SB-50 SIDEBANDER SIX

INSTRUCTION MANUAL

6603-00038

1.0 GENERAL DESCRIPTION AND SPECIFICATIONS

1.1 The SBE Sidebander Six Transceiver is a fully solid-state two-way radio intended for use in a portion of the Six Meter VHF Amateur Band. The unit will operate in both a standard full carrier AM mode, as well as fully suppressed A3J single sideband mode, upper sideband only. The Sidebander Six features fully synthesized 23 channel operation, variable crystal oscillator (VXO), receiver incremental tuning (RIT), "S" power meter, crystal lattice filter, and single conversion receiver with fractional microvolt sensitivity. The equipment comes complete with microphone, hanger, mobile mounting bracket, screws, two spare fuses, and two spare indicating lamps.

1.2 General

Channels	23 (VXO tuning range ±6KHz per channel). 10KHz channel spacing.
Frequency Range	50.050 to 50.280 MHz.
Frequency Control	Synthesized.
Variable Crystal Oscillator (VXO)	Varies Transmitter/Receiver frequencies ±6KHz.
Receiver Incremental Tuning (RIT)	Varies receiver frequency only ±1KHz
Frequency Stability	.003% nominal over rated temperature range.
Operating Temperature Range	-20°C to +50°C.
Microphone	Dynamic w/PTT switch, coil cord, and Phone Plug (supplied).
Input Voltage	13.8V DC
Power Drain	Transmit: 35 watts maximum at full rate output. Receive: 8 watts at full audio.
Size	2-3/4"h x 8-1/2"w x 9-3/4"d
Weight	7 pounds
Antenna Connector	UHF, SO-239

1.3 Transmitter

Power Input	SSB 20 watts PEP; AM 8 watts.
Modulation	AM, Class B, 6A3
Modulation Capability	AM, 100%
Intermodulation Distortion	SSB: 3rd order ≤ -20db.
Carrier Suppression	SSB: ≤ -40db.
Unwanted Sideband Suppression	≤ -40db.
Frequency Response	AM and SSB 350-2500 Hz.

Output Impedance	50 ohm unbalanced.
Automatic Level Control	Adjustable, Holds P.E.P. to 1db increase with 10db increase of input.
RFO Meter	Reads 0-20 watts.

1.4 Receiver

Sensitivity	SSB: $\leq$ 0.5uV for 10db S+N/N. AM: $\leq$ 1.0uV for 10db S+N/N.
Selectivity	SSB, AM: 20db @ 3 KHz. 60db @ 6 KHz.
Image Rejection	>60db
IF Frequency	7.8 MHz.
Automatic Gain Control (AGC)	<10db change in audio output for input of 10uV to 500mV.
Squelch	Adjustable from <.5uV to >30uV.
Noise Blanker	Series gate type (uses FET).
Audio Output	>2 watts into 8 ohm load with 10% total distortion.
Speaker	Built-in, oval, 8 ohm
External Speaker (not supplied)	8 ohm disables internal speaker when connected.
"S" Meter	S9 equals 10uV.

2.0 INSTALLATION

2.1 Antennas

One of the most important elements in achieving optimum system performance is the installation of a good antenna system. Only a properly matched antenna system will allow maximum power transfer from the 50 ohm transmission line to the radiating element. Most quality antennas previously suitable for use on AM will also be satisfactory for SSB. Due to the nature of an SSB transmitter, the VSWR must be kept below 3:1 or linearity of the final amplifier may be affected.

Connect the antenna coaxial cable to the rear panel SO-239 connector with the PL-259 connector supplied. The recommended method of antenna tuning is to use an in-line wattmeter or VSWR bridge to adjust the antenna for minimum reflected power in the AM mode. When the antenna system is adjusted for proper matching in the AM mode, no further adjustment for SSB will be necessary.

2.2 Mobile

The Sidebander Six is supplied with a universal mounting bracket and microphone holder. The transceiver may be mounted in any plane and on any rigid surface, such as underneath an automobile dashboard, truck roof or vertically on a boat bulkhead.

DC Power should be derived directly from the vehicle's battery in order to minimize voltage losses and ignition interference. The unit is designed for a 12 volt negative ground system. Connect the red wire to the positive (+) battery terminal, black wire to the negative (-). If the transceiver's power lead must be lengthened, use #14 (or larger) wire.

2.3 Base Station

For base station operation, the SBE model SBE-3AC Base Station Power Supply is recommended. The supply provides a regulated 13.8 volts DC output with a input voltage of 110-120 volts AC, 50 - 60 Hz.

2.4 Remote Speaker

The external speaker jack on the rear panel is used for remote receiver monitoring. The external speaker should have 8 ohms impedance and be able to handle at least 3 watts. When the external speaker is plugged in, the Sidebander Six's internal speaker is disconnected.

3.0 OPERATION

3.1 Control Functions

3.1.1 Power OFF/ON

The power switch is located under the front panel meter. This is a two position push button switch. In the indented position, power is applied to the transceiver In the "out position", power is removed.

3.1.2 Noise Blanker Switch

The receiver noise blanker is activated by depressing the N. B. Switch. The noise blanker operates in both AM and SSB modes and is effective in reducing or blanking impulses and atmospheric noise to improve reception of weak signals.

3.1.3 AM/SSB

When depressed, this switch places both the receiver and transmitter portions of the transceiver in the AM mode. In the out position the unit is returned to the SSB mode.

3.1.4 Channel Selector

Selects the desired frequency for receiver and transmitter on both AM and SSB. The back-lit dial is numbered from 5 to 28 indicating 50.050 MHz to 50.280 MHz (see figure 1). EXAMPLE: To operate on 50.110 MHz, select "11" on the channel selector. Then set the VXO (see 3.1.5) to the 12 o'clock position. The transceiver is now tuned to 50.110 MHz.

3.1.5 VXO (variable crystal oscillator)

Varies both transmit and receive frequency by +6 KHz from channel selector frequency allowing full coverage of 50.050-50.280 MHz. Operation is similar to a VFO with very fine tuning possible. Turning the "VXO" clockwise or counter clockwise will vary the frequency +6 KHz and -6 KHz respectively.

3.1.6 Volume

Adjust clockwise to increase listening level.

3.1.7 RIT (receiver incremental tuning)

Varies receive frequency by ±1 KHz from the transmit frequency. In the fully counter clockwise "off" position or 12:00 o'clock position, the receiver frequency is the frequency indicated by the channel selector and VXO control. Adjustment varies receive frequency by ±1 KHz. Intended mainly for SSB but varies AM receive frequency also.

3.1.8 Squelch

Blanks out unwanted receiver noise when no signals are present. Dynamic range from 0.5uV to 30uV (approximately). Turn counter clockwise until noise is heard and then adjust clockwise slowly to the point where the speaker quiets. Further clockwise adjustment will require a stronger signal to "break squelch."

3.2 Operating Procedures

3.2.1 Receiving General

The Sidebander Six is capable of receiving AM, CW and SSB signals in the frequency range of 50.050-50.280 MHz. With the AM/SSB switch in the AM position, double sideband full carrier or compatible AM signals will be properly detected. In the SSB position, AM, CW and USB signals will be detected.

Most SSB activity in the six meter band is from 50.100-50.150 MHz. CW activity is from 50.085-50.150 normally. AM operation is above the SSB portion.

3.2.2 Operation Procedure to Receive

1. Apply power.
2. Set volume to midscale.
3. Select desired operating frequency with channel selector and VXO.
4. Select desired mode (USB or AM).
5. (optional) Turn on noise blanker (NB).
6. (optional) Rotate squelch control clockwise to point where noise disappears.
7. When signal is heard adjust RIT for optimum reception.

3.2.3 Operating Procedure to Transmit

1. Select the desired frequency with the channel selector and VXO.
2. Select the desired mode (USB or AM).
3. Depress the push-to-talk switch on the microphone and speak in a normal voice. The RFO meter will indicate the output power in

both AM and SSB modes.

4. Release the push-to-talk switch to receive.

4.0 PRINCIPLES OF OPERATION

4.1 Receiver

The Sidebander Six receiver is single conversion in both AM and SSB modes. The signal flow is almost identical except for the detectors.

The received signal is amplified by RF amplifier TR1 and converted to 7.8 MHz IF by TR2. The IF is filtered by the 7.8 MHz crystal filter F1 and amplified again by IF amplifier IC-1 and TR5. In the AM mode TR7 is also an IF amplifier and the output is detected by diodes D24 and D25. In the SSB mode the IF output is product detected by TR5 and TR6. The detected signals are audio amplified by speaker driver IC-2.

The squelch circuit is composed of noise amplifier TR9 which is driven by the IF output. The output of TR9 is detected by diodes D22, D23 and DC amplified by TR10 and TR11. The output of TR11 switches squelch gate TR12. The squelch sensitivity is controlled by front panel control VR3.

AGC is provided by TR8 which controls the gain of RF amplifier TR1 and IF amplifier TR4.

4.2 Transmitter

The transmitter is also single conversion in both AM and SSB modes. Microphone audio is amplified by TR19, TR20 and TR21 which drives balanced modulator D32-D35. In SSB mode the balanced modulator is unbalanced by shifting the carrier oscillator frequency (TR13, TR14). Also in the AM mode. the transmitter drive is hi-low level modulated by transformer T9 through audio power amplifier IC-2 and the microphone amplifier. The output of the balanced modulator is filtered by 7.8 MHz crystal filter F1 and amplified by IF amplifier TR4. The transmitter IF is converted to 50 MHz by TR22 and power amplified by TR23-TR26. The output of TR25, TR26 is fed to the four stage Pi network L2-L5 and then to the antenna jack at 50 ohms impedance. Transmitter ALC is provided by AGC/ALC amplifier TR8 which controls the gain of TR4.

4.3 Synthesizer

The synthesizer is composed of ten crystals, six in the 16 MHz oscillators (TR15, TR16) are mixed by TR17 producing an additive frequency of approximately 29 MHz. This signal is doubled to approximately 58 MHz by TR18 , T10 and T11. In the transmit mode this local oscillator frequency is mixed with the IF at TR22 producing a difference frequency at the output frequency. In the receive mode the local oscillator converts the on channel frequency at TR2 to the

7.8 MHz IF.

4.4 DC-DC Converter

In the SSB mode only, a DC-DC converter supplies approximately 30VDC to TR25, TR26 for collector voltage. In the AM mode, the converter is switched out of the circuit.

5.0 SERVICE MAINTENANCE

Should your Sidebander Six fail to perform as stated in this manual, it is recommended that SBE be contacted in writing. SBE will either authorize return of the unit to the factory or refer you to an authorized SBE repair agency in your area. DO NOT SHIP EQUIPMENT WITHOUT PRIOR WRITTEN AUTHORIZATION FROM SBE. Your letter to SBE must include the following particulars:

1. Model number and serial number of equipment.
2. Date of purchase of equipment.
3. Nature of problem.
4. Cause of trouble if known.
5. Name of distributor from whom the equipment was purchased.
6. Your return address.
7. Method of shipment by which the equipment should be returned. In addition, include any information that you feel will be helpful in locating or correcting the problem.

6.0 PARTS ORDERING INFORMATION

When ordering replacement parts, you should direct your order to an SBE distributor or SBE, Replacement Parts Department, 220 Airport Boulevard, Watsonville, California 95076. Please furnish the following information:

1. Quantity required.
2. SBE part number and description.
3. Item or symbol number obtained from parts list, schematic, or component location drawing.
4. SBE model number and serial number.

Unless specified, SBE will determine the best method of shipment for the parts involved.

WARRANTY

Linear Systems, Inc., warrants equipment manufactured by it to be free from defects in material or workmanship and agrees to repair such equipment which under normal use and service, develops defects arising from the fault of the manufacturer. Equipment must be returned transportation prepaid within 90 days from the date of original purchase, and unless the warranty card has been filled in and returned within 10 days of original purchase, the warranty shall be void.

This warranty does not apply to equipment which (1) has been repaired or altered by anyone in any way so as, in our judgement, to injure its stability or reliability, (2) has been subject to misuse, negligence, or accident, (3) has had the serial number altered, defaced or removed, or (4) has been connected, installed, adjusted otherwise than in accordance with our written instructions.

The foregoing is in lieu of any other warranty or liability expressed, implied, or statutory and in no event shall Linear Systems, Inc., be liable for special or consequential damage. Linear Systems, Inc., neither assumes nor authorizes any person to assume for it any obligation or liability in connection with this equipment.

LINEAR SYSTEMS, INC.
220 Airport Boulevard
Watsonville, California 95076
(408) 722-4177

Channel	MHz	Synthesizer oscillation frequency (KHz)	Synthesizer Mixer (1) + (2)	Synthesizer Mixer x 2 Output Freq.	$f_2-f_1=F$ $f_1=7.8015$ (Channel)
5	50.050	16.020+12.90575	28.92575	57.8515	50.050
6	50.060	16.020+12.91075	28.93075	57.8615	50.060
7	50.070	16.020+12.91575	28.93575	57.8715	50.070
8	50.080	16.020+12.92075	28.94075	57.8815	50.080
9	50.090	16.040+12.90575	28.94575	57.8915	50.090
10	50.100	16.040+12.91075	28.95075	57.9015	50.100
11	50.110	16.040+12.91575	28.95575	57.9115	50.110
12	50.120	16.040+12.92075	28.96075	57.9215	50.120
13	50.130	16.060+12.90575	28.96575	57.9315	50.130
14	50.140	16.060+12.91075	28.97075	57.9415	50.140
15	50.150	16.060+12.91575	28.97575	57.9515	50.150
16	50.160	16.060+12.92075	28.98075	57.9615	50.160
17	50.170	16.080+12.90575	28.98575	57.9715	50.170
18	50.180	16.080+12.91075	28.99075	57.9815	50.180
19	50.190	16.080+12.91575	28.99575	57.9915	50.190
20	50.200	16.080+12.92075	29.00075	58.0015	50.200
21	50.210	16.100+12.90575	29.00575	58.0115	50.210
22	50.220	16.100+12.91075	29.01075	58.0215	50.220
23	50.230	16.100+12.91575	29.01575	58.0315	50.230
24	50.240	16 100+12.92075	29.02075	58.0415	50.240
25	50.250	16.120+12.90575	29.02575	58.0515	50.250
26	50.260	16.120+12.91075	29.03075	58.0615	50.260
27	50.270	16.120+12.91575	29.03575	58.0715	50.270
28	50.280	16.120+12.92075	29.04075	58.0815	50.280

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
1	R231	8000-00025-001	(CARBON) RES. 10Ω 1/3W 5%	1								
2	R228	-002	" 22Ω " "	1								
3	R21	-003	" 47Ω " "	1								
4	R234	-004	" 68Ω " "	1								
5	R18, 25 103, 115	-005	" 100Ω " "	4								
6	6*	-006	" 220Ω " "	9								
7	R219, 220 224	-007	" 330Ω " "	3								
8	8*	-008	" 470Ω " "	11								
9	R2, 215	-009	" 680Ω " "	2								
10	R60	-010	" 1.1KΩ " "	1								
11	11*	-011	" 1KΩ " "	10								
12	R12, 14, 104, 116, 121	-012	" 1.5KΩ " "	5								
13	R8, 205	-013	" 1.8KΩ " "	2								
14	R210	-014	" 2KΩ " "	1								
15	R27, 230	-015	" 2.2KΩ " "	2								
8000-00025				PAGE 1 OF 14						TOTALS	PAGE	
											ASSY	

6603-00008-001

BILL OF MATERIALS

REV		NEXT ASSY	ASSY NAME SPARE PARTS LIST SIDEBANDER 6	ASSY No. 8000-00025	
		EFFECTIVITY	ASSY QTY / RUN	USED ON	JOB No.

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
16	R19	8000-00025-016	(CARBON) RES. 2.4KΩ, 1/3W, 5%	1								
17	R33,54 112,127, 208,227	-017	" 3.3KΩ " "	6								
18	R37, 206	-018	" 4.3KΩ " "	2								
19	R56, 110, 211	-019	" 4.7KΩ " "	3								
20	20*	-020	" 5.6KΩ " "	9								
21	R117	-021	" 8.2KΩ " "	1								
22	R41,238 302, 304	-022	" 10KΩ " "	4								
23	R201	-023	" 11 KΩ " "	1								
24	R119	-024	" 12 KΩ " "	1								
25	R30,31,53 118,126 202, 207	-025	" 15 KΩ " "	7								
26	26*	-026	" 22 KΩ " "	7								
27	R36,39 40,47 113,209	-027	" 33 KΩ " "	6								
28	R101	-028	" 39 KΩ " "	1								
29	R108, 218	-029	" 47 KΩ " "	2								
30	R13, 15,46	-030	" 56 KΩ " "	3								
8000-00025			PAGE 2 OF 14							TOTALS	PAGE ASSY	

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
31	31*	8000-00025-031	(CARBON) RES. 100KΩ 1/3W 5%	10								
32	R106 237	-032	" 1MΩ " "	2								
33	R38 61,105	-035	" 4.7MΩ " "	3								
34	R305 306	-034	(SOLID) RES. 68Ω 1/2W 10%	2								
35	R308	-035	" 150Ω " "	1								
36	R232	-036	(FILM OXIDE) RES. 1Ω 1W 10%	1								
37	R305	-037	" 56Ω " "	1								
38	VR3	-038	(VARIABLE) RES. 10KΩ B	1								
39	VR4	-039	" 10KΩ D	1								
40	VR6	-040	" 50KΩ D	1								
41	VR6		" WITH SWITCH 50KΩD	1								
42	C42, 208	-042	(ALUMINUM SINTERED) CAP .22mf 16WV	2								
43	C43, 70	-043	" .47mf "	2								
44	C41, 210	-044	" 1mf "	2								

8000-00025		PAGE 3 OF 14	TOTALS	PAGE
				ASSY

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER G		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
45	45*	8000-00025-045	(ELECTROLYTIC) CAP 1uf 16WV	10								
46	C231	-046	" 2.2uf "	1								
47	C47, 237	-047	" 4.7uf "	2								
48	48*	-048	" 10uf "	8								
49	C61	-049	" 33uf "	1								
50	C64,68 203,302 304,305	-050	" 47uf "	6								
51	C71, 303	-051	" 220uf "	2								
52	C63	-052	" 1000uf "	1								
53	53*	-053	(CERAMIC) CAP .01uf 20% 50WV	46								
54	54*	-054	" .001uf " "	11								
55	C78	-055	" .047uf " "	1								
56	C101 212	-056	" 22 pf, N750, "	2								
57	C17	-057	(MYLER) CAP, .04uf, 20%, 50WV	1								
58	C44, 65	-058	" .05uf, " "	2								
59	C55, 62, 234	-059	" .1uf " "	3								
8000-00025			PAGE 4 OF 14							TOTALS	PAGE ASSY	

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
60	C56	8000-00025-060	(MYLER) CAP. .005mf, 20% 50WV	1								
61	C230	-061	(MICA) CAP. 1pf 50% 50WV	1								
62	C214	-062	" 1.5pf " "	1								
63	C21, 126	-063	" 3pf " "	2								
64	C8, 48 16, 120, 232	-064	" 4.7pf 10% "	5								
65	C7, 38 67, 72	-065	" 10pf " "	4								
66	C37, 39, 46	-066	" 15pf " "	3								
67	C30 50, 239	-067	" 20pf " "	3								
68	C77, 110	-068	" 24pf " "	2								
69	C233	-069	" 30pf " "	1								
70	C1, 2	-070	" 35pf " "	2								
71	C229, 104	-071	" 39pf " "	2								
72	C6, 112, 242	-072	" 47pf " "	3								
73	C109	-073	" 60pf " "	1								
74	C24, 25	-074	" 65pf " "	2								
8000-00025			PAGE 5 OF 14							TOTALS	PAGE	
											ASSY	

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No.	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
75	C226	8000-00025-075	(MICA) CAP. 75pf 10% 50WV	1								
76	C227	-076	" 78pf " "	1								
77	C54, 116	-077	" 100pf " "	2								
78	C228	-078	" 130pf " "	1								
79	C108	-079	" 200pf " "	1								
80	C111	-080	" 330pf " "	1								
81	C102	-081	" 500pf " "	1								
82	C119, 216, 217	-082	(GIMIC) CAP. .5pf	3								
83	C301	-083	(FEED THRU) CAP. .001 uf	1								
84	CV1	-084	(VARIABLE) CAP. 10pf MAX.	1								
85	CV2	-085	" 20pf MAX.	1								
86	CH2	-086	(CHOKE) COIL 22uH HF	1								
87	CH8	-087	" 4.5uH "	1								
88	CH1	-088	" 22uH "	1								

8000-00025		PAGE 6 OF 14	TOTALS	PAGE	
				ASSY	

6603-00008-001

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
89	CH12, 13	8000-00025-089	(CHOKE) COIL 2.5uHR	2								
90	CH3, 10	-090	(MICRO INDUCTOR) COIL LFI-8R2K	2								
91	CH4,5 6,7,11, 14,15	-091	" LFI-220K	7								
92	CH9	-092	" LF4-471K	1								
93	CH17	-093	(CHOKE) COIL LOSA AF	1								
94	CH16	-094	" K-11 AF	1								
95	T15	-095	(HF COIL) TX COIL Z171DD 50MHZ	1								
96	L1	-096	" Z172ND 50MHZ TX	1								
97	T9	-097	TRANSFORMER E-30 MOD	1								
98	98*	-098	DIODE, GERMANUM 1N34A	16								
99	D7,8, 32,33, 34,35	-099	" " 1N60P	6								
100	D47, 48	-100	" SILICON 100-4	2								
101	101*	-101	" " 1S-2472	16								
102	D36, 37	-102	" " 1S990S	2								
8000-00025			PAGE 7 OF 14							TOTALS	PAGE	
											ASSY	

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
103	D31	8000-00025-103	DIODE, SILICONE MA320B2	1								
104	D43, 44, 45, 46	-104	" " BZ090	4								
105	D30	-105	" " 1S352M	1								
106	Q3	-106	FET, SILICONE 2SK30Y	1								
107	Q2, 17, 22	-107	" " 3SK39Q	3								
108	Q8	-108	" " 2SK19Y	1								
109	Q9, 14	-109	" " 2SK19GR	2								
110	Q19	-110	XSTR, GERMANUM 2SD77B	1								
111	Q1, 4 7, 18	-111	" SILICONE 2SC701B	4								
112	Q13 15, 16	-112	" " 2SC710C	3								
113	Q23	-113	" " 2SC763D	1								
114	Q5, 6	-114	" " 2SC458C	2								
115	Q10, 11 12, 20 21	-115	" " 2SC458LGC	5								
116	Q24	-116	" " 2SC1018	1								
8000-00025				PAGE 8 OF 14						TOTALS	PAGE	
											ASSY	

6603-00008-001

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
117	Q25, 26	8000-00025-117	XSTR, SILICONE, SC778	2								
118	IC-2	-118	IC M5112Y	1								
119	IC-1	-119	IC MPC555A	1								
120		-120	IC NL-1	1								
121	PL1, 2	-121	LAMP, 16V 40mA	2								
122	PL3, 4	-122	" 12V 50mA	2								
123		-123	DC-DC CONVERTOR									
124		-124	(SOCKET ANTENNA) CONNECTOR SO-239 ANT	1								
125		-125	(MIC JACK) CONNECTOR 3P MIC J	1								
126		-126	(EXT JACK) CONNECTOR SF 2P EXT SP	1								
127	RL1	-127	RELAY 4P-27	1								
128	SP1	-128	SPEAKER	1								
129	S4		SWITCH COMBINED WITH VR5	1								
130	S5		SWITCH, ROTARY 24T	1								
8000-00025			PAGE 9 OF 14							TOTALS	PAGE ASSY	

6603-00008-001

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
131	S1,2 3	8000-00025-131	SWITCH, 8P-2T PUSH TYPE	1								
132	XF-1	-132	CRYSTAL FILTER, 7.8MHz	1								
133	X-1	-133	(HC-25/U) CRYSTAL 7.8025 MHz	1								
134	X-8	-134	" 12.90575 MHz	1								
135	X-9	-135	" 12.91075 MHz	1								
136	X-10	-136	" 12.91575 MHz	1								
137	X-11	-137	" 12.92075 MHz	1								
138	X-2	-138	" 16.020 MHz	1								
139	X-3	-139	" 16.040 MHz	1								
140	X-4	-140	" 16.060 MHz	1								
141	X-5	-141	" 16.080 MHz	1								
142	X-6	-142	" 16.100 MHz	1								
143	X-7	-143	" 16.120 MHz	1								
8000-00025			PAGE 10 OF 14						TOTALS		PAGE ASSY	

6603-00008-001

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
144		8000-00025-144	HEAT SINK F/TX DRIVE XSTR	1								
145		-145	HEAT SINK F/TX PA XSTR	1								
146		-146	HEAT SINK F/TX AUDIO PA XSTR	1								
147		-147	MOUNT F/FEEDTHRU CAP.	1								
148		-148	" " METER	1								
149		-149	STOPPER F/DC POWER CABLE	1								
150		-150	FUSE HOLDER IN-LINE TYPE	1								
151		-151	MICROPHONE DM-1368QT	1								
152	F1	-152	FUSE 3A	1								
153		-153	PCB MAIN	1								
154		-154	PCB FILTER	1								
155		-155	CRYSTAL HOLDER	1								
156		-156	STAPLE F/EXT SP JACK	3								
157		-157	MIC HOOK	1								
158		-158	CABINET	1								

8000-00025		PAGE 11 OF 14	TOTALS	PAGE	
				ASSY	

BILL OF MATERIALS

REV		NEXT ASSY		ASSY NAME SPARE PARTS LIST SIDEBANDER 6		ASSY No. 8000-00025	
		EFFECTIVITY		ASSY QTY / RUN	USED ON	JOB No.	

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
159		8000-00025-159	CABINET	1								
160		-160	FRONT, DIE CAST	1								
161		-161	FRONT ESCUTCHEON	1								
162		-162	BRAND NAME PLATE	1								
163		-163	CONTROL NAME PLATE	1								
164		-164	SWITCH NAME PLATE	1								
165		-165	KNOB, CHANNEL	1								
166		-166	KNOB, VOL, SQ, CLARIFIER VXO	4								
167		-167	KNOB, POWER, NB, AM/SSB	4								
168		-168	CHANNEL DISK	1								
169		-169	MOUNTING BRACKET	1								
170		-170	CHASSIS	1								
171		-171	METER	1								
172	TP1, 2, 3	-172	TERMINAL PIN	3								
173		-173	COVER f/CRYSTAL	1								
8000-00025			PAGE 12 OF 14						TOTALS		PAGE ASSY	

6603-00008-001

BILL OF MATERIALS

REV		NEXT ASSY	ASSY NAME SPARE PARTS LIST SIDEBANDER 6	ASSY No. 8000-00025	
		EFFECTIVITY	ASSY QTY / RUN	USED ON	JOB No.

ENGINEERING					PRODUCTION						ACCOUNTING	
ITEM	CKT SYM	PART NUMBER	DESCRIPTION	QTY/ ASSY	QTY/ RUN	SHORT	PURCHASE ORDER NUMBER	DATE	VENDOR	DUE	UNIT COST	EXT'D COST
174		8000-00025-174	HEXAGON BOLT	1								
175		-175	MOUNT f/DIODE	1								
176		-176	GROMET f/LAMP	1								
177		-177	PLATE f/SHIELD	1								
178		-178	SPACER f/FILTER CIRC.	2								
179	VR9	-179	SEMI VARIABLE RESISTOR 500Ω B3T	1								
180	VR7, 8	-180	" 10KΩ B3T	2								
181	VR11	-181	" 50KΩ B3T	1								
182	VR2, 13	-182	" 20KΩ B2T	2								
183	VR1 10, 12	-183	" 50KΩ B2T	3								

8000-00025	PAGE 13 OF 14	TOTALS	PAGE	
			ASSY	

6 * R20, 28, 44, 49, 128, 204, 212, 233, 235

8 * R1, 5, 9, 24, 34, 35, 129, 225, 226, 236, 125

11 * R3, 21, 23, 29, 45, 59, 107, 124, 221, 55

20 * R10, 11, 51, 57, 58, 203, 213, 214, 217

26 * R50, 52, 102, 109, 114, 301, 303

31 * R6, 16, 17, 42, 48, 111, 122, 123, 222, 223

45 * C32, 57, 58, 60, 52, 201, 205, 207, 209, 235

48 * C19, 29, 53, 59, 66, 202, 206, 236

53 * C3, 4, 5, 9, 10, 11, 13, 14, 22, 23, 25, 26, 27, 28, 31, 33, 35, 36, 40, 46, 49, 51, 69, 74, 105, 107, 114, 115, 118, 121, 122, 123, 124, 125, 211, 213, 215, 127, 128, 220, 221, 223, 238, 243, 244, 245

54 * C12, 15, 18, 20, 34, 73, 106, 117, 222, 224, 248

98 * D1, 2, 3, 4, 12, 15, 16, 20, 21, 22, 23, 24, 25, 38, 41, 42

101 * D5, 6, 9, 10, 11, 13, 14, 17, 18, 19, 26, 27, 28, 29, 39, 40


ANT.
RL1-3
TR25, 26 2SC778 x 2
TR24 2SC1018
TR23 2SC763
TR22 3SK39
TR18 2SC710
TR17 3SK39
TR16 2SC710
16MHz
CH8 2.6uH
VXO
S5 CHANNEL
TR15 2SC710
RIT
RL1-4
S4
RF METER
ALC ADJ.
ALC ADJ
NOISE BLANKER SWITCH
TR3 2SK30Y
S2-2
TR1 2SC710B
TR2 3SK39
F1
7.8 MHz FILTER
TR4 2SC710B
IC-1 μPC555A
TR5 2SC458
TR6 2SC458
TR7 2SC710
TR8 2SK19
AGC
ALC
R59 1K
CH10 .85μH
CH7 22uH
CH17 130mH
MIC. J
TR19 2SD77
TR20 2SC458
TR21 2SC458
T8 S111
TR14 2SK19
TR13 2SC710
TR11 2SC458
TR10 2SC458
TR9 2SK19
S METER
SQUELCH
S1-6
S1-3
S1-5
SSB
AM
IC-2 M5117Y
TR12 2SC458
NOISE LIMITTER
VOLUME
S2-1
F1 3A
+13.6VDC
CH16
S3
POWER
RL1-1
S1-4
S1-2
S1-1
DC-DC CONVERTOR 2SC931
T9 E30
RL1-2
EXT. SP
SP
TR28 2SC710
TR27 2SC710
VR12 50K
MODULATION LIMITTER