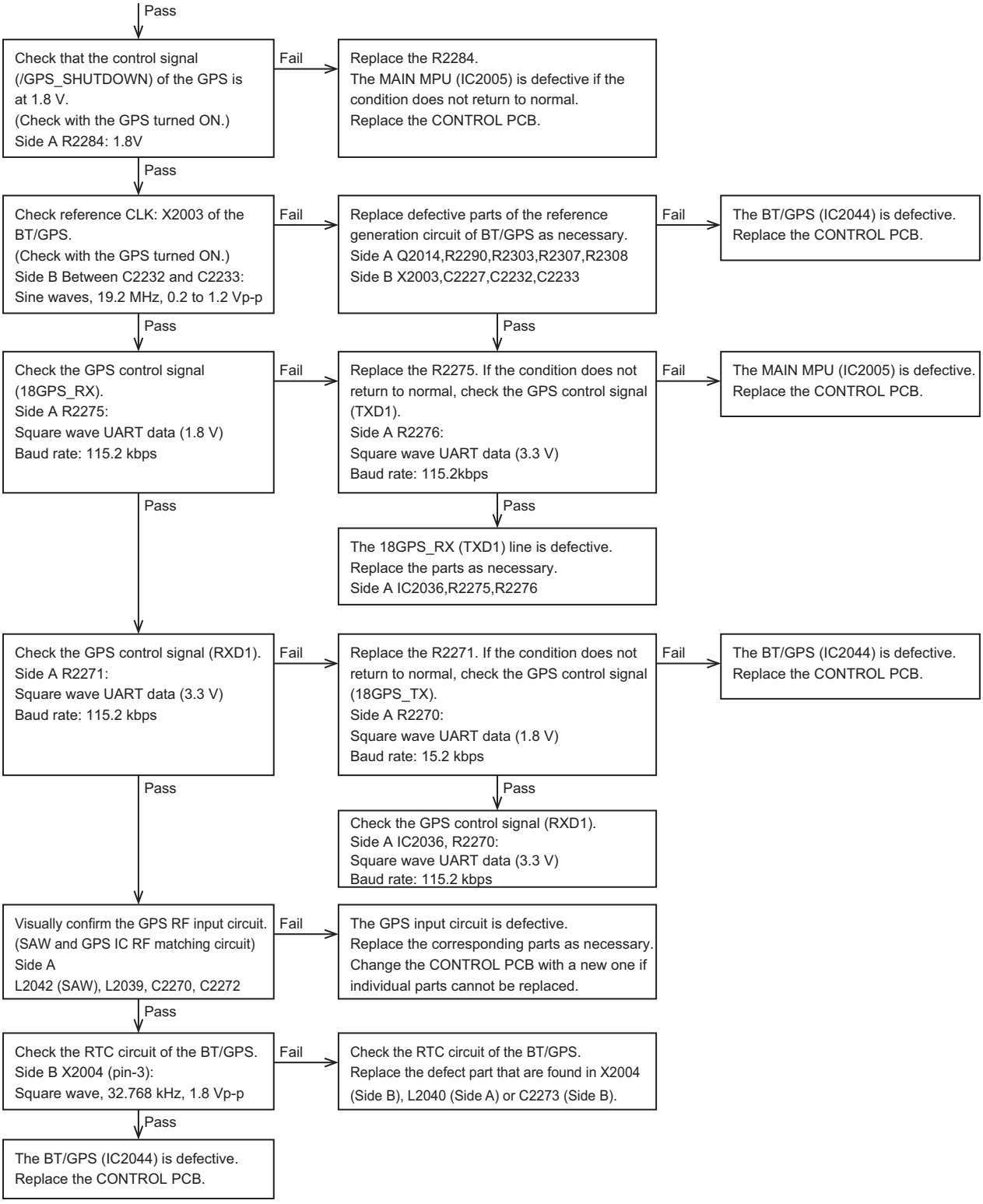
Checking the CONTROL PCB

Make a visual check on the matching circuit of the antenna.
Side A R2323,D2019,C2278
- Fail → Replace any defective parts.
- Pass

Check that the power supply voltage to the 33BT is 3.3 V.
Side A L2032, L2049: 3.3V
- Fail → Replace defective parts of the 33BT circuit as necessary.
  Side A IC2041 (33BT AVR)
  Side A L2032,L2049
  Side A C2218,C2230,C2293
  Side B C2245,C2246,C2267,C2285
  - Fail → The BT/GPS (IC2044) is defective. Replace the CONTROL PCB.
- Pass

Check that the power supply voltage to the 18BT is 1.8 V.
Side A L2033, L2048: 1.8V
- Fail → Replace defective parts of the 18BT circuit as necessary.
  Side A IC2038 (18BT AVR)
  Side A L2033,L2048
  Side A C2217,C2223,C2237
  Side B C2242,C2265,C2284,C2294
  - Fail → The BT/GPS (IC2044) is defective. Replace the CONTROL PCB.
- Pass

Check that the power supply voltage of the 30GPS is 3.0 V.
(Check with the GPS turned ON.)
Side B L2038: 3.0V
- Fail → Replace defective parts of the 30GPS circuit as necessary
  Side A IC2042 (30GPS AVR)
  Side A L2038,C2258,C2261
  Side B C2231
  GPS module: T9A-0129-**
- Pass



Descriptions of signal names

(1) 33BT: BT/GPS IC 3.3V power supply
(2) 18BT: BT/GPS IC 1.8V power supply
(3) TXD1:BT/GPS serial data line (UART)(IC2005(MAIN MPU) → IC2036(Level Shift))
(4) RXD1:BT/GPS serial data line (UART)(IC2036(Level Shift) → IC2005(MAIN MPU))
(5) 18GPS_RX:Serial data line (UART)(IC2036(Level Shift) → IC2044(BT/GPS IC))
(6) 18GPS_TX:Serial data line (UART)(IC2044(BT/GPS IC) → IC2036(Level Shift))
(7) /GPS_SHUTDOWN:GPS active control (IC2005(MAIN MPU) → IC2044(BT/GPS IC)) High Active, Low Reset

5.4 Failure diagnosis of the PLL section

■Overview:

The PLL IC is mounted inside the E700 (non-removable Board Level Shield) of the MAIN UNIT 2/5 (TX-RX PCB) Side B and cannot be replaced. When the PLL is unlocked, use this procedure to determine if the PLL IC is the cause.

■PLL IC

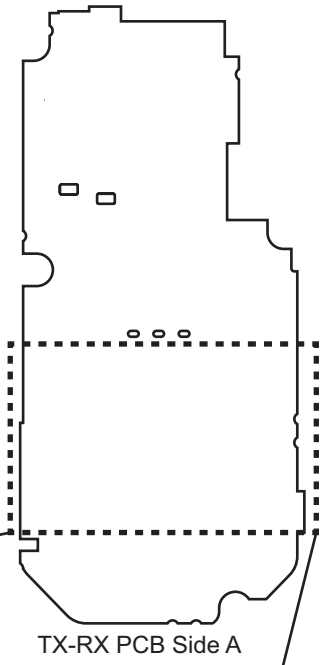
Band A PLL IC: IC800, Band B PLL IC: IC700

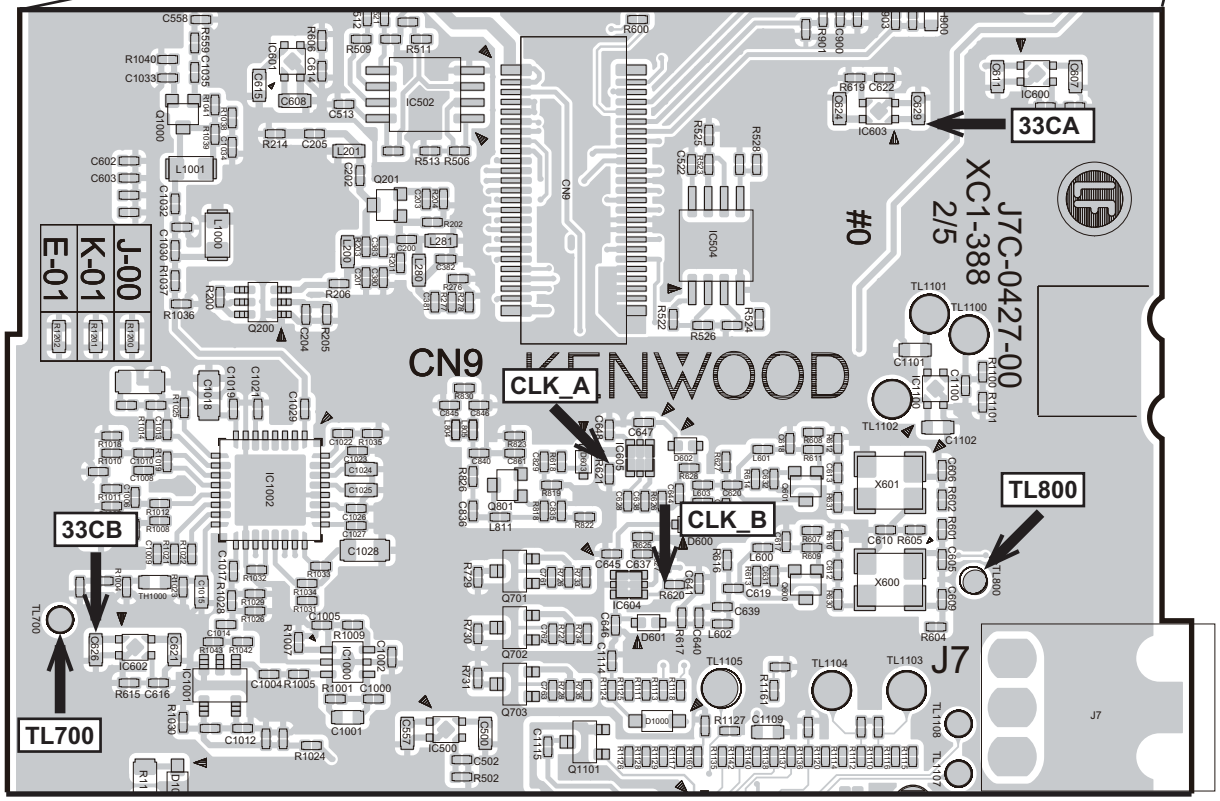
Inspection procedure

Band A
- Check the voltage of **33CA** is around 3.3V.
  Check point: Side A C629
- **CLK_A** signal can be observed at 1Vp-p or more.
  Check point: Side A R621
- Check that the voltage of **TL700** (Side A) is within 0.3V to 3V.
  (e.g.) Band A 144.000MHz RX: 1.5V

Band B
- Check the voltage of **33CB** is around 3.3V.
  Check point: Side A C626
- **CLK_B** signal can be observed at 1Vp-p or more.
  Check point: Side A R620
- Check that the voltage of **TL800** (Side A) is within 0.3V to 3V.
  (e.g.) Band B 430.000MHz RX: 1.3V

When an abnormal value is confirmed, there may be a problem with the PLL IC (IC700, IC800) or peripheral parts inside the Board Level Shield.





PRECAUTIONS ON SCHEMATIC DIAGRAMS

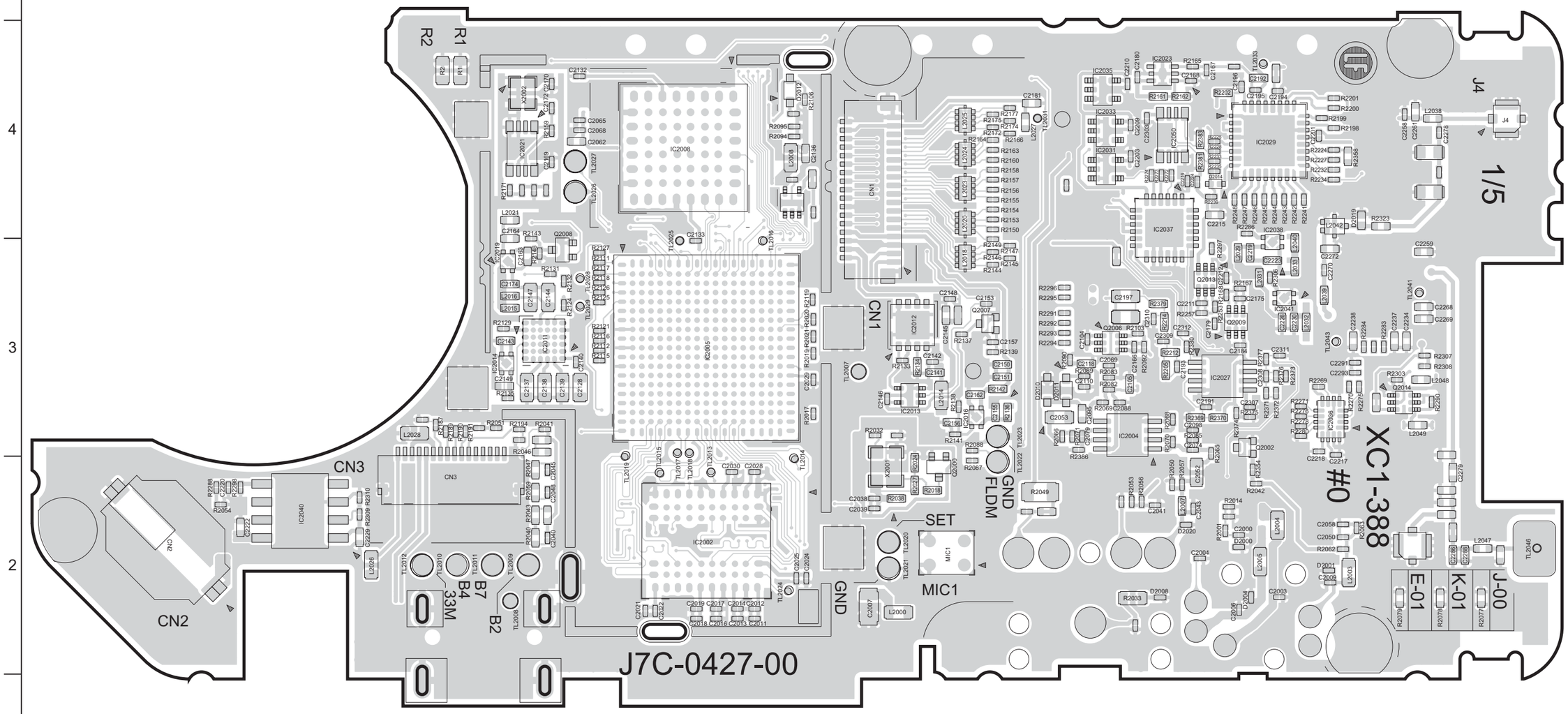
* Due to the improvement in performance, some part numbers shown in the circuit diagrams may not agree with those indicated in the Parts List.
* The parts numbers, values and rated voltage etc. in the Schematic Diagrams are for reference only.
* Since the circuit diagrams are standard ones, the circuits and circuit constants may be subject to change for improvement without any notice.
* The parts of the symbol with " * " may vary depending on model. Refer to the parts list for details.
* The parts of the symbol with " $ " are unmounted parts.

2-1 (No.RA096<Rev.001>)

PRINTED CIRCUIT BOARD

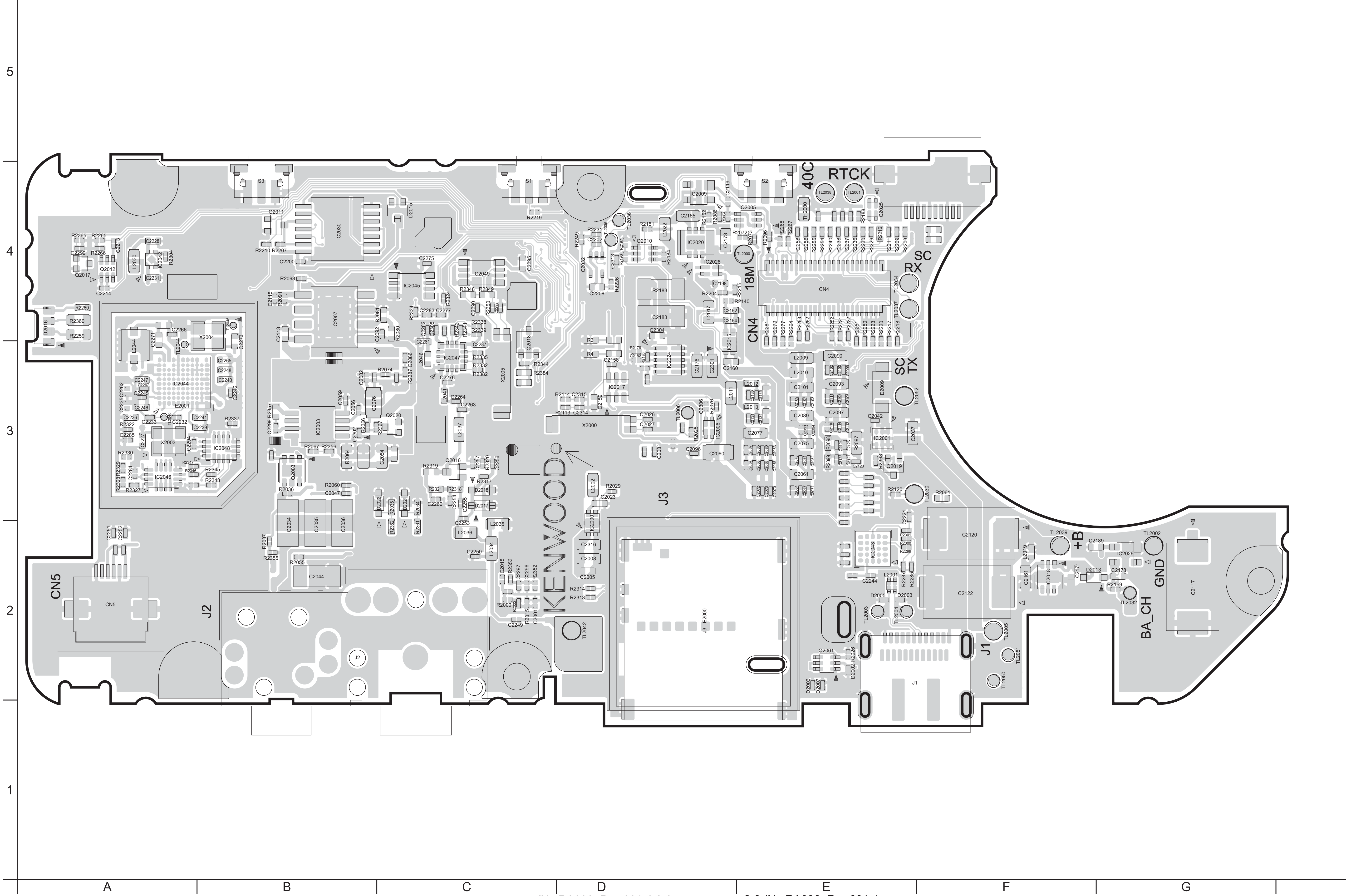
■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 1/5: CONTROL

--- Component side view/Side A (J7C-0427-00) ---



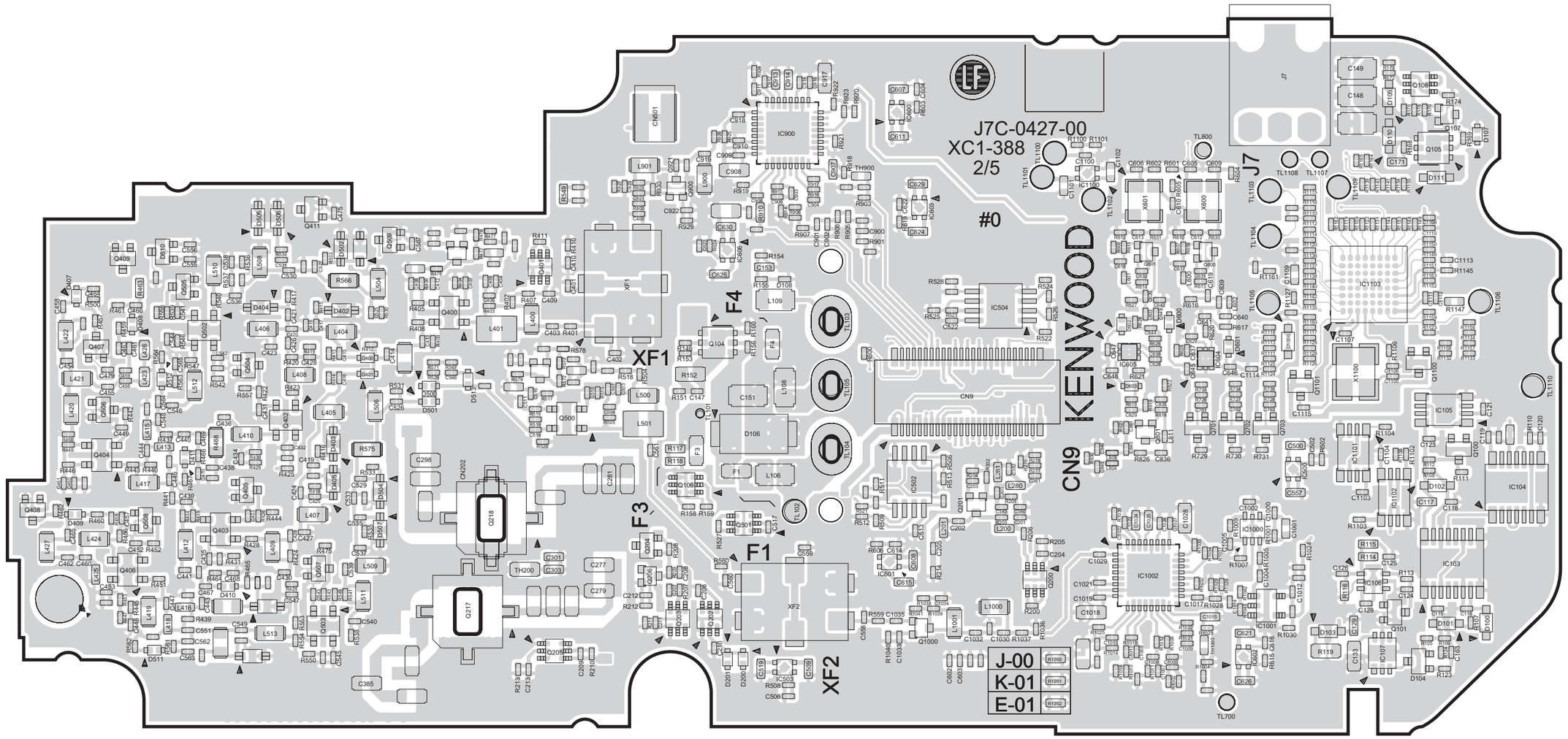
■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 1/5: CONTROL

--- Foil side view/Side B (J7C-0427-00) ---



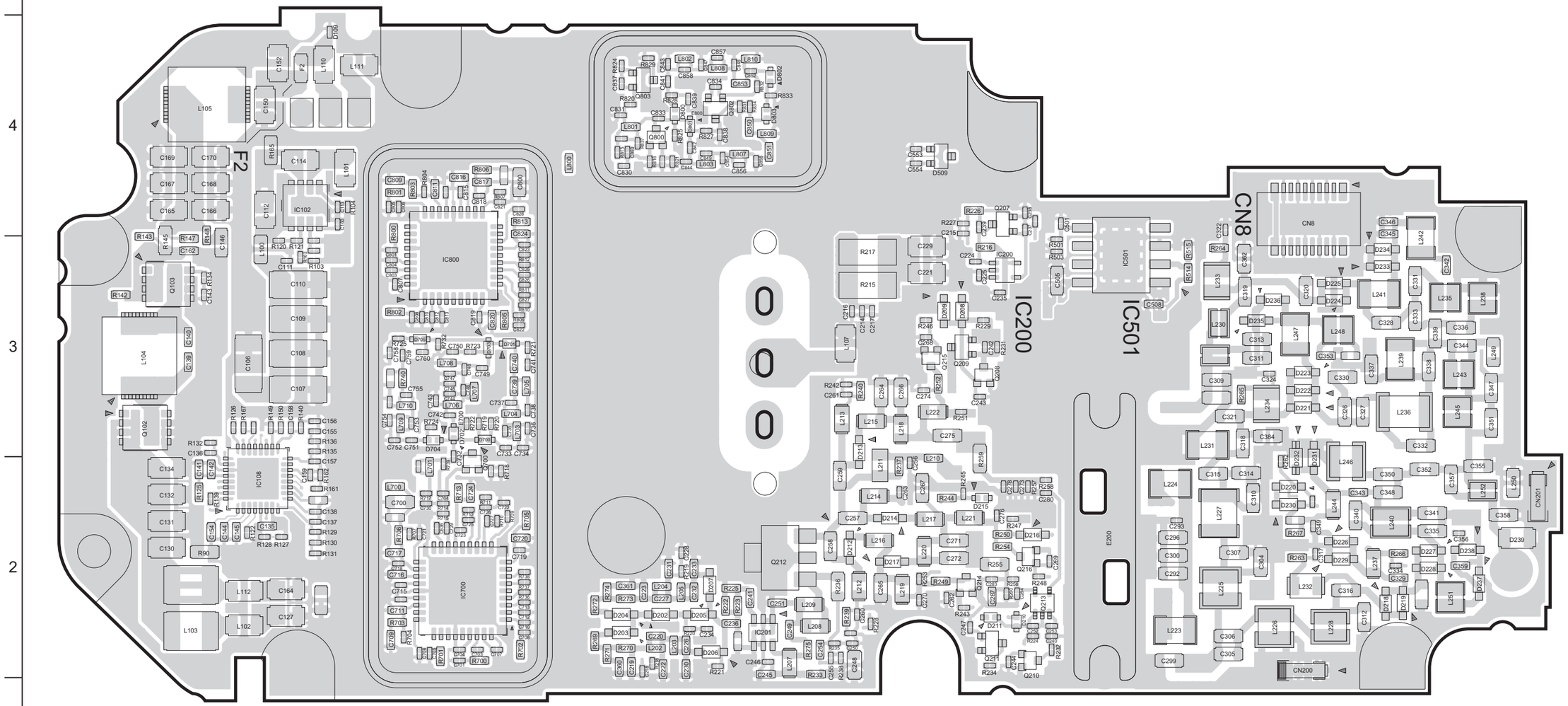
■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 2/5: TX-RX

--- Component side view/Side A (J7C-0427-00) ---



■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 2/5: TX-RX

--- Foil side view/Side B (J7C-0427-00) ---



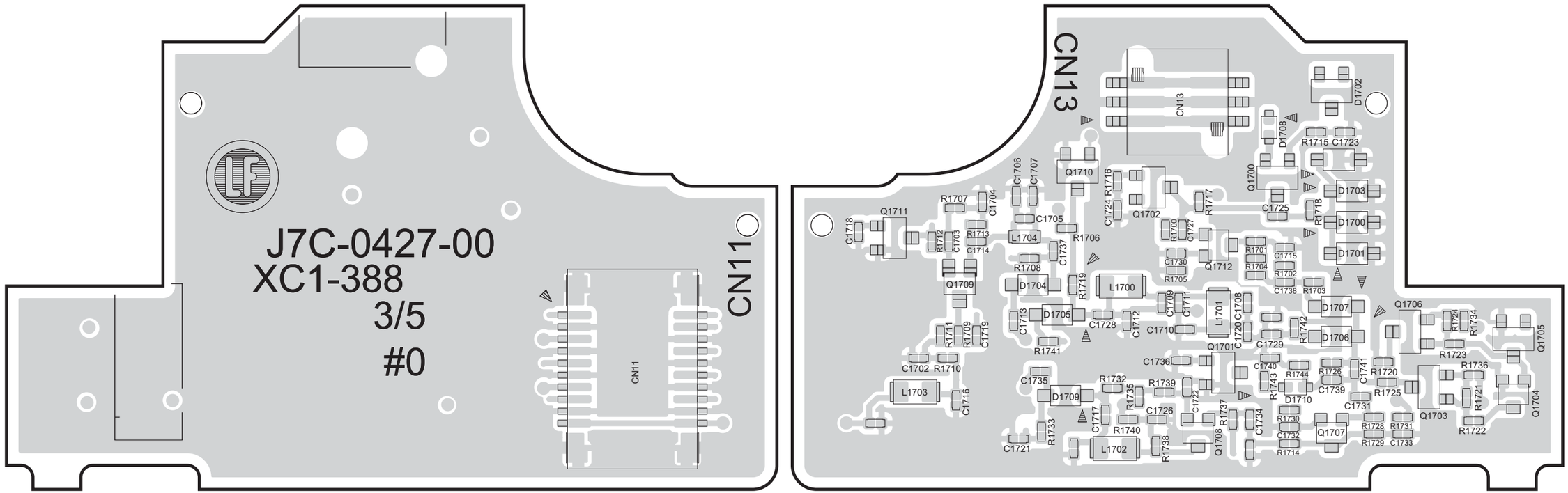
A | B | C | D | E | F | G

(No.RA096<Rev.001>) 2-5 2-5 (No.RA096<Rev.001>)

■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 3/5: MW/SW

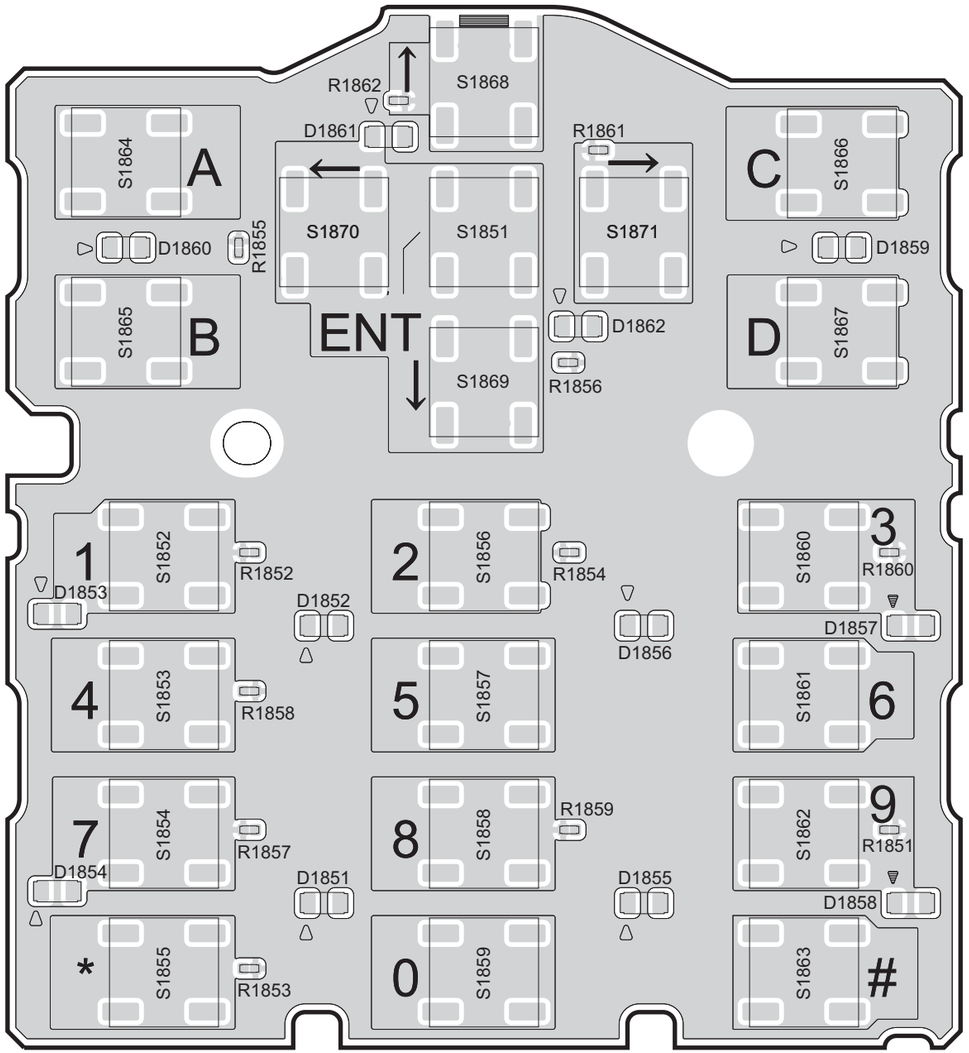
--- Component side view/Side A (J7C-0427-00) ---

--- Foil side view/Side B (J7C-0427-00) ---

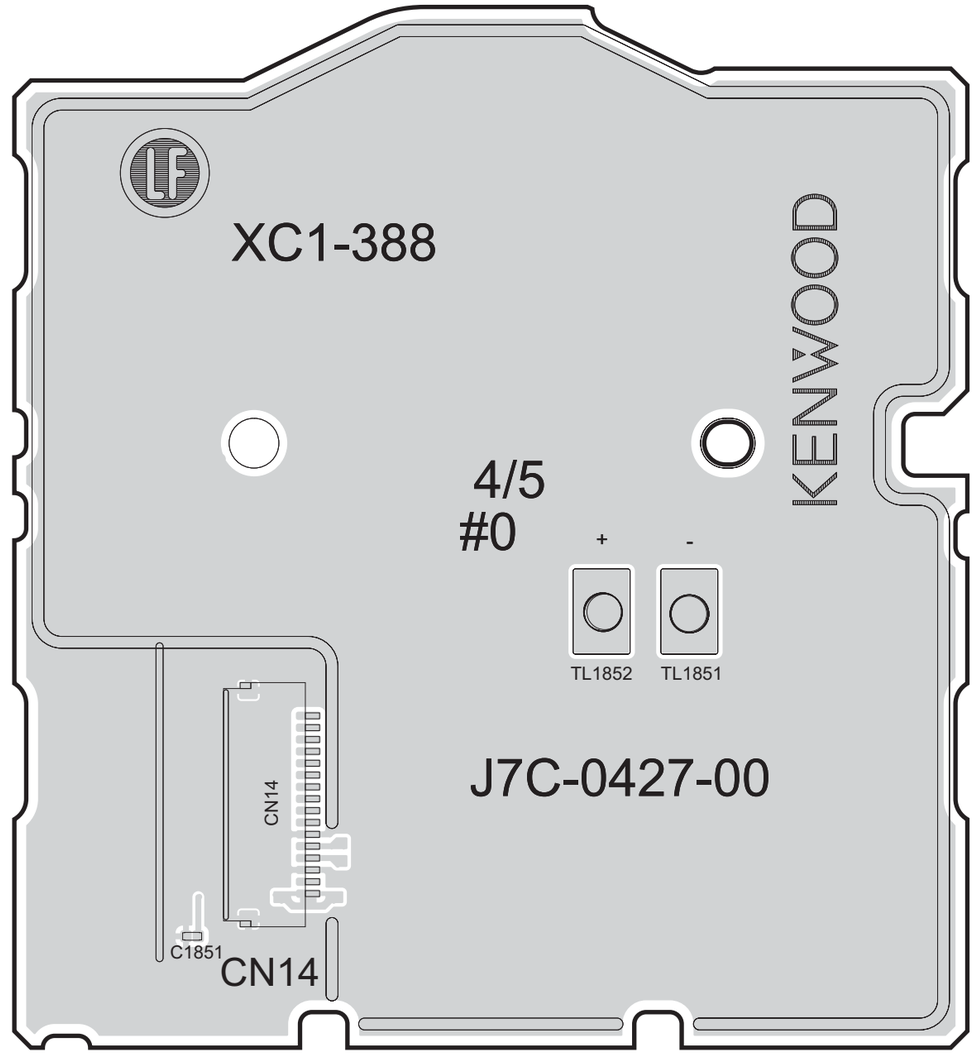


■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 4/5: KEY

--- Component side view/Side A (J7C-0427-00) ---

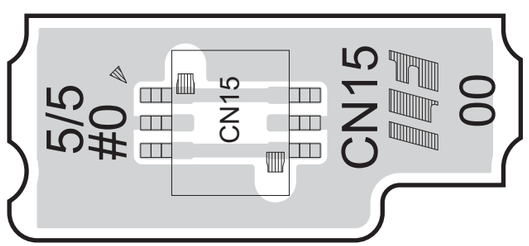


--- Foil side view/Side B (J7C-0427-00) ---

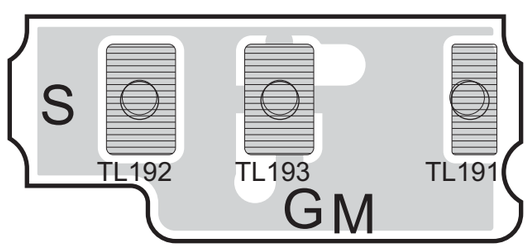


■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 5/5: BARANT

--- Component side view/Side A (J7C-0427-00) ---

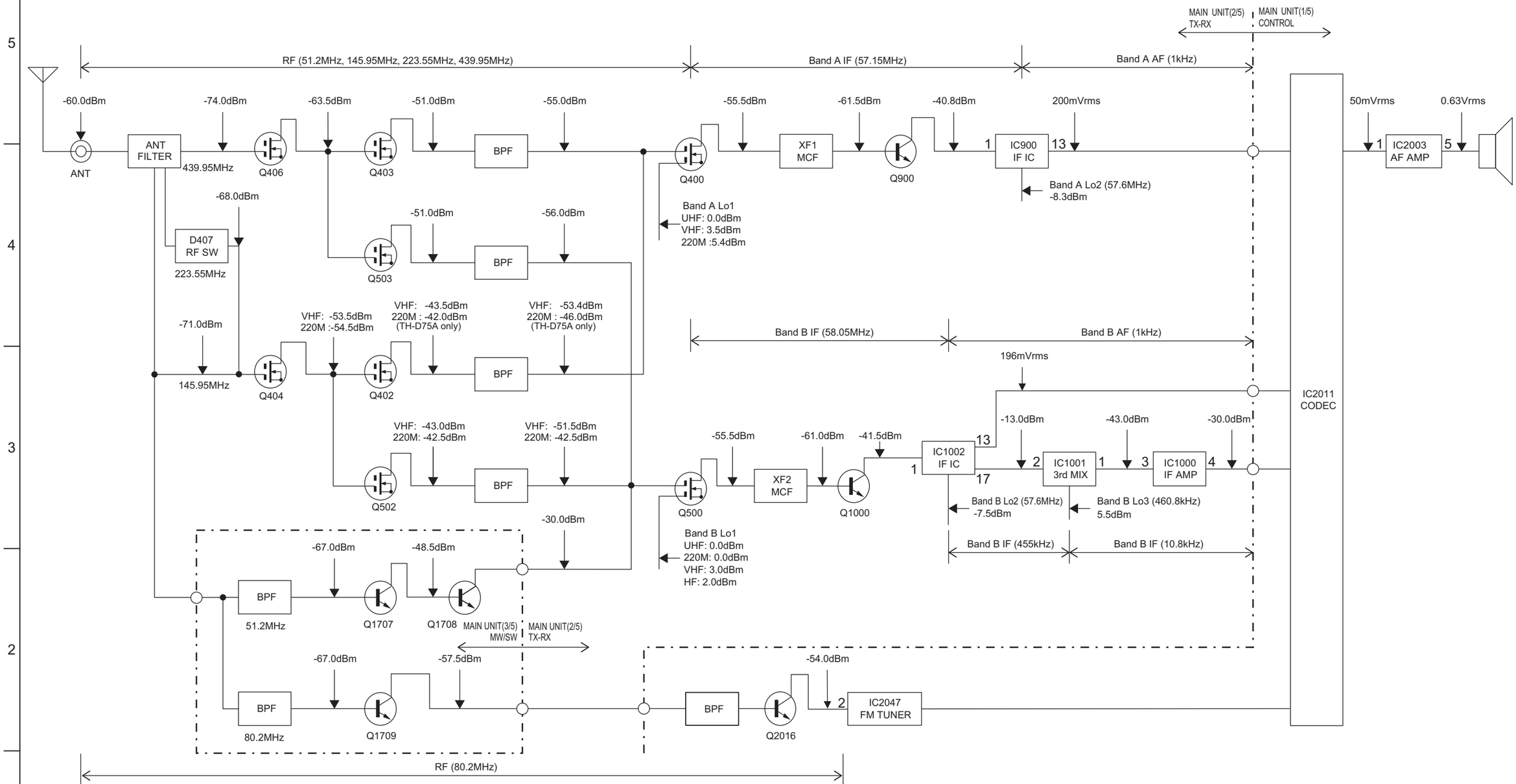


--- Foil side view/Side B (J7C-0427-00) ---



LEVEL DIAGRAM

■ Receiver Section

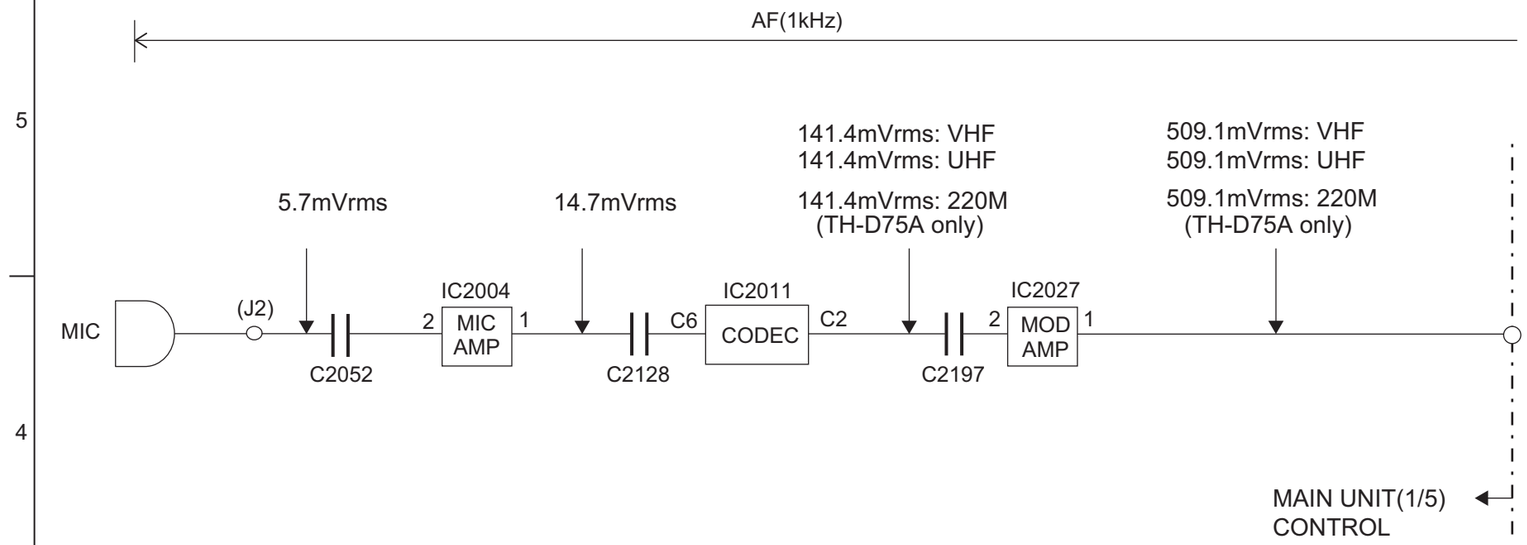


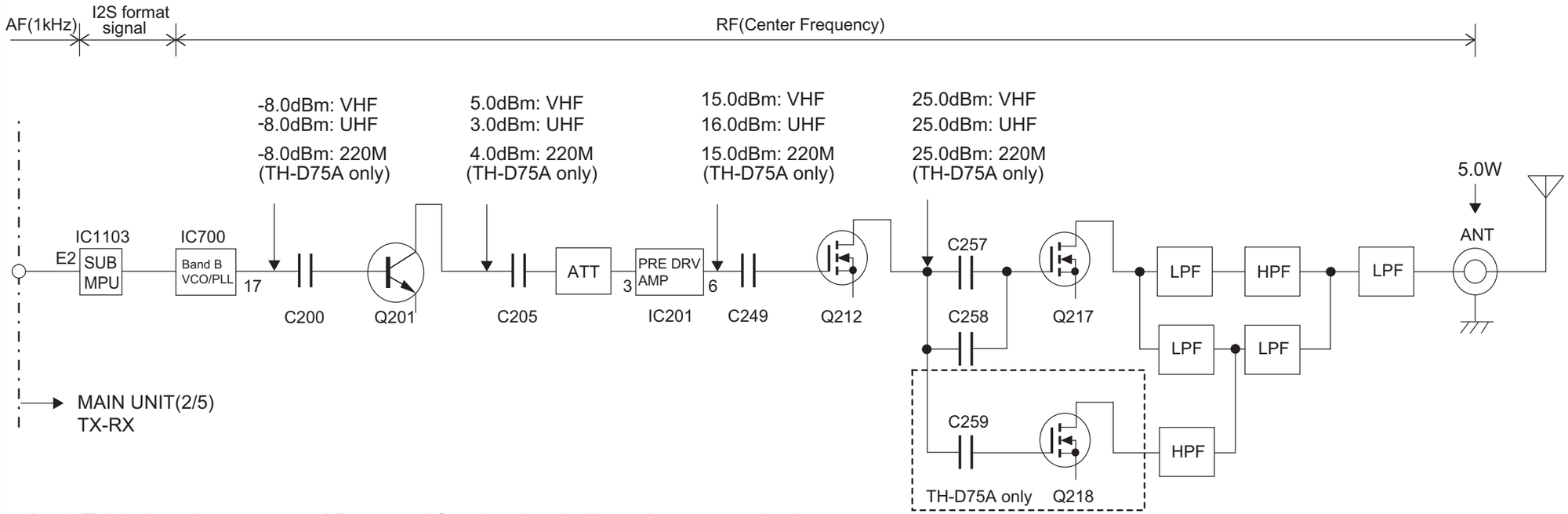
Note1: The RF levels at each point, were measured with a spectrum analyzer through a 0.1uF capacitor. When the –60dBm standard signal generator by a no modulation from ANT connecter.

Note2: The IF levels were measured with 145.95MHz of RX frequency.

Note3: The AF levels were measured with an oscilloscope when 145.95MHz of RX frequency, -60dBm standard signal generator signal modulated by a 1kHz modulation frequency and a 3kHz deviation was input and the AF output was adjusted to 0.63V/8Ω by the AF VOL.

■ Transmitter Section





Note1: This is the value measured while removed from the chassis. Use a short transmission burst.
In the worst case scenario, some parts will be damaged. During this test, some parts will reach high temperature.

Note2: For the 1kHz MOD to become 8mVrms, set the MIC input terminal to AG.

Note3: Set the transmission output to Hi.

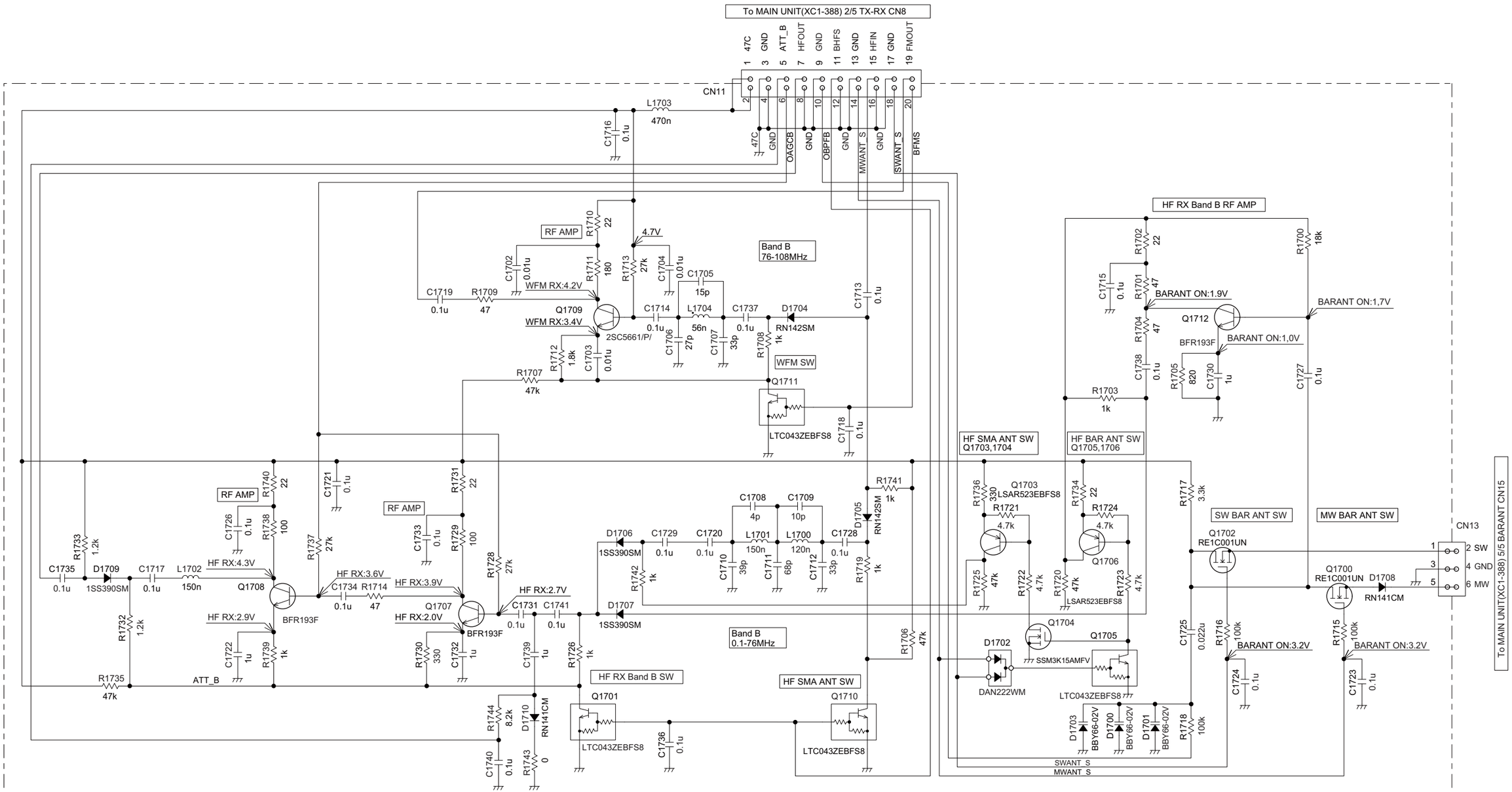
Note4: Connect a 50Ω terminal load or power meter to the ANT terminal.

Note5: RF levels for each point, other than for the ANT terminal, are measured at 1000pF with a spectrum analyzer through a capacitor.

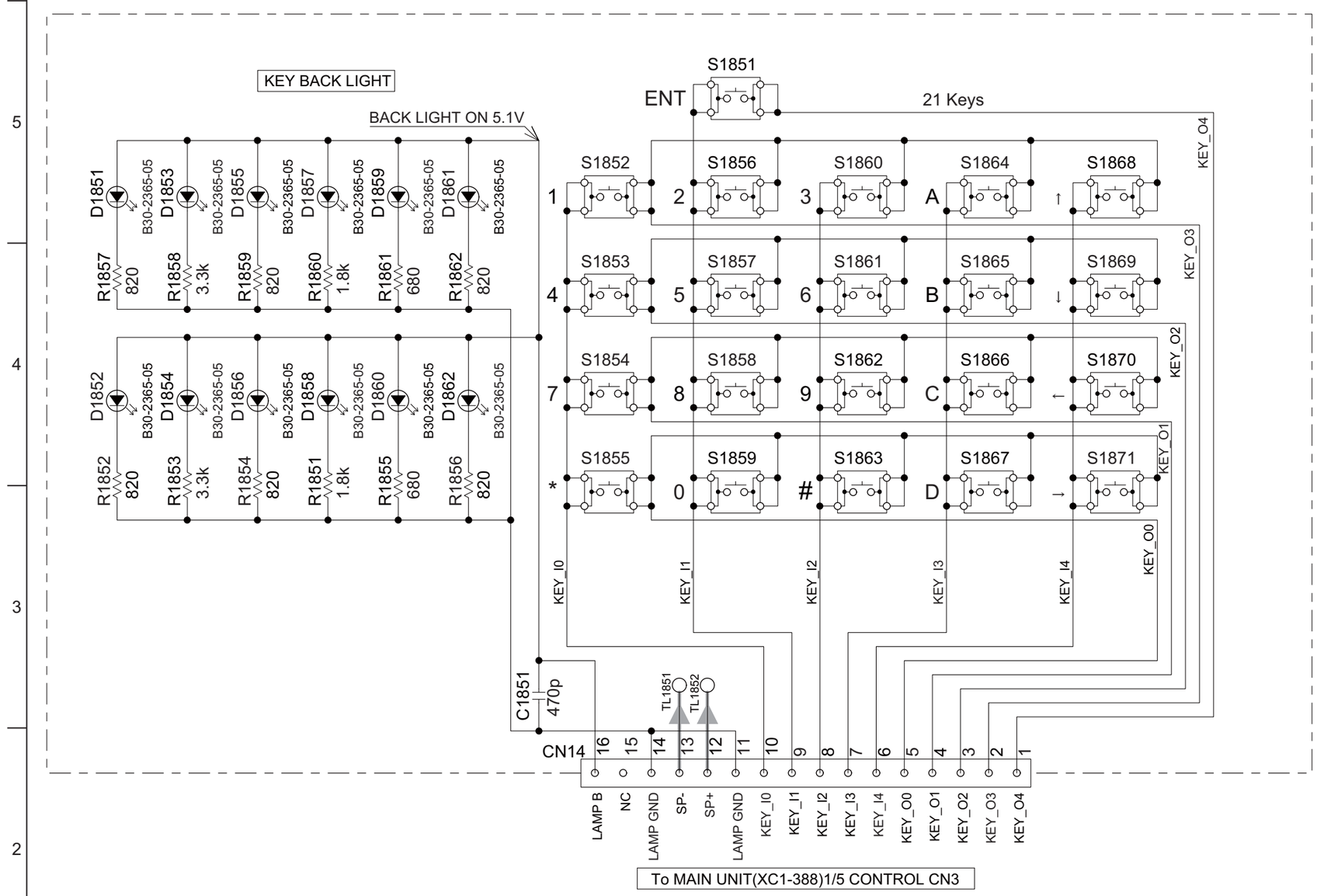
Note6: Measure the AF level and Data level values with an oscilloscope.

SCHEMATIC DIAGRAM

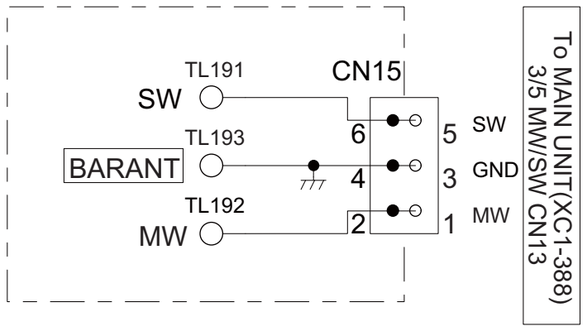
■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 3/5: MW/SW



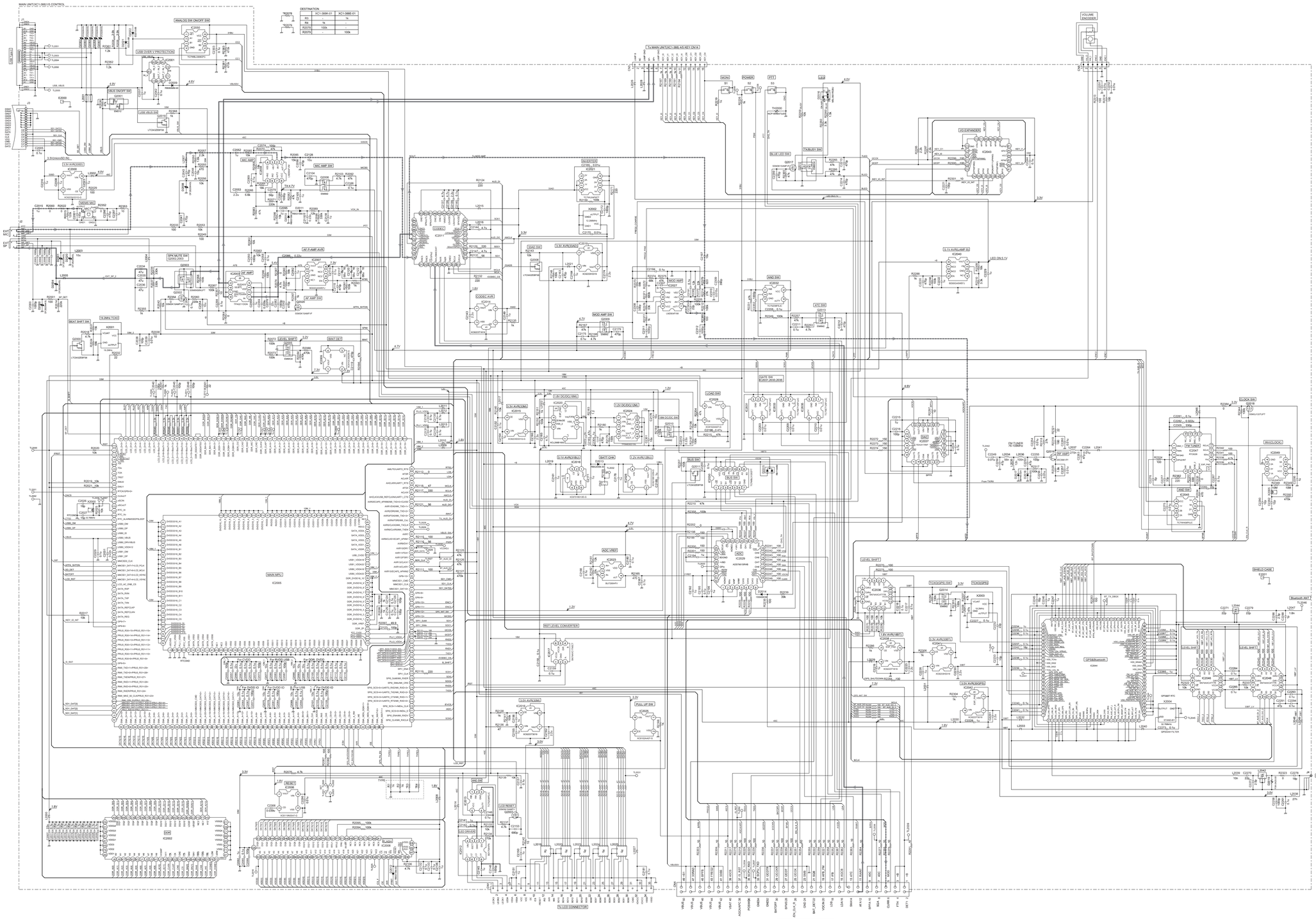
■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 4/5: KEY



■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 5/5: BARANT



■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 1/5: CONTROL



■ MAIN UNIT (XC1-388K-01 (TH-D75A K type), XC1-388E-01 (TH-D75E E, T type)) 2/5: TX-RX

DESTINATION

	C209	C213	C218	C219	C220	C222	C226	C230	C264	C266	C268	C273	C274	C275	C278	C280	C281	C293	C298	C309	C311	C313	C319	C320	C322
XC1-388K-01	1000p	1000p	1000p	8p	4p	18p	4p	10p	82p	12p	1000p	0.01u	1000p	1000p	470p	470p	82p	470p	33p	100p	5p	33p	1000p	18p	1000p
XC1-388E-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	C360	C362	C438	C456	L202	L203	L215	L218	L222	L224	L230	L233	R210	R213	R218	R240	R242	R246	R251	R252	R257	R258	R259	R264	R269
XC1-388K-01	1000p	39p	8p	22p	33n	33n	8.2n	6.8n	390n	45.5n	12n	2.2u	47k	100k	2.2k	220	100k	4.7k	100k	100	82k	39k	10	150	10
XC1-388E-01	-	-	-	18p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	R270	R271	R468	R1201	R1202	CN202	D203	D206	D213	D224	D225	D233	D234	Q205	Q215	Q218	Q411
XC1-388K-01	10	120	0	100k	-	-	1SS390SM	1SS390SM	RN142SM	RN142SM	RN142SM	RN142SM	RN142SM	EM6M2	SSM3K15AMFV	2SK3476-F	LTC043ZEBFS8
XC1-388E-01	-	-	-	-	100k	E2D-0058-00	-	-	-	-	-	-	-	-	-	-	-

INTERCONNECTION DIAGRAM

MAIN UNIT (XC1-388) 4/5 KEY

PARALLEL CORD

SPEAKER

VOLUME ENCODER

CN14: 16 LAMP B, 15 NC, 14 LAMP GND, 13 SP-, 12 SP+, 11 LAMP GND, 10 KEY_I0, 9 KEY_I1, 8 KEY_I2, 7 KEY_I3, 6 KEY_I4, 5 KEY_O0, 4 KEY_O1, 3 KEY_O2, 2 KEY_O3, 1 KEY_O4

16-pin FFC

CN3: 1 LAMP B, 2 NC, 3 LAMP GND, 4 SP-, 5 SP+, 6 LAMP GND, 7 KEY_I0, 8 KEY_I1, 9 KEY_I2, 10 KEY_I3, 11 KEY_I4, 12 KEY_O0, 13 KEY_O1, 14 KEY_O2, 15 KEY_O3, 16 KEY_O4

6-pin FPC

CN5: 1 GND, 2 Vol_O, 3 Vol_I, 4 ENC2, 5 GND, 6 ENC1

50-pin FPC

CN4			CN9
	1 +B	+B 1	
DET1	2		2 DET1
	3 +B	+B 3	
FTH	4		4 FTH
	5 MOD	MOD 5	
CURR	6		6 CURR
	7 40C	40C 7	
SQA	8		8 SQA
	9 40C	40C 9	
BPFA	10		10 BPFA
	11 RAINT	RAINT 11	
AFA	12		12 AFA
	13 47C	47C 13	
SMA	14		14 SMA
	15 AGCB	AGCB 15	
LDA	16		16 LDA
	17 IFB	IFB 17	
LDB	18		18 LDB
	19 AFB_FM	AFB_FM 19	
VDCIN	20		20 VDCIN
	21 SQB	SQB 21	
BAT_DET	22		22 BAT_DET
	23 SMB	SMB 23	
GND	24		24 GND
	25 I2CCK	I2CCK 25	
/BN_CLK_R	26		26 /EN_CLK_R
	27 I2CDT	I2CDT 27	
BFMS	28		28 BFMS
	29 I2CCKR	I2CCKR 29	
BATOFF	30		30 BATOFF
	31 I2CDTR	I2CDTR 31	
GND	32		32 GND
	33 SCPU_TXD	SCPU_TXD 33	
GND	34		34 GND
	35 SCPU_RXD	SCPU_RXD 35	
POSWO	36		36 PO_SWO
	37 /S_RST	/S_RST 37	
AGCA/APC	38		38 AGCA/APC
	39 40CS	40CS 39	
VBAT	40		40 VBAT
	41 33SS	33SS 41	
VBUS	42		42 VBUSIN
	43 FREQ2	FREQ2 43	
VBUS	44		44 VBUSIN
	45 BPFB	BPFB 45	
VBUS	46		46 VBUSIN
	47 33RAD	33RAD 47	
VBUS	48		48 VBUSIN
	49 +B1	+B1 49	
VBUS	50		50 VBUSIN

MAIN UNIT (XC1-388) 2/5 TX-RX

USB Type-C

J1: 28 GND4, 27 GND3, B1 GND, A12 GND, B2 TX2+, A11 RX2+, B3 TX2-, A10 RX2-, B4 VBUS, A9 VBUS, B5 CC2, A8 SBU1, B6 D+, A7 D-, B7 D-, A6 D+, B8 SBU2, A5 CC1, B9 VBUS, A4 VBUS, B10 RX1-, A3 TX1-, B11 RX1+, A2 TX1+, B12 GND, A1 GND, 25 GND1, 26 GND2

J7: DC_IN 1, 3, GND 2 — DC IN

J3: 17 DSW1, 16 DSW2, 15 GND7, 14 GND6, 13 GND5, 12 GND4, 11 GND3, 10 GND2, 9 GND1, 8 DAT1, 7 DAT0, 6 VSS, 5 CLK, 4 VDD, 3 CMD, 2 DAT3, 1 DAT2 — microSD

MAIN UNIT (XC1-388) 1/5 CONTROL

20-pin B to B Connector

CN8		CN11
47C 20	19 47C — 47C 2	1 47C
GND 18	17 GND — GND 4	3 GND
ATT_B 16	15 OAGCB — OAGCB 6	5 ATT_B
HFOUT 14	13 GND — GND 8	7 HFOUT
GND 12	11 OBPFB — OBPFB 10	9 GND
BHFS 10	9 GND — GND 12	11 BHFS
GND 8	7 MWANT_S — MWANT_S 14	13 GND
HFIN 6	5 GND — GND 16	15 HFIN
GND 4	3 SWANT_S — SWANT_S 18	17 GND
FMOUT 2	1 BFMS — BFMS 20	19 FMOUT

3-pin B to B Connector

CN13: SW 1, GND 3, MW 5

CN15: 5 SW, 3 GND, 1 MW

BARANT

MAIN UNIT (XC1-388) 5/5 BARANT

TL103 S, TL104 +, TL105 - — BATT

ANT

MAIN UNIT (XC1-388) 3/5 MW/SW

EXT MIC

J2: 6 PTT, 7 MIC, 8 INT_MIC, 9 MIC_DET, 10 33M

EXT SP

J2: 1 SPG, 2 REM, 3 SP_DET, 4 INT_SP, 5 SP

GPS

J4 GPS

Bluetooth

TL2046 BT

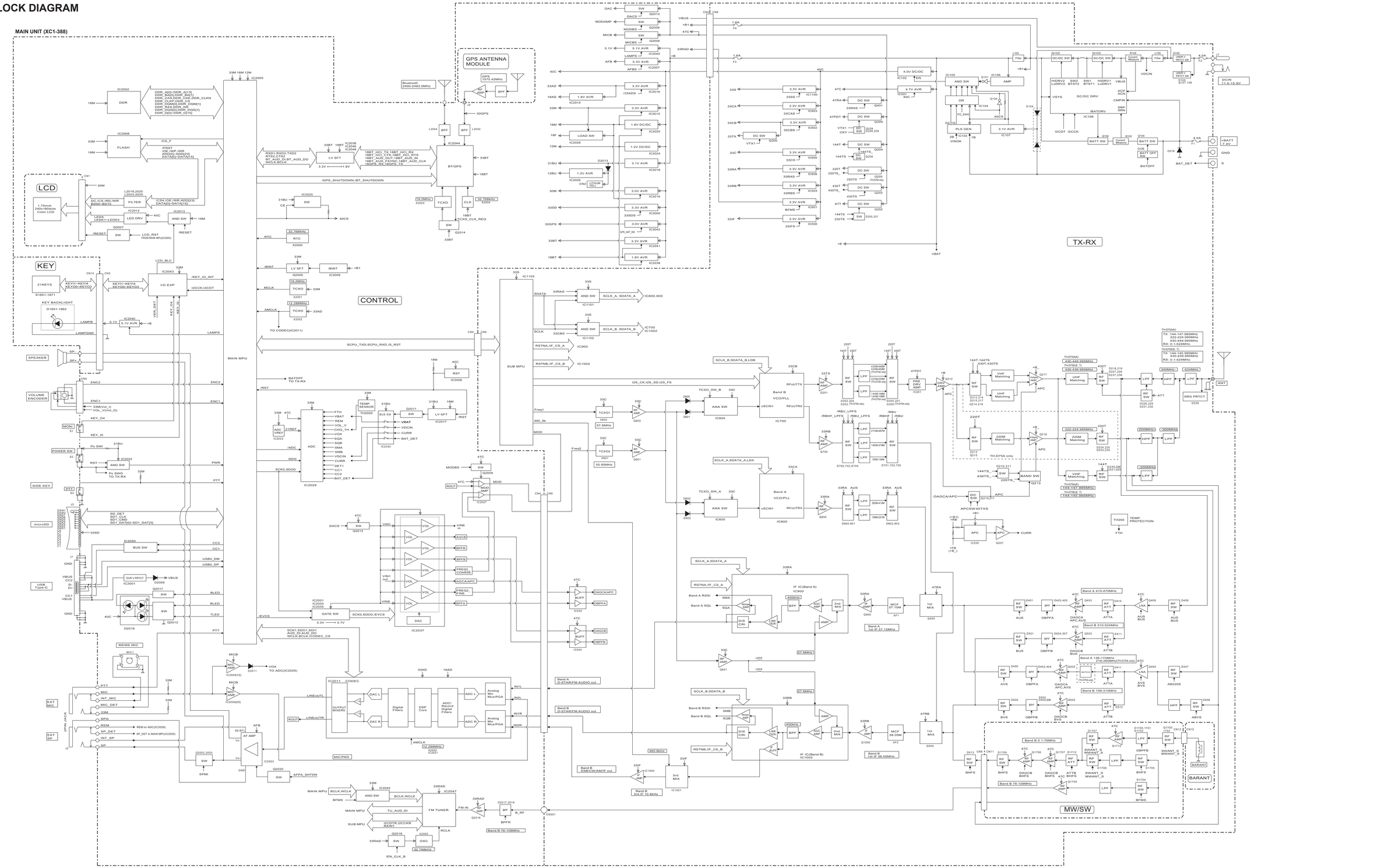
FM TUNER CN501

CN1: 1 LEDK3, 2 LEDK2, 3 LEDK1, 4 LEDA, 5 VSSA, 6 VSSA, 7 VCC, 8 VCC, 9 DC, 10 /CS, 11 /RESET, 12 /RD, 13 /WR, 14 IMO, 15 BD15, 16 BD14, 17 BD13, 18 BD12, 19 BD11, 20 BD10, 21 BD09, 22 BD08, 23 BD07, 24 BD06, 25 BD05, 26 BD04, 27 BD03, 28 BD02, 29 BD01, 30 BD00, 31 CABC, 32 IOVCC, 33 IOVCC, 34 VSSD, 35 VSSD

LCD

BLOCK DIAGRAM

MAIN UNIT (XC1-388)



PARTS LIST

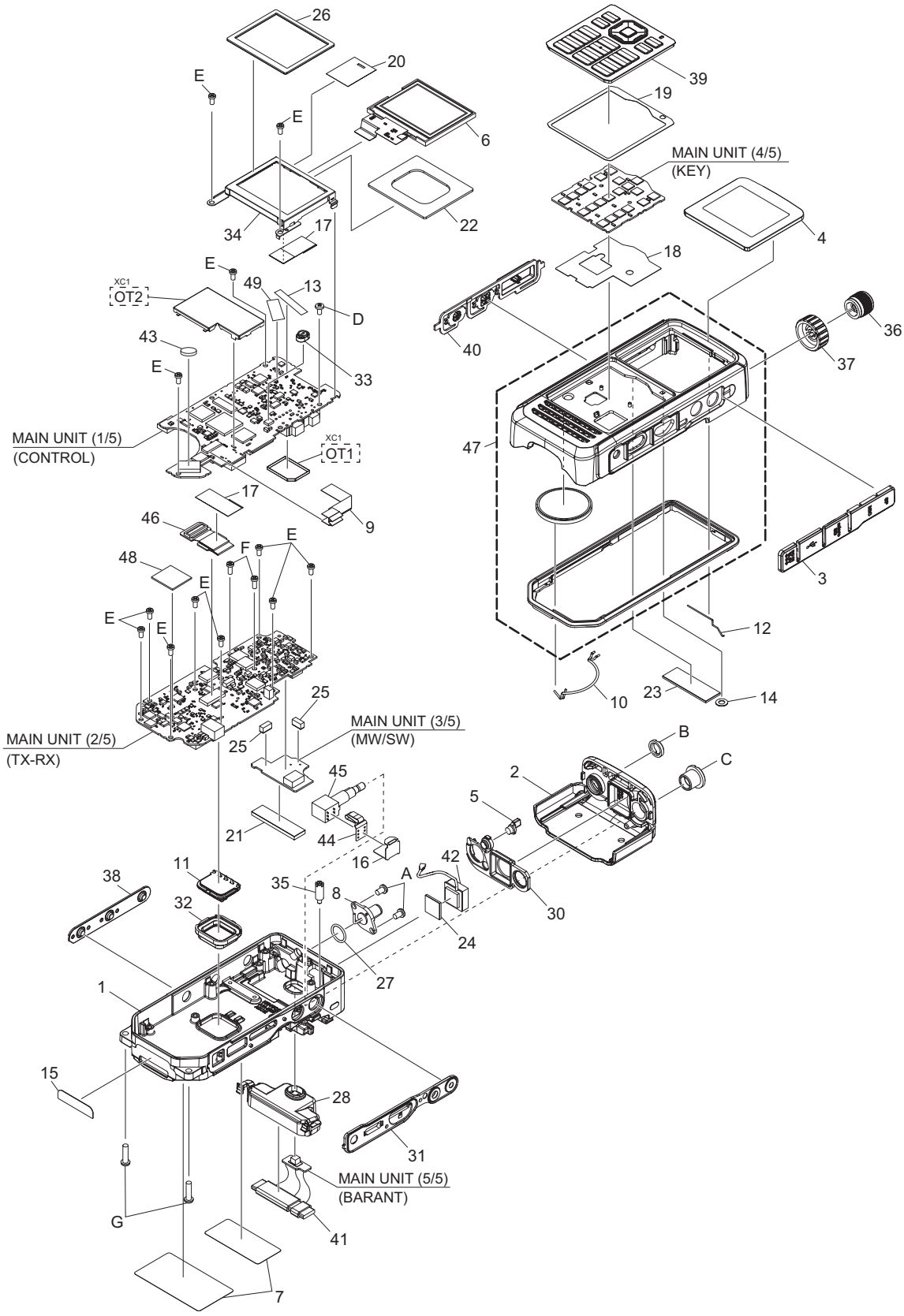
[TH-D75A, TH-D75E]

* SAFETY PRECAUTION
  Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.
* BEWARE OF BOGUS PARTS
  Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine parts be used.
* (x_) in a description column shows the number of the used part.

- Contents -

Exploded view of general assembly and parts list

Block No.M1MM



General assembly

Block No. [M][1][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	A1A-0205-00	CHASSIS		
2	A6C-0199-00	PANEL	TOP	
3	B0K-0148-10	CAP	SIDE CAP	
4	B1A-0135-00	FRONT GLASS		
5	B1B-0262-00	ILL.GUIDE	TX/BUSY	
6	B38-0960-25	LCD ASSY		
7	---------	NAME PLATE		
8	E0E-0027-10	C.RECEPTACLE-SM		
9	E3F-0139-20	FLAT CABLE	KEY-CONT PCB	
10	E37-0810-45	PARALLEL CORD	SPEAKER	
11	E7C-0040-00	TERMINAL BLOCK	BATTERY TERMINAL	
12	G0K-0011-00	BAR SPRING	BT ANT	
13	G1A-0046-00	FIBROUS SHEET	GPS CABLE	
14	G1A-0057-00	FIBROUS SHEET	MIC	
15	G1B-0172-00	SHEET	CHASSIS BOTTOM	
16	G1B-0179-00	SHEET	VOL/ENC	
17	G1B-0217-10	SHEET	50PIN FPC/LCD HOLDER(x2)	
18	G1B-0511-00	SHEET	KEY PCB	
19	G1B-0515-00	SHEET	FOR KEY TOP	
20	G1B-0557-00	SHEET	LCD BACK SIDE	
21	G1D-0132-00	CUSHION	B1F PCB REAR	
22	G1D-0134-00	CUSHION	LCD REAR	
23	G1D-0135-00	CUSHION	LCD FPC CHIP	
24	G1D-0167-00	CUSHION	GPS-ANT	
25	G1D-0539-00	CUSHION	B1F PCB FRONT(x2)	
26	G1D-0542-00	CUSHION	LCD FRONT	
27	G53-1603-04	PACKING	ANT_RECEPTACLE	
28	G5D-0314-00	RUBBER SEAL	BAR ANTENNA	
30	G5D-0323-00	RUBBER SEAL	TOP	
31	G5D-0324-00	RUBBER SEAL	SP/MIC/USB	
32	G5D-0325-00	RUBBER SEAL	TEMYRINAL BLOCK	
33	G5D-0326-00	RUBBER SEAL	MIC	
34	J2B-0201-10	MOUNTING	LCD Note 1	
35	J3C-0042-00	CYLINDRIC BOSS	BOTTOM OF VOL	
36	K2K-0194-00	KNOB	ENC/INNER	
37	K2K-0195-00	KNOB	VOL/OUTER	
38	K2K-0197-10	BUTTON KNOB	PTT RUBBER	
39	K2K-0666-10	KEY TOP	SHEET KEY	
40	K2K-0667-00	KNOB	PTT OUTER	
41	T9A-0035-00	BAR ANTENNA	FM BAR ANT	
42	T9A-0129-00	ANTENNA ELEMENT	GPS-ANT WITH CABLE	
43	W09-0971-05	LITHIUM CELL	CONT PCB	
44	J82-0114-25	FPC	FOR VOL	
45	R3K-0001-20	V RESISTOR ETC	VOL/ENC Note 1	
46	X42-3510-10	CORD ASSY	50PIN FPC	
47	XC2-068J-00S	F.PANEL ASSY	(SERVICE) Note 1	
48	G10-1348-04	FIBROUS SHEET	SP BACK SIDE	
49	G1D-0231-00	CUSHION		
A	N09-6554-05	PAN HEAD SCREW	RECEPTACLE(x2)	
B	N14-0573-24	CIRCULAR NUT	RECEPTACLE	
C	N1X-0017-00	CIRCULAR NUT	VOL/ENC	
D	N35-2004-43	BI.HEAD M.SCREW	PCB BOSS SCREW	
E	N79-2040-48	P.HEAD T.SCREW	PCB(x12)	
F	N79-2050-43	P.HEAD T.SCREW	PCB FET(x2)	
G	N80-2610-43	P.HEAD T.SCREW	F-CASE(x2)	
-	XCA-099K-01S	MAIN UNIT	SERVICE UNIT Note 1	D75AK
-	XCA-099E-01S	MAIN UNIT	SERVICE UNIT Note 1	D75EE,D75ET

Note 1: When ordering this part, refer to “3.4.8 Assembly Information (Non-reusable parts)”

Electrical parts list

MAIN UNIT

XC1-388K-01 (TH-D75A (K) type)
XC1-388E-01 (TH-D75E (E, T) type)

Note 2: This part cannot be replaced. Therefore, this part is not supplied as a service part.

Note 3: Due to the characteristics of the parts package, there is a high risk of re-repair after replacement. Please consider replacing with a service unit.

Block No. [0][1]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC102	TPS82140SIL	MOS IC	Note 3	
IC103	TC74VHC123AFK	MOS IC		
IC104	TC74VHC32FK	MOS IC		
IC105	TC7WH08FKJC	MOS IC		
IC106	BU7295HFV	MOS IC		
IC107	XC6701B312E-G	MOS IC		
IC108	BQ25703ARSN	MOS IC	Note 3	
IC200	OPA170AIDRLR	MOS IC		
IC201	TQP369184	MOS IC		
IC500	XC6223N3319	MOS IC	Note 3	
IC501	BD00GA5WEFJ	MOS IC	Note 3	
IC502	BU7242FVM	MOS IC		
IC503	XC6223N3319	MOS IC	Note 3	
IC504	BU7242FVM	MOS IC		
IC600	XC6223N3319	MOS IC	Note 3	
IC601	XC6223N3319	MOS IC		
IC602	XC6223N3319	MOS IC	Note 3	
IC603	XC6223N3319	MOS IC	Note 3	
IC604	SN74LVC1G315S	MOS IC		
IC605	SN74LVC1G315S	MOS IC		
IC606	XC6223N3319	MOS IC	Note 3	
IC700	---------	MOS IC	Note 2	
IC800	---------	MOS IC	Note 2	
IC900	AK2365AU	MOS IC	Note 3	
IC1000	BU7295HFV	MOS IC	Note 3	
IC1001	TC7S66FUFT	MOS IC		
IC1002	AK2365AU	MOS IC	Note 3	
IC1100	XC6223N3319	MOS IC		
IC1101	TC7WH08FKJC	MOS IC		
IC1102	TC7WH08FKJC	MOS IC		
IC1103	---------	MCU IC	Note 2	
IC2000	XC6223H331G-G	MOS IC	Note 3	
IC2001	---------	MOS IC	Note 2	
IC2002	---------	SRAM IC	Note 2	
IC2003	TPA0211DGN	BIPOLAR IC	Note 3	
IC2004	LM2904FVM	BIPOLAR IC		
IC2005	---------	MPU IC	Note 2	
IC2006	XC6119N35A7-G	MOS IC		
IC2007	BD00GA5WEFJ	MOS IC	Note 3	
IC2008	---------	ROM IC	Note 2	
IC2009	XC61CC5002N-G	MOS IC		
IC2011	---------	MOS IC	Note 2	
IC2012	BD1754HFN	MOS IC	Note 3	
IC2013	TC7SZ08FEJC	MOS IC		
IC2014	XC6223T1819	MOS IC	Note 3	
IC2015	XC6223D331G-G	MOS IC	Note 3	
IC2016	XC6223T3019	MOS IC	Note 3	
IC2017	SN74AVC1T45CT	MOS IC		
IC2018	XC6701B312E-G	MOS IC	Note 3	
IC2019	XC6233H3319	MOS IC	Note 3	
IC2020	XCL206B183C	MOS IC	Note 3	
IC2021	TC7WU04FKFT	MOS IC		
IC2023	BU7295HFV	MOS IC	Note 3	
IC2024	TPSM828221SIL	MOS IC	Note 3	
IC2025	XC8102AA07-G	MOS IC		
IC2026	XC6215B122N-G	MOS IC		
IC2027	LM2904FVM	BIPOLAR IC		
IC2028	XC8102AA07-G	MOS IC		
IC2029	ADS7961SRHB	MOS IC	Note 3	
IC2030	TC7MBL3125CFT	MOS IC		
IC2031	TC7SET125FUJC	MOS IC		
IC2032	TC7SZ08FEJC	MOS IC		
IC2033	TC7SET125FUJC	MOS IC		
IC2035	TC7SET125FUJC	MOS IC		
IC2036	SN74AXC4T77R	MOS IC		
IC2037	R2A20178NP	MCU IC	Note 3	
IC2038	XC6223T1819	MOS IC	Note 3	
IC2040	BD00GA5WEFJ	MOS IC	Note 3	
IC2041	XC6233H3319	MOS IC	Note 3	
IC2042	XC6223T3019	MOS IC	Note 3	
IC2043	---------	MPU IC	Note 2	
IC2044	---------	MOS IC	Note 2	
IC2045	TC7WH08FKJC	MOS IC		
IC2046	SN74AXC4T77R	MOS IC		
IC2047	RTC6226	MOS IC	Note 3	
IC2048	SN74AXC4T77R	MOS IC		
IC2049	TC7WU04FKFT	MOS IC		
IC2050	TC7WBL3306CFC	MOS IC		
Q100	LTC043ZEBFS8	DIGI TRANSISTOR		
Q101	LTC043ZEBFS8	DIGI TRANSISTOR		
Q102	HS8K1	FET	Note 3	
Q103	HS8K1	FET	Note 3	
Q104	UT6JA2	DUAL FET		
Q105	UT6JA2	DUAL FET	Note 3	
Q106	EM6K34	FET		
Q107	SSM3K15AMFV	FET		
Q108	SSM6N15AFEM	DUAL FET		
Q200	EM6M2	FET		
Q201	BFR193F	TRANSISTOR		
Q202	EMD3	DIGI TR ARRAY		
Q203	EM6M2	FET		
Q204	2SAR502EB	TRANSISTOR		
Q205	EM6M2	FET		D75AK
Q206	SSM3K15AMFV	FET		
Q207	2SD2654E3/W/	TRANSISTOR		
Q208	SSM3K15AMFV	FET		
Q209	RE1C002ZP	FET		
Q210	SSM3K15AMFV	FET		
Q211	2SD2654E3/W/	TRANSISTOR		
Q212	RD01MUS2-T513	FET		
Q213	RN2713JEF	DIGI TR ARRAY		
Q214	SSM3K15AMFV	FET		
Q215	SSM3K15AMFV	FET		D75AK
Q216	SSM3K15AMFV	FET		
Q217	2SK3476-F	FET		
Q218	2SK3476-F	FET		D75AK
Q400	3SK293F	FET		
Q401	EM6M2	FET		
Q402	3SK293F	FET		

⚠ Symbol No.	Part No.	Part Name	Description	Local
Q403	3SK293F	FET		
Q404	3SK293F	FET		
Q405	LTC043ZEBFS8	DIGI TRANSISTOR		
Q406	3SK293F	FET		
Q407	LTC043ZEBFS8	DIGI TRANSISTOR		
Q408	LTC043ZEBFS8	DIGI TRANSISTOR		
Q409	LTC043ZEBFS8	DIGI TRANSISTOR		
Q411	LTC043ZEBFS8	DIGI TRANSISTOR		D75AK
Q500	3SK293F	FET		
Q501	EM6M2	FET		
Q502	3SK293F	FET		
Q503	3SK293F	FET		
Q504	LTC043ZEBFS8	DIGI TRANSISTOR		
Q505	LTC043ZEBFS8	DIGI TRANSISTOR		
Q506	LTC043ZEBFS8	DIGI TRANSISTOR		
Q507	LTC043ZEBFS8	DIGI TRANSISTOR		
Q508	LTC043ZEBFS8	DIGI TRANSISTOR		
Q509	LTC043ZEBFS8	DIGI TRANSISTOR		
Q600	BFR193F	TRANSISTOR		
Q601	BFR193F	TRANSISTOR		
Q700	BFR193F	TRANSISTOR		
Q701	RE1C001ZP	FET		
Q702	RE1C001ZP	FET		
Q703	RE1C001ZP	FET		
Q800	BFR193F	TRANSISTOR		
Q801	BFR193F	TRANSISTOR		
Q802	RE1C001ZP	FET		
Q803	RE1C001ZP	FET		
Q900	BFR193F	TRANSISTOR		
Q1000	BFR193F	TRANSISTOR		
Q1100	LTC043ZEBFS8	DIGI TRANSISTOR		
Q1101	LTC043ZEBFS8	DIGI TRANSISTOR		
Q1700	RE1C001UN	FET		
Q1701	LTC043ZEBFS8	DIGI TRANSISTOR		
Q1702	RE1C001UN	FET		
Q1703	LSAR523EBFS8	TRANSISTOR		
Q1704	SSM3K15AMFV	FET		
Q1705	LTC043ZEBFS8	DIGI TRANSISTOR		
Q1706	LSAR523EBFS8	TRANSISTOR		
Q1707	BFR193F	TRANSISTOR		
Q1708	BFR193F	TRANSISTOR		
Q1709	2SC5661/P/	TRANSISTOR		
Q1710	LTC043ZEBFS8	DIGI TRANSISTOR		
Q1711	LTC043ZEBFS8	DIGI TRANSISTOR		
Q1712	BFR193F	TRANSISTOR		
Q2000	LTC043ZEBFS8	DIGI TRANSISTOR		
Q2001	EMD12	TRANSISTOR		
Q2002	SSM3K15AMFVF	FET		
Q2003	SSM6N58NUFT	FET	Note 3	
Q2005	EM6K34	FET		
Q2006	EM6M2	FET		
Q2007	SSM3K15AMFV	FET		
Q2008	LTC043ZEBFS8	DIGI TRANSISTOR		
Q2009	EM6M2	FET		
Q2010	EM6M2	FET		
Q2011	LTC043ZEBFS8	DIGI TRANSISTOR		
Q2012	EM6K34	FET		
Q2013	EM6M2	FET		
Q2014	EM6M2	FET		
Q2016	2SC5661/P/	TRANSISTOR		
Q2017	SSM3K15AMFVF	FET		
Q2018	SSM3J133TUFT	FET		
Q2019	LTC043ZEBFS8	DIGI TRANSISTOR		
Q2020	SSM3K15AMFVF	FET		

⚠ Symbol No.	Part No.	Part Name	Description	Local
D100	RB531SM-30	DIODE		
D101	RB531SM-30	DIODE		
D102	RB531SM-30	DIODE		
D103	RB531SM-30	DIODE		
D104	RB715WM	SCHOTTKY DIODE		
D105	EDZV6.8B	ZENER DIODE		
D106	GN1G	DIODE		
D107	1SS400CM	DIODE		
D108	DF2B20M4SL	ZENER DIODE		
D109	DF2B20M4SL	ZENER DIODE		
D110	RB531SM-30	DIODE		
D111	RB531SM-30	DIODE		
D200	1SS400CM	DIODE		
D201	1SS400CM	DIODE		
D202	1SS390SM	DIODE		
D203	1SS390SM	DIODE		D75AK
D204	1SS390SM	DIODE		
D205	1SS390SM	DIODE		
D206	1SS390SM	DIODE		D75AK
D207	1SS390SM	DIODE		
D208	RB531SM-30	DIODE		
D209	RB531SM-30	DIODE		
D210	1SS400CM	DIODE		
D211	1SS400CM	DIODE		
D212	RN142SM	DIODE		
D213	RN142SM	DIODE		D75AK
D214	RN142SM	DIODE		
D215	RN141CM	DIODE		
D216	1SS400SM	DIODE		
D217	RN142SM	DIODE		
D218	RN142SM	DIODE		
D219	RN142SM	DIODE		
D220	EDZV18B	ZENER DIODE		
D221	RN142SM	DIODE		
D222	RN142SM	DIODE		
D223	RN142SM	DIODE		
D224	RN142SM	DIODE		D75AK
D225	RN142SM	DIODE		D75AK
D226	RN142SM	DIODE		
D227	RN142SM	DIODE		
D228	RN142SM	DIODE		
D229	1SS400SM	DIODE		
D230	EDZV18B	ZENER DIODE		
D231	RN142SM	DIODE		
D232	1N4148WTF	DIODE		
D233	RN142SM	DIODE		D75AK
D234	RN142SM	DIODE		D75AK
D235	RN142SM	DIODE		
D236	RN142SM	DIODE		
D237	RN142SM	DIODE		
D238	RN142SM	DIODE		
D239	F0K-0175-00	SURGE ABSORBER		
D400	RN141CM	DIODE		
D401	RN141CM	DIODE		
D402	1SV325FT	VARI CAP DIODE		
D403	BBY65-02V	VARI CAP DIODE		
D404	1SV325FT	VARI CAP DIODE		
D405	BBY65-02V	VARI CAP DIODE		
D407	RN141CM	DIODE		
D408	RN141CM	DIODE		
D409	RN141CM	DIODE		
D410	RN141CM	DIODE		
D411	RN141CM	DIODE		
D500	RN141CM	DIODE		
D501	RN141CM	DIODE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
D502	1SV325FT	VARI CAP DIODE		
D504	BBY65-02V	VARI CAP DIODE		
D505	BBY65-02V	VARI CAP DIODE		
D506	1SV325FT	VARI CAP DIODE		
D507	BBY65-02V	VARI CAP DIODE		
D509	DAN222WM	DIODE ARRAY		
D510	DAN222WM	DIODE ARRAY		
D511	RN141CM	DIODE		
D512	RN141CM	DIODE		
D513	RN141CM	DIODE		
D600	RN141CM	DIODE		
D601	RN141CM	DIODE		
D602	RN141CM	DIODE		
D603	RN141CM	DIODE		
D700	RN141CM	DIODE		
D701	RN141CM	DIODE		
D702	RN141CM	DIODE		
D703	RN141CM	DIODE		
D704	RN141CM	DIODE		
D705	RN141CM	DIODE		
D800	RN141CM	DIODE		
D801	RN141CM	DIODE		
D802	RN141CM	DIODE		
D803	RN141CM	DIODE		
D1000	RB531SM-30	DIODE		
D1700	BBY66-02V	VARI CAP DIODE		
D1701	BBY66-02V	VARI CAP DIODE		
D1702	DAN222WM	DIODE ARRAY		
D1703	BBY66-02V	VARI CAP DIODE		
D1704	RN142SM	DIODE		
D1705	RN142SM	DIODE		
D1706	1SS390SM	DIODE		
D1707	1SS390SM	DIODE		
D1708	RN141CM	DIODE		
D1709	1SS390SM	DIODE		
D1710	RN141CM	DIODE		
D1851	B30-2365-05	LED		
D1852	B30-2365-05	LED		
D1853	B30-2365-05	LED		
D1854	B30-2365-05	LED		
D1855	B30-2365-05	LED		
D1856	B30-2365-05	LED		
D1857	B30-2365-05	LED		
D1858	B30-2365-05	LED		
D1859	B30-2365-05	LED		
D1860	B30-2365-05	LED		
D1861	B30-2365-05	LED		
D1862	B30-2365-05	LED		
D2000	DF2B20M4SL	ZENER DIODE		
D2001	DF2B20M4SL	ZENER DIODE		
D2002	DF2B20M4SL	ZENER DIODE		
D2003	DF2B20M4SL	ZENER DIODE		
D2004	DF2B20M4SL	ZENER DIODE		
D2005	DF2B20M4SL	ZENER DIODE		
D2006	DF2B20M4SL	ZENER DIODE		
D2007	DF2B20M4SL	ZENER DIODE		
D2008	DF2B20M4SL	ZENER DIODE		
D2009	RB060MM-40	SCHOTTKY DIODE		
D2010	RB531SM-30	DIODE		
D2011	RB531SM-30	DIODE		
D2012	RB531SM-30	DIODE		
D2013	RB520SM-30	DIODE		
D2014	1SS400CM	DIODE		
D2015	RB715WM	SCHOTTKY DIODE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
D2016	MSL0601RGBU	LED		
D2017	BBY65-02V	VARI CAP DIODE		
D2018	BBY65-02V	VARI CAP DIODE		
D2019	F0K-0420-00	SURGE ABSORBER		
D2020	DF2B20M4SL	ZENER DIODE		
D2021	EDZV3.6B	ZENER DIODE		
D2022	EDZV3.6B	ZENER DIODE		
C106	CK73EXR0J107M	C CAPACITOR	100uF 6.3V M	
C107	CK73EXR0J107M	C CAPACITOR	100uF 6.3V M	
C108	CK73EXR0J107M	C CAPACITOR	100uF 6.3V M	
C109	CK73EXR0J107M	C CAPACITOR	100uF 6.3V M	
C110	CK73EXR0J107M	C CAPACITOR	100uF 6.3V M	
C111	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C112	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C113	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C114	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C115	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C116	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C117	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C118	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C119	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C120	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C121	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C123	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C124	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C125	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C126	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C127	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C128	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C129	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C130	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C131	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C132	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C133	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C134	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C135	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C136	CC73JCH1H151J	C CAPACITOR	150pF 50V J	
C137	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C138	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C139	CK730GA1H473K	C CAPACITOR	0.047uF 50V K	
C140	CK730GA1H473K	C CAPACITOR	0.047uF 50V K	
C141	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C142	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C143	CC73JCH1H151J	C CAPACITOR	150pF 50V J	
C144	CK730PY1E333K	C CAPACITOR	0.033uF 25V K	
C145	CK730PY1E333K	C CAPACITOR	0.033uF 25V K	
C146	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C147	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C148	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C149	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C150	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C151	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C152	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C153	CK730PY1H682K	C CAPACITOR	6800pF 50V K	
C154	CK730AU1E474K	C CAPACITOR	0.47uF 25V K	
C155	CK73JXR1E182K	C CAPACITOR	1800pF 25V K	
C156	CK73JXR1H681K	C CAPACITOR	680pF 50V K	
C157	CC730CC1H330G	C CAPACITOR	33pF 50V G	
C158	CC730CC1H150G	C CAPACITOR	15pF 50V G	
C159	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C160	CK73JXR1E332K	C CAPACITOR	3300pF 25V K	
C162	CK730PY1H103K	C CAPACITOR	0.01uF 50V K	
C163	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C164	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C165	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C166	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C167	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C168	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C169	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C170	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C171	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C200	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C201	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C202	CC730CC1H150G	C CAPACITOR	15pF 50V G	
C203	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C204	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C205	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C206	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C207	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C208	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C209	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	D75AK
C210	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C211	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C212	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C213	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	D75AK
C214	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C215	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C216	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C217	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C218	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	D75AK
C219	CC730EE1H080B	C CAPACITOR	8pF 50V B	D75AK
C220	CC730EE1H040B	C CAPACITOR	4pF 50V B	D75AK
C221	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C222	CC730EE1H180G	C CAPACITOR	18pF 50V G	D75AK
C223	CC730EE1H120G	C CAPACITOR	12pF 50V G	
C224	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C225	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C226	CC730EE1H040B	C CAPACITOR	4pF 50V B	D75AK
C227	CC730EE1H040B	C CAPACITOR	4pF 50V B	
C228	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C229	CK73FXR1E226M	C CAPACITOR	22uF 25V M	
C230	CC730EE1H100F	C CAPACITOR	10pF 50V F	D75AK
C231	CC730EE1H270G	C CAPACITOR	27pF 50V G	
C232	CC730EE1H040B	C CAPACITOR	4pF 50V B	
C233	CC730EE1H150G	C CAPACITOR	15pF 50V G	
C234	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C235	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C236	CC730EE1H102K	C CAPACITOR	1000pF 50V K	
C237	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C238	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C239	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C240	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C241	CC730EE1H471K	C CAPACITOR	470pF 50V K	
C242	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C243	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C244	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C245	CK730PY1H103K	C CAPACITOR	0.01uF 50V K	
C246	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C247	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C248	CK730PX1A105K	C CAPACITOR	1uF 10V K	
C249	CC730EE1H101J	C CAPACITOR	100pF 50V J	
C250	CK73JXR0J474K	C CAPACITOR	0.47uF 6.3V K	
C251	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C252	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C253	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C254	CK730PY1H103K	C CAPACITOR	0.01uF 50V K	
C255	CK73JXR1H471K	C CAPACITOR	470pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C256	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C257	CC730EF1H102K	C CAPACITOR	1000pF 50V K	
C258	CC730EF1H560G	C CAPACITOR	56pF 50V G	
C259	CC730EF1H102K	C CAPACITOR	1000pF 50V K	
C260	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C261	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C262	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C263	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C264	CC730AY2E820G	C CAPACITOR	82pF 250V G	D75AK
C265	CC730AY2E100G	C CAPACITOR	10pF 250V G	
C266	CC730AY2E120G	C CAPACITOR	12pF 250V G	D75AK
C267	CC730EF1H060B	C CAPACITOR	6pF 50V B	
C268	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	D75AK
C269	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C270	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C271	CC730EF1H470G	C CAPACITOR	47pF 50V G	
C272	CC730EF1H102K	C CAPACITOR	1000pF 50V K	
C273	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	D75AK
C274	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	D75AK
C275	CC730EF1H102K	C CAPACITOR	1000pF 50V K	D75AK
C276	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C277	CC730AY2E390G	C CAPACITOR	39pF 250V G	
C278	CK73JXR1H471K	C CAPACITOR	470pF 50V K	D75AK
C279	CC730AY2E040B	C CAPACITOR	4pF 250V B	
C280	CK73JXR1H471K	C CAPACITOR	470pF 50V K	D75AK
C281	CC730AY2E820G	C CAPACITOR	82pF 250V G	D75AK
C283	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C284	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C287	CK730PY1H103K	C CAPACITOR	0.01uF 50V K	
C292	CC730EF1H101G	C CAPACITOR	100pF 50V G	
C293	CK73JXR1H471K	C CAPACITOR	470pF 50V K	D75AK
C296	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C298	CC730AY2E330G	C CAPACITOR	33pF 250V G	D75AK
C299	CC730AY2E180G	C CAPACITOR	18pF 250V G	
C300	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C301	CC730EE1H101J	C CAPACITOR	100pF 50V J	
C303	CK730PY1H103K	C CAPACITOR	0.01uF 50V K	
C304	CC730AY2E560G	C CAPACITOR	56pF 250V G	
C305	CC730AY2E010B	C CAPACITOR	1pF 250V B	
C306	CC730AY2E180G	C CAPACITOR	18pF 250V G	
C307	CC730AY2E680G	C CAPACITOR	68pF 250V G	
C309	CC730EF1H101G	C CAPACITOR	100pF 50V G	D75AK
C310	CC730EF1H330G	C CAPACITOR	33pF 50V G	
C311	CC730EF1H050B	C CAPACITOR	5pF 50V B	D75AK
C312	CC730EF1H080B	C CAPACITOR	8pF 50V B	
C313	CC730EF1H330G	C CAPACITOR	33pF 50V G	D75AK
C314	CC730EF1H050B	C CAPACITOR	5pF 50V B	
C315	CC730EF1H680G	C CAPACITOR	68pF 50V G	
C316	CC730EF1H221K	C CAPACITOR	220pF 50V K	
C317	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C318	CC730EF1H102K	C CAPACITOR	1000pF 50V K	
C319	CC730EF1H102K	C CAPACITOR	1000pF 50V K	D75AK
C320	CC730AY2E180G	C CAPACITOR	18pF 250V G	D75AK
C321	CC730AY2E180G	C CAPACITOR	18pF 250V G	
C322	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	D75AK
C324	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C326	CK730PX1H104K	C CAPACITOR	0.1uF 50V K	
C327	CC730EF1H102K	C CAPACITOR	1000pF 50V K	
C328	CC730EF1H270G	C CAPACITOR	27pF 50V G	
C329	CC730EE1H470J	C CAPACITOR	47pF 50V J	
C330	CC730EF1H180G	C CAPACITOR	18pF 50V G	
C331	CC730EF1H820G	C CAPACITOR	82pF 50V G	
C332	CC730EF1H060B	C CAPACITOR	6pF 50V B	
C333	CC730EF1H100F	C CAPACITOR	10pF 50V F	
C334	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C335	CC730EF1H070B	C CAPACITOR	7pF 50V B	
C336	CC730EF1H101G	C CAPACITOR	100pF 50V G	
C337	CC730EF1H270G	C CAPACITOR	27pF 50V G	
C338	CC730EF1H100F	C CAPACITOR	10pF 50V F	
C339	CC730EF1H100F	C CAPACITOR	10pF 50V F	
C340	CC730EF1H040B	C CAPACITOR	4pF 50V B	
C341	CC730EF1H010B	C CAPACITOR	1pF 50V B	
C342	CC730EE1H102K	C CAPACITOR	1000pF 50V K	
C343	CC730EE1H470J	C CAPACITOR	47pF 50V J	
C344	CC730EF1H060B	C CAPACITOR	6pF 50V B	
C345	CC730EE1H100F	C CAPACITOR	10pF 50V F	
C346	CC730EE1H030B	C CAPACITOR	3pF 50V B	
C347	CC730EF1H150G	C CAPACITOR	15pF 50V G	
C348	CC730EF1H100F	C CAPACITOR	10pF 50V F	
C349	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C350	CC730EF1H080B	C CAPACITOR	8pF 50V B	
C351	CC730EF1H100F	C CAPACITOR	10pF 50V F	
C352	CC730EF1H150G	C CAPACITOR	15pF 50V G	
C353	CC730EE1H180G	C CAPACITOR	18pF 50V G	
C355	CC730EF1H040B	C CAPACITOR	4pF 50V B	
C356	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C357	CC730EF1H040B	C CAPACITOR	4pF 50V B	
C358	CC730EF1H040B	C CAPACITOR	4pF 50V B	
C359	CC730EE1H040B	C CAPACITOR	4pF 50V B	
C360	CC730EE1H102K	C CAPACITOR	1000pF 50V K	
C361	CC730EE1H102K	C CAPACITOR	1000pF 50V K	
C362	CC730AY2E390G	C CAPACITOR	39pF 250V G	D75AK
C380	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C381	CC73JCH1E561J	C CAPACITOR	560pF 25V J	
C382	CC730CC1H080B	C CAPACITOR	8pF 50V B	
C383	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C384	CC730EF1H010B	C CAPACITOR	1pF 50V B	
C385	CC730AY2E330G	C CAPACITOR	33pF 250V G	
C400	CC730CC1H030B	C CAPACITOR	3pF 50V B	
C401	CC730CC1H120G	C CAPACITOR	12pF 50V G	
C402	CC730CC1H040B	C CAPACITOR	4pF 50V B	
C403	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C404	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C405	CC730CC1H0R5B	C CAPACITOR	0.5pF 50V B	
C406	CC730CC1H060B	C CAPACITOR	6pF 50V B	
C407	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C408	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C409	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C410	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C412	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C413	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C414	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C415	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C416	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C417	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C418	CC730CC1H0R5B	C CAPACITOR	0.5pF 50V B	
C419	CC730CC1H270G	C CAPACITOR	27pF 50V G	
C420	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C421	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C423	CC730CC1H0R5B	C CAPACITOR	0.5pF 50V B	
C424	CC730CC1H010B	C CAPACITOR	1pF 50V B	
C425	CC730CC1H270G	C CAPACITOR	27pF 50V G	
C426	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C427	CC730CC1H050B	C CAPACITOR	5pF 50V B	
C428	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C429	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C430	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C431	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C432	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C433	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C434	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C435	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C436	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C438	CC730CC1H080B	C CAPACITOR	8pF 50V B	D75AK
C439	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C440	CC730CC1H560G	C CAPACITOR	56pF 50V G	
C441	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C443	CC730CC1H080B	C CAPACITOR	8pF 50V B	
C444	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C445	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C447	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C448	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C449	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C450	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C451	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C452	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C453	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C454	CC730CC1H030B	C CAPACITOR	3pF 50V B	
C455	CC730CC1H330G	C CAPACITOR	33pF 50V G	
C456	CC730CC1H220G	C CAPACITOR	22pF 50V G	D75AK
C456	CC730CC1H180G	C CAPACITOR	18pF 50V G	D75EE,D75ET
C457	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C458	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C459	CC730CC1H270G	C CAPACITOR	27pF 50V G	
C460	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C461	CC730CC1H150G	C CAPACITOR	15pF 50V G	
C462	CC730CC1H120G	C CAPACITOR	12pF 50V G	
C463	CC730CC1H330G	C CAPACITOR	33pF 50V G	
C464	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C465	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C466	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C467	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C468	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C469	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C470	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C475	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C479	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C500	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C501	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C502	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C503	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C504	CC730CC1H0R5B	C CAPACITOR	0.5pF 50V B	
C505	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C506	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C507	CC730CC1H060B	C CAPACITOR	6pF 50V B	
C508	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C509	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C510	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C511	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C513	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C516	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C517	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C518	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C519	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C522	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C525	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C526	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C527	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C529	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C530	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C531	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C533	CC730CC1H010B	C CAPACITOR	1pF 50V B	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C535	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C536	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C537	CC730CC1H050B	C CAPACITOR	5pF 50V B	
C538	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C539	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C540	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C541	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C542	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C543	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C544	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C545	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C546	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C547	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C548	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C549	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C551	CC730CC1H080B	C CAPACITOR	8pF 50V B	
C553	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C554	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C555	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C556	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C557	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C558	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C559	CC730CC1H150G	C CAPACITOR	15pF 50V G	
C560	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C561	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C562	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C563	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C564	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C565	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C566	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C567	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C602	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C603	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C604	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C605	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C606	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C607	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C608	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C609	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C610	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C611	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C612	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C613	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C614	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C615	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C616	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C617	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C618	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C619	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C620	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C621	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C622	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C623	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C624	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C625	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C626	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C627	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C628	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C629	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C630	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C631	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C632	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C636	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C637	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C638	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C639	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C640	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C641	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C642	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C643	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C644	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C645	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C646	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C647	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C648	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C700	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C701	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C703	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C704	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C705	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C706	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C707	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C708	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C709	CK730PY1H682K	C CAPACITOR	6800pF 50V K	
C710	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C711	CC730EE1H271G	C CAPACITOR	270pF 50V G	
C712	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C713	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C715	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C716	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C717	CK73HXR0J475M	C CAPACITOR	4.7uF 6.3V M	
C718	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C719	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C720	CK73HXR0J475M	C CAPACITOR	4.7uF 6.3V M	
C721	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C722	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C723	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C724	CK73HXR0J475M	C CAPACITOR	4.7uF 6.3V M	
C725	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C726	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C727	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C729	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C730	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C732	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C733	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C734	CC730CC1H050B	C CAPACITOR	5pF 50V B	
C735	CC730CC1H0R5B	C CAPACITOR	0.5pF 50V B	
C736	CC730CC1H120G	C CAPACITOR	12pF 50V G	
C737	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C738	CC730CC1H030B	C CAPACITOR	3pF 50V B	
C739	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C740	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C741	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C742	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C743	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C744	CC730CC1H1R5B	C CAPACITOR	1.5pF 50V B	
C745	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C746	CC730CC1H040B	C CAPACITOR	4pF 50V B	
C747	CC730CC1H070B	C CAPACITOR	7pF 50V B	
C748	CC730CC1H390G	C CAPACITOR	39pF 50V G	
C749	CC730CC1H390G	C CAPACITOR	39pF 50V G	
C750	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C751	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C752	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C753	CC730CC1H030B	C CAPACITOR	3pF 50V B	
C754	CC730CC1H390G	C CAPACITOR	39pF 50V G	
C755	CC730CC1H070B	C CAPACITOR	7pF 50V B	
C758	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C759	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C760	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C761	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C762	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C763	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C764	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C800	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C801	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C803	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C804	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C805	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C806	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C807	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C808	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C809	CK730PY1H682K	C CAPACITOR	6800pF 50V K	
C810	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C811	CC730EE1H271G	C CAPACITOR	270pF 50V G	
C812	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C813	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C815	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C816	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C817	CK73HXR0J475M	C CAPACITOR	4.7uF 6.3V M	
C818	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C819	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C820	CK73HXR0J475M	C CAPACITOR	4.7uF 6.3V M	
C821	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C822	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C823	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C824	CK73HXR0J475M	C CAPACITOR	4.7uF 6.3V M	
C825	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C826	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C827	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C828	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C829	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C830	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C831	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C833	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C834	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C835	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C836	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C837	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C838	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C839	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C840	CC730CC1H560G	C CAPACITOR	56pF 50V G	
C841	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C842	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C843	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C844	CC730CC1H070B	C CAPACITOR	7pF 50V B	
C845	CC730CC1H270G	C CAPACITOR	27pF 50V G	
C846	CC730CC1H270G	C CAPACITOR	27pF 50V G	
C847	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C848	CC730CC1H070B	C CAPACITOR	7pF 50V B	
C849	CC730CC1H010B	C CAPACITOR	1pF 50V B	
C850	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C851	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C852	CC730CC1H560G	C CAPACITOR	56pF 50V G	
C853	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C854	CC730CC1H120G	C CAPACITOR	12pF 50V G	
C855	CC730CC1H050B	C CAPACITOR	5pF 50V B	
C856	CC730CC1H2R5B	C CAPACITOR	2.5pF 50V B	
C857	CC730CC1H3R5B	C CAPACITOR	3.5pF 50V B	
C858	CC730CC1H1R5B	C CAPACITOR	1.5pF 50V B	
C860	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C861	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C900	CK73JXR1E182K	C CAPACITOR	1800pF 25V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C901	CC730CC1H680G	C CAPACITOR	68pF 50V G	
C902	CK73JXR1H681K	C CAPACITOR	680pF 50V K	
C903	CC730CC1H121G	C CAPACITOR	120pF 50V G	
C904	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C905	CC730CC1H121G	C CAPACITOR	120pF 50V G	
C906	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C907	CK730PY1E333K	C CAPACITOR	0.033uF 25V K	
C908	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C909	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C910	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C911	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C912	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C913	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C914	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C915	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C916	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C917	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C918	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C919	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C921	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C922	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C923	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C924	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1000	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1001	CC730EE1H271G	C CAPACITOR	270pF 50V G	
C1002	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1003	CK73JXR1E182K	C CAPACITOR	1800pF 25V K	
C1004	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1005	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1006	CC730CC1H680G	C CAPACITOR	68pF 50V G	
C1007	CK73JXR1H681K	C CAPACITOR	680pF 50V K	
C1008	CC730CC1H121G	C CAPACITOR	120pF 50V G	
C1009	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C1010	CC730CC1H121G	C CAPACITOR	120pF 50V G	
C1012	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1013	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1014	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1015	CK730PY1E333K	C CAPACITOR	0.033uF 25V K	
C1017	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1018	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C1019	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1021	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C1022	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C1023	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C1024	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C1025	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C1026	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C1027	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1028	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C1029	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1030	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C1032	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1033	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1034	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1035	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1100	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C1101	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C1102	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C1103	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1104	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1105	CC730CC1H560G	C CAPACITOR	56pF 50V G	
C1106	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C1107	CC730CC1H020B	C CAPACITOR	2pF 50V B	
C1108	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C1109	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C1110	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1111	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C1112	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1113	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C1114	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C1115	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C1702	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1703	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1704	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C1705	CC730CC1H150G	C CAPACITOR	15pF 50V G	
C1706	CC730CC1H270G	C CAPACITOR	27pF 50V G	
C1707	CC730CC1H330G	C CAPACITOR	33pF 50V G	
C1708	CC730CC1H040B	C CAPACITOR	4pF 50V B	
C1709	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C1710	CC730CC1H390G	C CAPACITOR	39pF 50V G	
C1711	CC730CC1H680G	C CAPACITOR	68pF 50V G	
C1712	CC730CC1H330G	C CAPACITOR	33pF 50V G	
C1713	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1714	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1715	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1716	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1717	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1718	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1719	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1720	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1721	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1722	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C1723	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1724	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1725	CK730PM1C223K	C CAPACITOR	0.022uF 16V K	
C1726	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1727	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1728	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1729	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1730	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C1731	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1732	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C1733	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1734	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1735	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1736	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1737	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1738	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1739	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C1740	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1741	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C1851	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2000	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2001	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2003	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2004	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2005	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2006	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2007	CK73FXR1A226M	C CAPACITOR	22uF 10V M	
C2008	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C2009	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2011	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2012	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2013	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2014	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2015	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2016	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2017	CC73JCH1H101J	C CAPACITOR	100pF 50V J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C2018	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2019	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2021	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2022	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2023	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2024	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2025	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2026	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C2027	CC730CC1H150G	C CAPACITOR	15pF 50V G	
C2028	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2029	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2030	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2031	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C2034	CK73EXR0J476M	C CAPACITOR	47uF 6.3V M	
C2035	CK73EXR0J476M	C CAPACITOR	47uF 6.3V M	
C2036	CK73EXR0J476M	C CAPACITOR	47uF 6.3V M	
C2037	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C2038	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2039	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2040	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2041	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2042	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2043	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2044	CK73EXR1E106K	C CAPACITOR	10uF 25V K	
C2045	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2047	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2048	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2050	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2052	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C2053	CK73GXR1E225K	C CAPACITOR	2.2uF 25V K	
C2054	CK73GXR1A106M	C CAPACITOR	10uF 10V M	
C2055	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2056	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2057	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2058	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2059	CK730PM1C393K	C CAPACITOR	0.039uF 16V K	
C2060	CK73FXR1A226M	C CAPACITOR	22uF 10V M	
C2061	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2062	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2063	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2064	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2065	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2066	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2067	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2068	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2069	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2070	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2071	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2072	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2073	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2074	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2075	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2076	CK73FXR1A226M	C CAPACITOR	22uF 10V M	
C2077	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2078	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2079	CC730CC1H560G	C CAPACITOR	56pF 50V G	
C2080	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2081	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2082	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2083	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2084	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2085	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2086	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C2087	CC73JCH1H101J	C CAPACITOR	100pF 50V J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C2088	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2089	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2090	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2091	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2092	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2093	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2094	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2095	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2096	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2097	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2098	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2099	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2100	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2101	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2102	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2103	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2104	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2105	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2106	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2107	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2108	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2109	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2110	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C2111	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2112	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2113	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2114	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2115	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2116	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2117	CA77VAD1C680M	AS E CAPACITOR	68uF 16V M	
C2118	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2119	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2120	CA77VAD1C680M	AS E CAPACITOR	68uF 16V M	
C2122	CA77VAD1C680M	AS E CAPACITOR	68uF 16V M	
C2123	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2124	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2125	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2126	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2127	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2128	CK73GXR1A106M	C CAPACITOR	10uF 10V M	
C2130	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2131	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2132	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2133	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2134	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2135	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2136	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2137	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C2138	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C2139	CK73GXR1E225K	C CAPACITOR	2.2uF 25V K	
C2140	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2141	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2142	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2143	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2144	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C2145	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2146	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2147	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C2148	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2149	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2150	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2151	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2152	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2153	CK73JXR1H681K	C CAPACITOR	680pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C2154	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2155	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2156	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2157	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2158	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2159	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2160	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2161	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
C2162	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2163	CC730EE1H471K	C CAPACITOR	470pF 50V K	
C2164	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2165	CK73GXR1E475K	C CAPACITOR	4.7uF 25V K	
C2166	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2167	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2168	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2169	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2170	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2171	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2172	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2173	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2174	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2175	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2176	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2178	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2179	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2180	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2181	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2182	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2183	CK73EXR0J476M	C CAPACITOR	47uF 6.3V M	
C2184	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2189	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2191	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2192	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2193	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C2194	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2195	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2196	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2197	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2198	CK730AU1E474K	C CAPACITOR	0.47uF 25V K	
C2200	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2201	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2202	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2203	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2208	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2209	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2210	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2211	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2212	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2213	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2214	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2215	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2216	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2217	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2218	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2219	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2220	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2221	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2222	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2223	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2224	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2226	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2227	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2228	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2229	CK73HXR1C105K	C CAPACITOR	1uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C2230	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2231	CK73HXR1A225K	C CAPACITOR	2.2uF 10V K	
C2232	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C2233	CC73JCH1H100D	C CAPACITOR	10pF 50V D	
C2234	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2235	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2236	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2237	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2238	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2239	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2240	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2241	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2242	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C2244	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2245	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C2246	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2247	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2248	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2249	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2250	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C2251	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2252	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2253	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C2254	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2255	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C2256	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2257	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2258	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2259	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2260	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2261	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2262	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2263	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C2264	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2265	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2266	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2267	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2268	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2269	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2270	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C2271	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C2272	CC730EE1H2R5B	C CAPACITOR	2.5pF 50V B	
C2273	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2275	CK73JXR1C103K	C CAPACITOR	0.01uF 16V K	
C2276	CC730CC1H060B	C CAPACITOR	6pF 50V B	
C2277	CC730CC1H330G	C CAPACITOR	33pF 50V G	
C2278	CC730CC1H180G	C CAPACITOR	18pF 50V G	
C2279	CC730EE1H220G	C CAPACITOR	22pF 50V G	
C2281	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2282	CK730PM1C223K	C CAPACITOR	0.022uF 16V K	
C2283	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C2284	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2285	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2286	CC730EE1H2R5B	C CAPACITOR	2.5pF 50V B	
C2287	CK73HXR1E104K	C CAPACITOR	0.1uF 25V K	
C2288	CC730EE1H010B	C CAPACITOR	1pF 50V B	
C2290	CC730CC1H120G	C CAPACITOR	12pF 50V G	
C2291	CC730CC1H470G	C CAPACITOR	47pF 50V G	
C2292	CC730CC1H120G	C CAPACITOR	12pF 50V G	
C2293	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2294	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2295	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2296	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2297	CK730PM1A105M	C CAPACITOR	1uF 10V M	
C2298	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C2299	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2301	CK73GXR0J106M	C CAPACITOR	10uF 6.3V M	
C2302	CK73JXR1H471K	C CAPACITOR	470pF 50V K	
C2303	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2304	CK73HXR1C105K	C CAPACITOR	1uF 16V K	
C2305	CC73JCH1E331J	C CAPACITOR	330pF 25V J	
C2306	CK730PM1C393K	C CAPACITOR	0.039uF 16V K	
C2307	CK73JXR1C104K	C CAPACITOR	0.1uF 16V K	
C2308	CC73JCH1E331J	C CAPACITOR	330pF 25V J	
C2309	CK73JXR1H391K	C CAPACITOR	390pF 50V K	
C2310	CK73JXR1A153K	C CAPACITOR	0.015uF 10V K	
C2311	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2312	CK73JXR1H102K	C CAPACITOR	1000pF 50V K	
C2313	CK73JXR1C224K	C CAPACITOR	0.22uF 16V K	
C2314	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C2315	CC730CC1H220G	C CAPACITOR	22pF 50V G	
C2316	CK73GXR1H105K	C CAPACITOR	1uF 50V K	
R1	RK73GB2A102J	MG RESISTOR	1kΩ 1/10W J	
R2	RK73GB2A102J	MG RESISTOR	1kΩ 1/10W J	
R3	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	D75EE,D75ET
R4	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	D75AK
R90	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R103	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R104	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R105	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R106	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R107	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R108	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R110	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R111	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R112	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R113	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R114	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R115	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R116	RK73HH1J273D	MG RESISTOR	27kΩ 1/16W D	
R117	RK73HH1J274D	MG RESISTOR	270kΩ 1/16W D	
R118	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R119	RK73GB2A100J	MG RESISTOR	10Ω 1/10W J	
R120	RK73JP1H103D	MG RESISTOR	10kΩ 1/20W D	
R121	RK73JP1H394D	MG RESISTOR	390kΩ 1/20W D	
R122	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R123	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R124	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R125	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R126	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R127	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R128	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R129	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R130	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R131	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R132	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R134	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R135	RK73JB1H122J	MG RESISTOR	1.2kΩ 1/20W J	
R136	RK73JB1H393J	MG RESISTOR	39kΩ 1/20W J	
R139	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R140	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R142	RK73HB1J1R0J	MG RESISTOR	1.0Ω 1/16W J	
R143	RZ73H0DK4R99F	RESISTOR	4.9Ω F	
R145	RK73G0KM10LF	MG RESISTOR	10mΩ F	
R146	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R147	RZ73H0DK4R99F	RESISTOR	4.9Ω F	
R148	RK73HB1J2R2J	MG RESISTOR	2.2Ω 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R149	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R150	RK73JB1H334J	MG RESISTOR	330kΩ 1/20W J	
R151	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R152	RZ73G0DM20LF	RESISTOR	20mΩ F	
R153	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R154	RK73JB1H184J	MG RESISTOR	180kΩ 1/20W J	
R155	RK73JB1H274J	MG RESISTOR	270kΩ 1/20W J	
R156	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R158	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R159	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R160	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R161	RK73JB1H274J	MG RESISTOR	270kΩ 1/20W J	
R162	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R163	RK73JP1H104D	MG RESISTOR	100kΩ 1/20W D	
R165	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R167	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R168	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R169	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R170	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R172	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R173	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R174	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R175	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R176	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R200	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R201	RK73JB1H822J	MG RESISTOR	8.2kΩ 1/20W J	
R202	RK73JB1H822J	MG RESISTOR	8.2kΩ 1/20W J	
R203	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R204	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R205	RK73JB1H272J	MG RESISTOR	2.7kΩ 1/20W J	
R206	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R207	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R208	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R209	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R210	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	D75AK
R211	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R212	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R213	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	D75AK
R214	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R215	R92-3512-05	COMP RESISTOR	0.1Ω 0.5W	
R216	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R217	R92-3512-05	COMP RESISTOR	0.1Ω 0.5W	
R218	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	D75AK
R219	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R220	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R221	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R222	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R223	RK73HB1J150J	MG RESISTOR	15Ω 1/16W J	
R224	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R225	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R226	RK73HB1J561J	MG RESISTOR	560Ω 1/16W J	
R227	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R228	RK73JB1H333J	MG RESISTOR	33kΩ 1/20W J	
R229	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R231	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R232	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R233	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R234	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R235	RK73JB1H153J	MG RESISTOR	15kΩ 1/20W J	
R236	RK73GB2A470J	MG RESISTOR	47Ω 1/10W J	
R237	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	
R238	RK73JB1H683J	MG RESISTOR	68kΩ 1/20W J	
R239	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	
R240	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	D75AK
R242	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	D75AK

⚠ Symbol No.	Part No.	Part Name	Description	Local
R243	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R244	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	
R245	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R246	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	D75AK
R247	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R248	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R249	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R250	RK73HB1J181J	MG RESISTOR	180Ω 1/16W J	
R251	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	D75AK
R252	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	D75AK
R253	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R254	RK73HB1J330J	MG RESISTOR	33Ω 1/16W J	
R255	RK73GB2A220J	MG RESISTOR	22Ω 1/10W J	
R256	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R257	RK73JB1H823J	MG RESISTOR	82kΩ 1/20W J	D75AK
R258	RK73JB1H393J	MG RESISTOR	39kΩ 1/20W J	D75AK
R259	RK73GB2A100J	MG RESISTOR	10Ω 1/10W J	D75AK
R260	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R262	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R263	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R264	RK73HB1J151J	MG RESISTOR	150Ω 1/16W J	D75AK
R265	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R266	RK73HB1J391J	MG RESISTOR	390Ω 1/16W J	
R267	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R269	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R270	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R271	RK73HB1J121J	MG RESISTOR	120Ω 1/16W J	
R272	RK73HB1J120J	MG RESISTOR	12Ω 1/16W J	
R273	RK73HB1J120J	MG RESISTOR	12Ω 1/16W J	
R274	RK73HB1J820J	MG RESISTOR	82Ω 1/16W J	
R275	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R276	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R277	RK73JB1H680J	MG RESISTOR	68Ω 1/20W J	
R278	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R400	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R401	RK73JB1H121J	MG RESISTOR	120Ω 1/20W J	
R402	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R403	RK73JB1H272J	MG RESISTOR	2.7kΩ 1/20W J	
R404	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R405	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R406	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R407	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R408	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R409	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R410	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R411	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R412	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R413	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R414	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R415	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R416	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R417	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R418	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R419	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R420	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R421	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R422	RK73JB1H181J	MG RESISTOR	180Ω 1/20W J	
R423	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R424	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R425	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R426	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R428	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R429	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R430	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R431	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R434	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R435	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R437	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R439	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R440	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R441	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R442	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R443	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R444	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R445	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R446	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R447	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R449	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R450	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R451	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R452	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R453	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R455	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R456	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R457	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R459	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R460	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R461	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R462	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R463	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R464	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R465	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R466	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R467	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R468	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	D75AK
R472	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R475	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R476	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R477	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R478	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R500	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R501	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R502	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R503	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R504	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R505	RK73JB1H272J	MG RESISTOR	2.7kΩ 1/20W J	
R506	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R508	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R509	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R510	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R511	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R512	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R513	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R514	RK73HH1J273D	MG RESISTOR	27kΩ 1/16W D	
R515	RK73HH1J562D	MG RESISTOR	5.6kΩ 1/16W D	
R516	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R517	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R518	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R519	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R520	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R521	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R522	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R523	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R524	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R525	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R526	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R527	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R528	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R529	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R530	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R531	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R532	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R533	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R534	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R535	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R536	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R537	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R538	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R539	RK73JB1H181J	MG RESISTOR	180Ω 1/20W J	
R540	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R541	RK73JB1H152J	MG RESISTOR	1.5kΩ 1/20W J	
R542	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R543	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R545	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R546	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R547	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R549	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R550	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R553	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R554	RK73JB1H154J	MG RESISTOR	150kΩ 1/20W J	
R557	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R558	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R559	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R560	RK73JB1H121J	MG RESISTOR	120Ω 1/20W J	
R561	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R562	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R563	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R564	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R566	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R567	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R571	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R572	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R575	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R577	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R578	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R579	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R600	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R601	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R602	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R603	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R604	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R605	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R606	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R607	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R608	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R609	RK73JB1H333J	MG RESISTOR	33kΩ 1/20W J	
R610	RK73JB1H223J	MG RESISTOR	22kΩ 1/20W J	
R611	RK73JB1H333J	MG RESISTOR	33kΩ 1/20W J	
R612	RK73JB1H223J	MG RESISTOR	22kΩ 1/20W J	
R613	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R614	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R615	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R616	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R617	RK73JB1H560J	MG RESISTOR	56Ω 1/20W J	
R618	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R619	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R620	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R621	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R624	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R625	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R626	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R627	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R628	RK73JB1H560J	MG RESISTOR	56Ω 1/20W J	
R630	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R631	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R700	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R701	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R702	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R703	RK73HH1J681D	MG RESISTOR	680Ω 1/16W D	
R704	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R705	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R706	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R707	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R709	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R710	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R711	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R712	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R713	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R714	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R715	RK73JB1H822J	MG RESISTOR	8.2kΩ 1/20W J	
R717	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R718	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R719	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R720	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R721	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R722	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R723	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R724	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R725	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R726	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R727	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R728	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R729	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R730	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R731	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R732	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R733	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R734	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R735	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R736	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R737	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R738	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R739	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R740	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R800	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R801	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R802	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R803	RK73HH1J681D	MG RESISTOR	680Ω 1/16W D	
R804	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R805	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R806	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R807	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R809	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R810	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R811	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R812	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R813	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R815	RK73JB1H822J	MG RESISTOR	8.2kΩ 1/20W J	
R816	RK73JB1H822J	MG RESISTOR	8.2kΩ 1/20W J	
R818	RK73JB1H223J	MG RESISTOR	22kΩ 1/20W J	
R819	RK73JB1H333J	MG RESISTOR	33kΩ 1/20W J	
R820	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R821	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R822	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R823	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R824	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R825	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R826	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R827	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R828	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R829	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R830	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R831	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R832	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R833	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R834	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R837	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R901	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R903	RK73JB1H684J	MG RESISTOR	680kΩ 1/20W J	
R905	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R906	RK73JB1H334J	MG RESISTOR	330kΩ 1/20W J	
R907	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R908	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R910	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R914	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R915	RK73JB1H684J	MG RESISTOR	680kΩ 1/20W J	
R916	RK73JB1H105J	MG RESISTOR	1MΩ 1/20W J	
R917	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R918	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R919	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R920	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R921	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R922	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R923	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R924	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R925	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R926	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R927	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R928	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R929	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R930	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R1001	RK73JB1H153J	MG RESISTOR	15kΩ 1/20W J	
R1002	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R1004	RK73JB1H684J	MG RESISTOR	680kΩ 1/20W J	
R1005	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R1007	RK73JB1H223J	MG RESISTOR	22kΩ 1/20W J	
R1008	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R1009	RK73JB1H223J	MG RESISTOR	22kΩ 1/20W J	
R1010	RK73JB1H334J	MG RESISTOR	330kΩ 1/20W J	
R1011	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R1012	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R1014	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R1018	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R1019	RK73JB1H684J	MG RESISTOR	680kΩ 1/20W J	
R1021	RK73JB1H105J	MG RESISTOR	1MΩ 1/20W J	
R1022	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R1023	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R1024	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R1025	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1026	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1028	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1029	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1030	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1031	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1032	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1033	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1034	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1035	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R1036	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R1037	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R1038	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R1039	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1040	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R1041	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R1042	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1043	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1100	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1101	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1102	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R1103	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R1104	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R1105	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R1106	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R1109	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1110	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1111	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1112	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1113	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1114	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1115	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1116	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1117	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1118	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1119	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1120	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1122	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1123	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1124	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1125	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1126	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1127	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R1128	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1129	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1131	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1132	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1133	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1134	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1135	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1136	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R1137	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1138	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1139	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1140	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1141	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1142	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1143	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1144	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1145	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R1146	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1147	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R1148	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1149	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1150	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1151	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1152	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1153	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1154	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1155	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1156	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1157	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1158	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1159	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1160	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R1161	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R1162	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R1163	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1164	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1165	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1201	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	D75AK
R1202	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	D75EE,D75ET
R1700	RK73JB1H183J	MG RESISTOR	18kΩ 1/20W J	
R1701	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R1702	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R1703	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1704	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R1705	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1706	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1707	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1708	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1709	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R1710	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R1711	RK73JB1H181J	MG RESISTOR	180Ω 1/20W J	
R1712	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R1713	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R1714	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R1715	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1716	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1717	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R1718	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R1719	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1720	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1721	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R1722	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R1723	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R1724	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R1725	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1726	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1728	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R1729	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1730	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R1731	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R1732	RK73JB1H122J	MG RESISTOR	1.2kΩ 1/20W J	
R1733	RK73JB1H122J	MG RESISTOR	1.2kΩ 1/20W J	
R1734	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R1735	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R1736	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R1737	RK73JB1H273J	MG RESISTOR	27kΩ 1/20W J	
R1738	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R1739	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1740	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R1741	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1742	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R1743	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R1744	RK73JB1H822J	MG RESISTOR	8.2kΩ 1/20W J	
R1851	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R1852	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1853	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R1854	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1855	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R1856	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1857	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1858	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R1859	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R1860	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R1861	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R1862	RK73JB1H821J	MG RESISTOR	820Ω 1/20W J	
R2000	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2001	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R2014	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R2015	RK73JB1H124J	MG RESISTOR	120kΩ 1/20W J	
R2017	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2018	RK73HH1J472D	MG RESISTOR	4.7kΩ 1/16W D	
R2019	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2020	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2021	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2022	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2024	RK73HH1J563D	MG RESISTOR	56kΩ 1/16W D	
R2025	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2026	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2027	RK73HH1J153D	MG RESISTOR	15kΩ 1/16W D	
R2029	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2032	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R2033	RK73GB2A101J	MG RESISTOR	100Ω 1/10W J	
R2034	RK73HH1J392D	MG RESISTOR	3.9kΩ 1/16W D	
R2035	RK73HH1J392D	MG RESISTOR	3.9kΩ 1/16W D	
R2036	RK73JB1H334J	MG RESISTOR	330kΩ 1/20W J	
R2037	RK73JB1H334J	MG RESISTOR	330kΩ 1/20W J	
R2038	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R2040	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R2041	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2042	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2043	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R2046	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R2047	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R2049	RK73FB2B101J	MG RESISTOR	100Ω 1/8W J	
R2050	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R2051	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R2053	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2054	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R2055	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R2056	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2057	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R2059	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R2060	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R2061	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R2062	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2063	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2064	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R2065	RK73JB1H153J	MG RESISTOR	15kΩ 1/20W J	
R2066	RK73JP1H562D	MG RESISTOR	5.6kΩ 1/20W D	
R2067	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2068	RK73JB1H183J	MG RESISTOR	18kΩ 1/20W J	
R2069	RK73JB1H183J	MG RESISTOR	18kΩ 1/20W J	
R2070	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2071	RK73JB1H224J	MG RESISTOR	220kΩ 1/20W J	
R2072	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2073	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2074	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2076	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2078	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	D75AK
R2079	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	D75EE,D75ET
R2080	RK73HH1J563D	MG RESISTOR	56kΩ 1/16W D	
R2081	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R2082	RK73JP1H473D	MG RESISTOR	47kΩ 1/20W D	
R2083	RK73JP1H473D	MG RESISTOR	47kΩ 1/20W D	
R2084	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R2085	RK73JB1H153J	MG RESISTOR	15kΩ 1/20W J	
R2086	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R2087	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2088	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2089	RK73JB1H123J	MG RESISTOR	12kΩ 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R2090	RK73JB1H334J	MG RESISTOR	330kΩ 1/20W J	
R2091	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2092	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2093	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2094	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2095	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2096	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2097	RK73GH2A49R9D	MG RESISTOR	49.9Ω 1/10W D	
R2098	RK73HH1J102D	MG RESISTOR	1kΩ 1/16W D	
R2099	RK73HH1J102D	MG RESISTOR	1kΩ 1/16W D	
R2103	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2106	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2111	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2112	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2113	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2114	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2115	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2116	RK73JB1H560J	MG RESISTOR	56Ω 1/20W J	
R2117	RK73JB1H331J	MG RESISTOR	330Ω 1/20W J	
R2118	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2119	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R2120	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2121	RK73JB1H560J	MG RESISTOR	56Ω 1/20W J	
R2124	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R2125	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2126	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2127	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R2129	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R2131	RK73JB1H560J	MG RESISTOR	56Ω 1/20W J	
R2132	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R2133	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2134	RK73HH1J274D	MG RESISTOR	270kΩ 1/16W D	
R2135	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2136	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R2137	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2138	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2139	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2140	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2141	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2142	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R2143	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2144	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2145	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2146	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2147	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2148	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2149	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2150	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2151	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2152	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2153	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2154	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2155	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2156	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2157	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2158	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2159	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2160	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2161	RK73HH1J123D	MG RESISTOR	12kΩ 1/16W D	
R2162	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R2163	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2164	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2165	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R2166	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R2167	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2168	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2169	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2171	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R2172	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2174	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2175	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2177	RK73JB1H470J	MG RESISTOR	47Ω 1/20W J	
R2179	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2180	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2183	RK73EB2E1R2J	MG RESISTOR	1.2Ω 1/4W J	
R2184	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2187	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2188	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2189	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2190	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2191	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2194	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2196	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2197	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2198	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2199	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2200	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2201	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2202	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R2203	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2204	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2205	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R2207	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2209	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2210	RK73JP1H473D	MG RESISTOR	47kΩ 1/20W D	
R2211	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2212	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R2214	RK73HH1J273D	MG RESISTOR	27kΩ 1/16W D	
R2215	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2216	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R2217	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2218	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2219	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2220	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2221	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2222	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2223	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2224	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2225	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2226	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2227	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2228	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2229	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2230	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2231	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2232	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2233	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2234	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2235	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2236	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2237	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2238	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2239	RK73JB1H393J	MG RESISTOR	39kΩ 1/20W J	
R2240	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2241	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2242	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2243	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2244	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2245	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R2246	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2247	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2248	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2249	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2250	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2251	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2252	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2253	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2254	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2255	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2256	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2257	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2258	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2259	RK73GB2A103J	MG RESISTOR	10kΩ 1/10W J	
R2260	RK73HB1J332J	MG RESISTOR	3.3kΩ 1/16W J	
R2262	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2263	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2264	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2265	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2266	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2267	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2268	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2269	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2270	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2271	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2272	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2273	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2274	RK73JB1H151J	MG RESISTOR	150Ω 1/20W J	
R2275	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2276	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2277	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2278	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2279	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2280	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2281	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2283	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2284	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2285	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R2286	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2287	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R2288	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2290	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2291	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2292	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2293	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2294	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2295	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2296	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2297	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2298	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2299	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2300	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2301	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2303	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2304	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2306	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2307	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2308	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2309	RK73JB1H183J	MG RESISTOR	18kΩ 1/20W J	
R2310	RK73JB1H332J	MG RESISTOR	3.3kΩ 1/20W J	
R2313	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2314	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2317	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2318	RK73HB1J273J	MG RESISTOR	27kΩ 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R2319	RK73HB1J181J	MG RESISTOR	180Ω 1/16W J	
R2320	RK73JB1H182J	MG RESISTOR	1.8kΩ 1/20W J	
R2321	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R2322	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2323	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R2324	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2327	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2328	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2329	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2330	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2332	RK73JB1H681J	MG RESISTOR	680Ω 1/20W J	
R2334	RK73JB1H471J	MG RESISTOR	470Ω 1/20W J	
R2335	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2337	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2338	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2339	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R2341	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2342	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2343	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2344	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2345	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2346	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2347	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2348	RK73HB1J106J	MG RESISTOR	10MΩ 1/16W J	
R2349	RK73HB1J106J	MG RESISTOR	10MΩ 1/16W J	
R2350	RK73JB1H474J	MG RESISTOR	470kΩ 1/20W J	
R2352	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2353	RK73JB1H100J	MG RESISTOR	10Ω 1/20W J	
R2354	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2355	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2356	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2357	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R2358	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R2360	RK73GB2A152J	MG RESISTOR	1.5kΩ 1/10W J	
R2361	RK73HH1J122D	MG RESISTOR	1.2kΩ 1/16W D	
R2362	RK73HH1J122D	MG RESISTOR	1.2kΩ 1/16W D	
R2365	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2366	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R2367	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2368	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2369	RK73HH1J123D	MG RESISTOR	12kΩ 1/16W D	
R2370	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R2371	RK73JB1H684J	MG RESISTOR	680kΩ 1/20W J	
R2372	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
R2373	RK73JB1H563J	MG RESISTOR	56kΩ 1/20W J	
R2374	RK73JB1H683J	MG RESISTOR	68kΩ 1/20W J	
R2375	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R2376	RK73JB1H333J	MG RESISTOR	33kΩ 1/20W J	
R2377	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R2379	RK73HH1J821D	MG RESISTOR	820Ω 1/16W D	
R2380	RK73JB1H101J	MG RESISTOR	100Ω 1/20W J	
R2381	RK73HH1J474D	MG RESISTOR	470kΩ 1/16W D	
R2382	RK73JB1H221J	MG RESISTOR	220Ω 1/20W J	
R2383	RK73HH1J474D	MG RESISTOR	470kΩ 1/16W D	
R2384	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R2386	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R2387	RK73JB1H000J	MG RESISTOR	0Ω 1/20W J	
L100	LB73G0DK-004	CHIP FERRITE		
L101	LB73F0AH-003	CHIP FERRITE		
L102	LB73F0AH-003	CHIP FERRITE		
L103	LR73P0AX4R7N	CHIP INDUCTOR		
L104	LR77Z0AW2R2M	CHIP INDUCTOR		
L105	LR77Z0AW1R0M	CHIP INDUCTOR		

⚠ Symbol No.	Part No.	Part Name	Description	Local
L106	LB73F0AH-003	CHIP FERRITE		
L107	LB73F0AH-003	CHIP FERRITE		
L108	LB73F0AH-003	CHIP FERRITE		
L109	LB73F0AH-003	CHIP FERRITE		
L110	LB73F0AH-001	CHIP FERRITE		
L111	LB73F0AH-001	CHIP FERRITE		
L112	LB73F0AH-003	CHIP FERRITE		
L200	LK73H0BJ56NJ	M.CHIP INDUCTOR		
L201	LK73H0BJ56NJ	M.CHIP INDUCTOR		
L202	LK73H0BJ33NJ	M.CHIP INDUCTOR		D75AK
L203	LK73H0BJ33NJ	M.CHIP INDUCTOR		D75AK
L204	LK73H0BJ47NJ	M.CHIP INDUCTOR		
L205	LK73H0BJ47NJ	M.CHIP INDUCTOR		
L207	LR79G0CQR10G	CHIP INDUCTOR		
L208	LR79G0CQ27NG	CHIP INDUCTOR		
L209	LR79G0CQ22NG	CHIP INDUCTOR		
L210	LB73H0BU-005	CHIP FERRITE		
L211	LR79G0GK56NG	CHIP INDUCTOR		
L212	LR79G0CQR39G	CHIP INDUCTOR		
L213	LR79G0CQR39G	CHIP INDUCTOR		
L214	LR79G0CQR39G	CHIP INDUCTOR		
L215	LR79G0CQ8N2C	CHIP INDUCTOR		D75AK
L216	LR79G0CQ18NG	CHIP INDUCTOR		
L217	LR79G0CQ3N9C	CHIP INDUCTOR		
L218	LR79G0CQ6N8C	CHIP INDUCTOR		D75AK
L219	LR79G0CQR39G	CHIP INDUCTOR		
L220	LR79G0CQR39G	CHIP INDUCTOR		
L221	LR79G0CQR39G	CHIP INDUCTOR		
L222	LR79G0CQR39G	CHIP INDUCTOR		D75AK
L223	LR79Z0DC45N5J	CHIP INDUCTOR		
L224	LR79Z0DC45N5J	CHIP INDUCTOR		D75AK
L225	LR79Z0KJ7N5J	CHIP INDUCTOR		
L226	L34-4984-05	AIR CORE COIL		
L227	LR79Z0DD27N4J	CHIP INDUCTOR		
L228	LR79Z0KJ3N3J	CHIP INDUCTOR		
L230	LR79Z0DC12NJ	CHIP INDUCTOR		D75AK
L231	LR79Z0DC45N5J	CHIP INDUCTOR		
L232	LR79Z0CAR22J	CHIP INDUCTOR		
L233	LR73Z0AE2R2J	CHIP INDUCTOR		D75AK
L234	LR73Z0AE2R2J	CHIP INDUCTOR		
L235	LR79Z0DC27N9J	CHIP INDUCTOR		
L236	L34-4551-05	AIR CORE COIL		
L237	LR79G0CQR39G	CHIP INDUCTOR		
L238	LR79Z0DC27N9J	CHIP INDUCTOR		
L239	LR79Z0DC33N6J	CHIP INDUCTOR		
L240	LR79Z0DD12N2J	CHIP INDUCTOR		
L241	LR79Z0DC45N5J	CHIP INDUCTOR		
L242	LR79Z0DC39N9J	CHIP INDUCTOR	39.9nH	
L243	LR79Z0DC22NJ	CHIP INDUCTOR		
L244	LR79G0CQR39G	CHIP INDUCTOR		
L245	LR79Z0DC22NJ	CHIP INDUCTOR		
L246	L34-4548-05	AIR CORE COIL		
L247	LR79Z0DC45N5J	CHIP INDUCTOR		
L248	LR79Z0DC27N9J	CHIP INDUCTOR		
L249	LK73G0BW4R7M	M.CHIP INDUCTOR		
L250	LK73G0BW4R7M	M.CHIP INDUCTOR		
L251	LR79Z0DC16N7J	CHIP INDUCTOR		
L252	LR79Z0DC12NJ	CHIP INDUCTOR		
L280	LK73H0BJ12NJ	M.CHIP INDUCTOR		
L281	LK73H0BJ39NJ	M.CHIP INDUCTOR		
L400	LR79G0CQR33G	CHIP INDUCTOR		
L401	LR79Z0JHR56J	CHIP INDUCTOR		
L404	LR79G0CQ27NG	CHIP INDUCTOR		
L405	LR79G0CQ10NG	CHIP INDUCTOR		

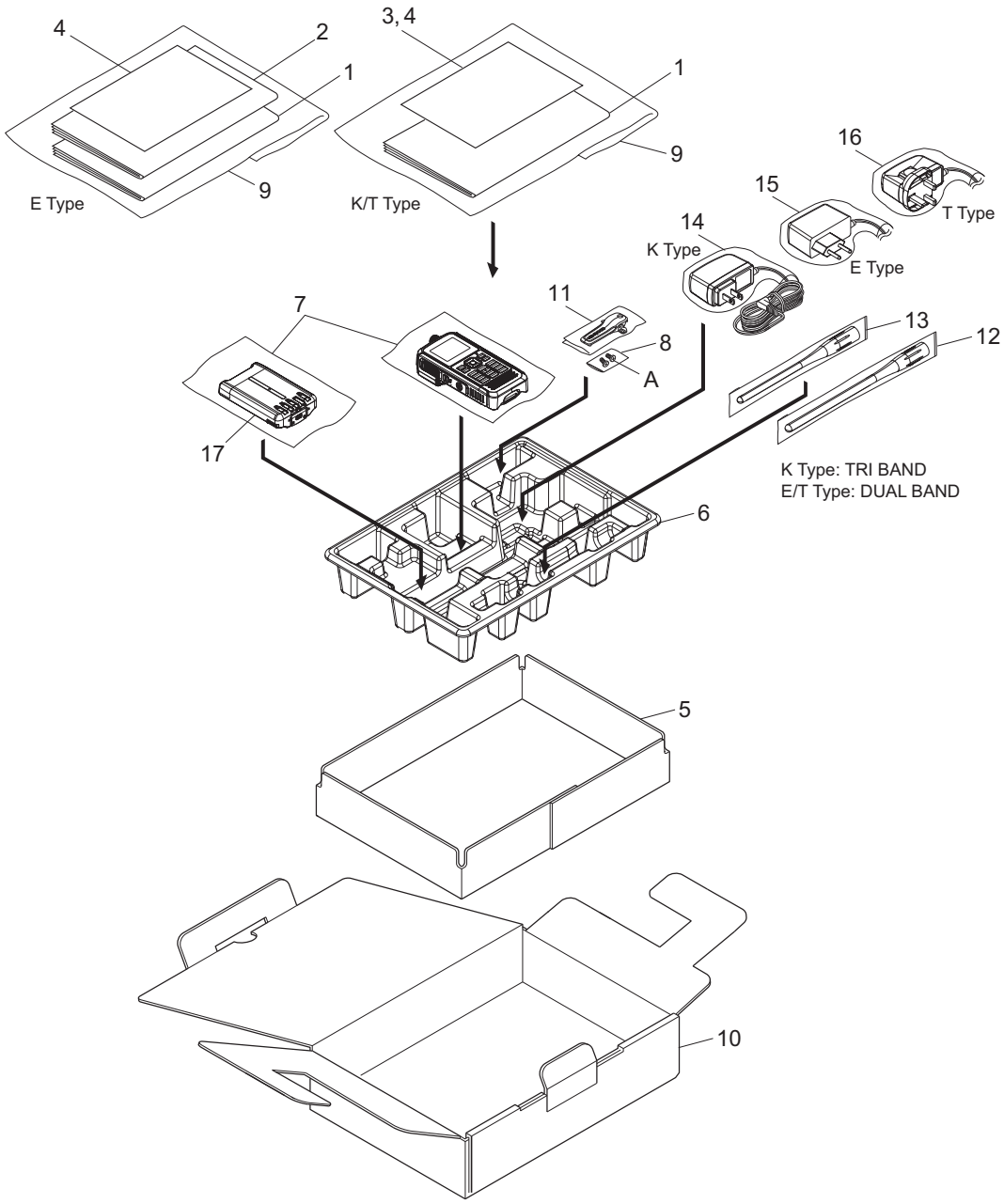
⚠ Symbol No.	Part No.	Part Name	Description	Local
L406	LR79G0CQ27NG	CHIP INDUCTOR		
L407	LR79G0CQ10NG	CHIP INDUCTOR		
L408	LR79G0CQR39G	CHIP INDUCTOR		
L409	LR79G0CQ47NG	CHIP INDUCTOR		
L410	LR79G0CQR22G	CHIP INDUCTOR		
L412	LR79G0CQ47NG	CHIP INDUCTOR		
L413	LK73H0BJ10NJ	M.CHIP INDUCTOR		
L415	LK73H0BJ15NJ	M.CHIP INDUCTOR		
L416	LK73H0BJ15NJ	M.CHIP INDUCTOR		
L417	LR79G0CQR39G	CHIP INDUCTOR		
L418	LK73H0BJ15NJ	M.CHIP INDUCTOR		
L419	LR79G0CQ47NG	CHIP INDUCTOR		
L420	LR79G0CQR22G	CHIP INDUCTOR		
L421	LR79G0CQR22G	CHIP INDUCTOR		
L422	LR79G0CQR10G	CHIP INDUCTOR		
L423	LR79H0STR22G	CHIP INDUCTOR		
L424	LR79G0CQ27NG	CHIP INDUCTOR		
L425	LK73H0BJ33NJ	M.CHIP INDUCTOR		
L426	LR79H0STR22G	CHIP INDUCTOR		
L427	LR79G0CQ27NG	CHIP INDUCTOR		
L500	LR79G0CQR33G	CHIP INDUCTOR		
L501	LR79Z0JHR56J	CHIP INDUCTOR		
L504	LR79G0CQ27NG	CHIP INDUCTOR		
L506	LR79G0CQ10NG	CHIP INDUCTOR		
L508	LR79G0CQ27NG	CHIP INDUCTOR		
L509	LR79G0CQ10NG	CHIP INDUCTOR		
L510	LR79G0CQR39G	CHIP INDUCTOR		
L511	LR79G0CQ47NG	CHIP INDUCTOR		
L512	LR79G0CQR22G	CHIP INDUCTOR		
L513	LR79G0CQ47NG	CHIP INDUCTOR		
L600	LF77J0AAR39H	F.C. INDUCTOR		
L601	LF77J0AAR39H	F.C. INDUCTOR		
L602	LF77J0AAR12H	F.C. INDUCTOR		
L603	LF77J0AAR12H	F.C. INDUCTOR		
L700	LB73H0BU-003	CHIP FERRITE		
L701	LK73H0BJR22G	M.CHIP INDUCTOR		
L703	LK73H0BJ18NJ	M.CHIP INDUCTOR		
L704	LK73H0BJ12NJ	M.CHIP INDUCTOR		
L705	LK73H0BJ27NJ	M.CHIP INDUCTOR		
L706	LK73H0BJ33NJ	M.CHIP INDUCTOR		
L707	LK73H0BJ27NJ	M.CHIP INDUCTOR		
L708	LK73H0BJ56NJ	M.CHIP INDUCTOR		
L709	LK73H0BJ56NJ	M.CHIP INDUCTOR		
L710	LK73H0BJ47NJ	M.CHIP INDUCTOR		
L800	LB73H0BU-003	CHIP FERRITE		
L801	LK73H0BJR22G	M.CHIP INDUCTOR		
L802	LK73H0BJ39NJ	M.CHIP INDUCTOR		
L803	LK73H0BJ22NJ	M.CHIP INDUCTOR		
L804	LF77J0AAR18H	F.C. INDUCTOR		
L805	LF77J0AAR18H	F.C. INDUCTOR		
L807	LK73H0BJ18NJ	M.CHIP INDUCTOR		
L808	LK73H0BJ33NJ	M.CHIP INDUCTOR		
L809	LK73H0BJ27NJ	M.CHIP INDUCTOR		
L810	LK73H0BJ33NJ	M.CHIP INDUCTOR		
L811	LF77J0AAR39H	F.C. INDUCTOR		
L900	LR79G0CQR47G	CHIP INDUCTOR		
L901	LR79G0CQR33G	CHIP INDUCTOR		
L1000	LR79G0CQR47G	CHIP INDUCTOR		
L1001	LR79G0CQR33G	CHIP INDUCTOR		
L1700	LR79G0CQR12G	CHIP INDUCTOR		
L1701	LR79G0CQR15G	CHIP INDUCTOR		
L1702	LR79G0CQR15G	CHIP INDUCTOR		
L1703	LR79G0CQR47G	CHIP INDUCTOR		
L1704	LK73H0BJ56NJ	M.CHIP INDUCTOR		
L2000	LB73G0DV-001	CHIP FERRITE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
L2001	L3D-0074-04	CHOKE COIL		
L2002	LB73G0DV-001	CHIP FERRITE		
L2003	LK73G0BA100K	M.CHIP INDUCTOR		
L2004	LB73G0DK-004	CHIP FERRITE		
L2005	LB73G0DK-004	CHIP FERRITE		
L2007	LB73H0GH-002	CHIP FERRITE		
L2008	LB73G0DV-001	CHIP FERRITE		
L2009	LB73G0DV-001	CHIP FERRITE		
L2010	LB73G0DV-001	CHIP FERRITE		
L2011	LB73G0DK-004	CHIP FERRITE		
L2012	L92-1101-05	CHIP FERRITE		
L2013	L92-1101-05	CHIP FERRITE		
L2014	LB73G0DV-001	CHIP FERRITE		
L2015	LB73H0GH-001	CHIP FERRITE		
L2016	LB73H0GH-001	CHIP FERRITE		
L2017	LB73G0DK-004	CHIP FERRITE		
L2018	L79-1984-05	FILTER		
L2019	LB73H0GH-001	CHIP FERRITE		
L2020	L79-1984-05	FILTER		
L2021	LB73H0GH-001	CHIP FERRITE		
L2022	LB73G0DK-004	CHIP FERRITE		
L2023	L79-1984-05	FILTER		
L2024	L79-1984-05	FILTER		
L2025	L79-1984-05	FILTER		
L2026	LB73G0DK-004	CHIP FERRITE		
L2027	LB73H0GH-001	CHIP FERRITE		
L2028	LB73G0DK-004	CHIP FERRITE		
L2029	LB73H0GH-001	CHIP FERRITE		
L2030	LB73G0DV-001	CHIP FERRITE		
L2031	LB73H0GH-002	CHIP FERRITE		
L2032	L92-0487-05	CHIP FERRITE		
L2033	L92-0487-05	CHIP FERRITE		
L2034	LR79G0CQ56NG	CHIP INDUCTOR		
L2035	LR79G0CQ12NG	CHIP INDUCTOR		
L2036	LR79G0CQR10G	CHIP INDUCTOR		
L2037	LR79G0CQR27G	CHIP INDUCTOR		
L2038	LK73H0CK27NJ	M.CHIP INDUCTOR		
L2039	LK73H0BJ10NJ	M.CHIP INDUCTOR		
L2040	L92-0487-05	CHIP FERRITE		
L2041	LB73H0EC-001	CHIP FERRITE		
L2042	---------	FILTER	Note 2	
L2044	L79-1987-05	FILTER		
L2046	LB73H0EC-001	CHIP FERRITE		
L2047	LK73H0BJ1N8S	M.CHIP INDUCTOR		
L2048	L92-0487-05	CHIP FERRITE		
L2049	L92-0487-05	CHIP FERRITE		
CN1	E40-6962-05	F.C.CONNECTOR		
CN2	J1K-1391-00	BATTERY HOLDER		
CN3	E41-3377-05	F.C.CONNECTOR		
CN4	E40-6421-15	PIN ASSY		
CN5	EC720AA-0506A	FFC FPC CONNE		
CN8	EB770CW-0520A	B TO B CONNE		
CN9	E40-6422-15	SOCKET FOR PIN		
CN11	EB760CW-0520A	B TO B CONNE		
CN13	EB770CU-0806A	B TO B CONNE		
CN14	E41-3377-05	F.C.CONNECTOR		
CN15	EB760CU-0806A	B TO B CONNE		
CN200	E2D-0022-00	TERMINAL		
CN201	E40-6421-15	PIN ASSY		
CN201	E2D-0022-00	TERMINAL		
CN202	E40-6422-15	SOCKET FOR PIN		
CN202	E2D-0058-00	TERMINAL		D75EE,D75 ET

⚠ Symbol No.	Part No.	Part Name	Description	Local
CN501	G0B-0067-00	EARTH SPRING		
E200	F0B-0097-00	RADIATION PLATE		
E700	---------	SHIELDING CASE	Note 2	
E800	---------	SHIELDING CASE	Note 2	
E2000	F10-3236-05	SHIELDING CASE		
E2001	F10-3228-15	SHIELDING CASE		
F1	FZA10BQ-4R0	FUSE (CC)	4.0A	
F2	FZA10BQ-4R0	FUSE (CC)	4.0A	
F3	FZA10AC-1R6	FUSE(CC)	1.6A	
F4	FZA10AC-1R6	FUSE(CC)	1.6A	
J1	---------	USB TERMINAL	Note 2	
J2	E1B-0021-10	PHONE JACK		
J3	---------	SD CARD CONNE	Note 2	
J4	E0E-0045-00	RF C.RECEPTACLE		
J7	E0D-0045-00	DC JACK		
MIC1	T9B-0054-00	MIC ELEMENT	Note 3	
OT1	F10-3227-05	SHIELDING COVER		
OT2	F1B-0040-00	SHIELDING CASE		
OT3	J87-0005-35	FPC(LEAD FREE)		
S1	S70-0514-05	TACTILE PUSH SW		
S2	S70-0514-05	TACTILE PUSH SW		
S3	S70-0514-05	TACTILE PUSH SW		
S1851	S70-0519-05	TACTILE PUSH SW		
S1852	S70-0519-05	TACTILE PUSH SW		
S1853	S70-0519-05	TACTILE PUSH SW		
S1854	S70-0519-05	TACTILE PUSH SW		
S1855	S70-0519-05	TACTILE PUSH SW		
S1856	S70-0519-05	TACTILE PUSH SW		
S1857	S70-0519-05	TACTILE PUSH SW		
S1858	S70-0519-05	TACTILE PUSH SW		
S1859	S70-0519-05	TACTILE PUSH SW		
S1860	S70-0519-05	TACTILE PUSH SW		
S1861	S70-0519-05	TACTILE PUSH SW		
S1862	S70-0519-05	TACTILE PUSH SW		
S1863	S70-0519-05	TACTILE PUSH SW		
S1864	S70-0519-05	TACTILE PUSH SW		
S1865	S70-0519-05	TACTILE PUSH SW		
S1866	S70-0519-05	TACTILE PUSH SW		
S1867	S70-0519-05	TACTILE PUSH SW		
S1868	S70-0519-05	TACTILE PUSH SW		
S1869	S70-0519-05	TACTILE PUSH SW		
S1870	S70-0519-05	TACTILE PUSH SW		
S1871	S70-0519-05	TACTILE PUSH SW		
TH200	B57331V2104J	THERMISTOR		
TH900	NCP15XV103J03	N THERMISTOR		
TH1000	NCP15XV103J03	N THERMISTOR		
TH2000	NCP18WB473J0S	N THERMISTOR		
X600	L7H-0176-00	TCXO		
X601	L7H-0177-00	TCXO		
X1100	L7J-0161-00	QUARTZ CRYSTAL		
X2000	L77-1802-05	QUARTZ CRYSTAL		
X2001	L7H-0175-00	TCXO		
X2002	L7H-0178-00	TCXO		
X2003	L7H-0164-00	TCXO		
X2004	L7H-0180-00	SPXO		
X2005	L77-1802-05	QUARTZ CRYSTAL		
XF1	L7B-0061-00	MCF		
XF2	L7B-0062-00	MCF		

Packing materials and accessories parts list

Block No.M2MM



Packing and accessories

Block No. [M][2][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	B5A-4344-00	INST.MANUAL	ENG/SPA/FRE	
2	B5A-4345-00	INST.MANUAL	GER/DUT/ITA	D75EE
3	---------	WARRANTY CARD	K	D75AK
4	---------	WARRANTY CARD	E,T	D75EE,D75ET
5	---------	PACKING FIXTURE	BOX FRAME	
6	---------	PACKING FIXTURE	BOX TRAY	
7	---------	PROTECTION BAG	SET & BATTERY(x2)	
8	---------	PROTECTION BAG	BELT HOOK SCREW	
9	---------	PROTECTION BAG	MANUAL	
10	H5A-2314-00	ITEM CARTON		
11	J29-0764-35	HOOK ASSY	ACC, KBH-20	

⚠ Symbol No.	Part No.	Part Name	Description	Local
12	T9A-0034-00	WHIP ANTENNA	ACC, TRI BAND	D75AK
13	T90-1106-05	WHIP ANTENNA	ACC, DUAL BAND	D75EE,D75ET
14	W0H-0160-00	AC ADAPTER (CC)	ACC, K-TYPE	D75AK
15	W0H-0161-00	AC ADAPTER (CC)	ACC, E-TYPE	D75EE
16	W0H-0162-00	AC ADAPTER (CC)	ACC, T-TYPE	D75ET
17	---------	BATTERY PACK(CC	KNB-75LA	
A	N30-3006-43	PAN HEAD SCREW	ACC, BELT HOOK(x2)	

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