ALINCO

VHF FM TRANSCEIVER

ALR-205E

INSTRUCTION MANUAL

ALINCO ELECTRONICS INC.
1-1-1 Mishimae, Takatsuki city, Osaka 569. Japan
Phone (0726)77-0312

ALINCO ELECTRONICS INC.

INTRODUCTION

Congratulation, now you are the owner of one of our many "ALINCO" products.

Your ALR-205E has been manufactured and tested very carefully at the factory and will give you satisfactory operation for many years.

CONTENTS

ACCESSORIES

Carefully unpack your transceiver and you will find the following accessories included with the transceiver.

* Microphone . . . . . x 1
* D.C. Power Cord . . . . . x 1
* Spare fuse (8A) . . . . . x 1
* Installing angle joint . . . . . x 1
* M5 x 20mm screw . . . . . x 4
* M5 x 20mm Mounting screw . . . . . x 4
* M5 Nut . . . . . x 4
* M5 Flat Washer . . . . . x 4
* M5 Spring Washer . . . . . x 4
* Screws for Bracket . . . . . x 4
* External Speaker Plug . . . . . x 1

SPECIFICATIONS

■ GENERAL

Frequency Coverage	144.000-145.9875MHz
Frequency Resolution	12.5kHz step 160 channels
Antenna Impedance	50 ohms unbalanced
Power Supply Voltage	D.C. 13.8V
Current Drain at 13.8V	Receiving Squelched: Approx. 300mA Transmitting High: 25W Approx. 5A Low: 5W Approx. 2.5A
Dimension	147mm(W) x 51mm(H) x 193mm(D) (5-1/2 inch) (2 inch) (7-1/2 inch)
Weight	Approx. 1.3kgs-2.8 lbs.

■ TRANSMITTER

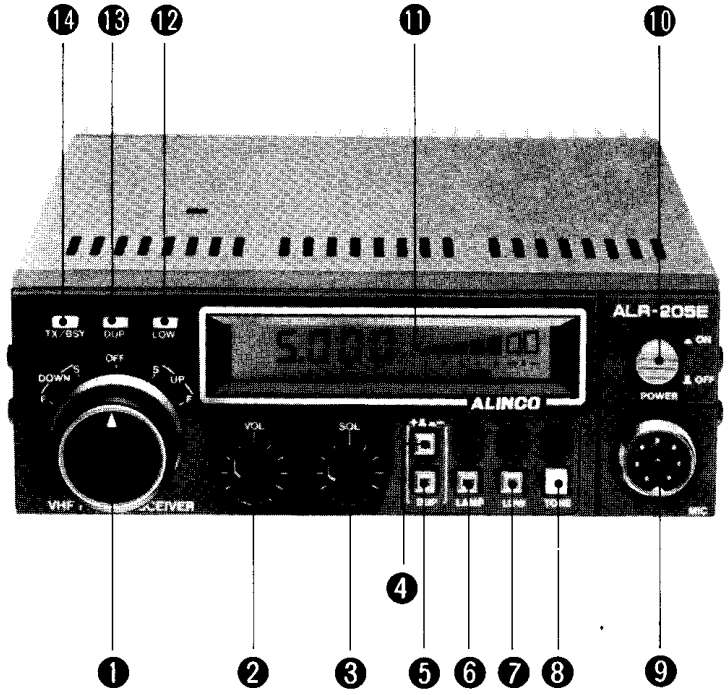
Output Power	High: 25 WATTS Low: Approx. 5 WATTS
Emission Mode	F3E
Modulation System	Variable reactance frequency Modulation
Max. frequency deviation	±5kHz
Spurious emission	More than 60db below carrier
Microphone	Electret condenser microphone
Operating mode	Simplex Duplex: ±600kHz from receive frequency

■ RECEIVER

Receiving system	Double conversion superheterodyne
Modulation acceptance	F3E
Intermediate frequency	1st: 10.7MHz, 2nd: 455kHz
Sensitivity	Less than –6db for 20db Noise quiet
Selectivity	More than ±7.5kHz at –6db point Less than ±15kHz at –60db point
Audio output power	More than 1.6W
Audio output impedance	8 ohms

1 . . CONTROL FUNCTION

■ Front Panel



(1) Frequency UP/DOWN Knob
This knob selects the operating frequency.
Normally, it indicates the OFF position and the frequency shifts up with 12.5 kHz step by setting this knob to the UP (S (Slow) or F (Fast)) position and shifts down with 12.5kHz step by setting the knob to the DOWN (S or F) position.
If you lose hold of the knob, it automatically returns to the OFF position.
When the knob is set at the S (Slow) position (UP or DOWN), the frequency is scanned at the speed of 1/2 second per channel and beep sound is heard at each increment.
When this knob is set at the F (Fast) position (UP or DOWN), the frequency is scanned at the speed of 1/20 second per channel.

(2) Volume Control
The audio output level increases by rotating this control clockwise.

(3) Squelch Control
When no signal is present in the receive mode, adjust this control clockwise until the noise threshold is reached.
In scan operation, this control must be set to the threshold point.

(4) TX OFFSET Switch
This switch is used for selecting whether the transmitting frequency is to be 600kHz above (+) or below (−) the receive frequency.

(5) Duplex/Simplex Switch
For repeater operation, set this switch at the Dup (Duplex) position and for simplex operation, set this switch at the Simp (Simplex) position, making (4): TX OFFSET Switch non functional.

(6) LAMP Switch
When this switch is set in the locked-in position, the LCD display panel is lit up.

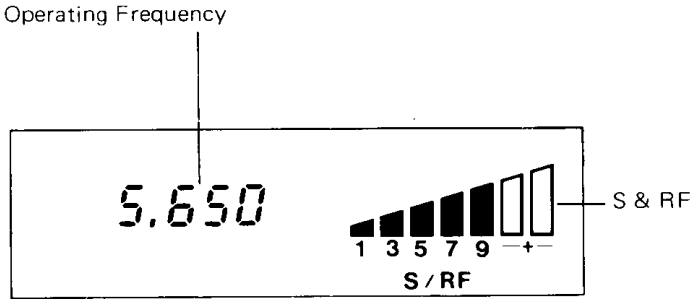
(7) HI/LOW Switch
This switch is used to set output power to HIGH and LOW.
In the HIGH (out) position, the output power is 25W.
In the LOW (locked-in) position, the output power is approx. 5W.

(8) Tone-Burst Button
This switch activates a 1750Hz tone-burst generator for initial access of the repeater. Depress this switch for a required period and carrier with a 1750Hz tone will be transmitted.

(9) MIC (Microphone) Jack
An electret condenser microphone with keypad is supplied with the transceiver. Plug it into this 8-pin jack.

(10) Power ON/OFF Switch

(11) LCD (Display)
This LCD panel indicates the operating frequency, signal strength, power output or some other functions as shown in the drawing below.

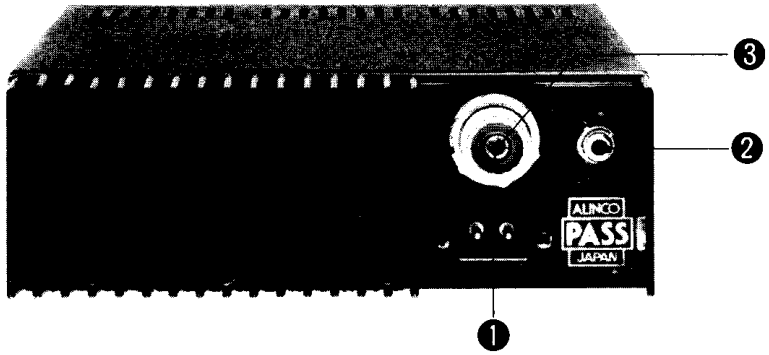


(12) LOW Indicator
This LED is lit when the 'LOW' Power Switch is set in the 'ON' (locked-in) position.

(13) DUP Indicator
This LED will indicate 'DUPLEX' (repeater) mode.

(14) TX/BSY Indicator
A red LED is lit in the transmit mode and, in the receive mode, a green LED is lit when the signal is received or whenever the squelch is open.

■ REAR PANEL

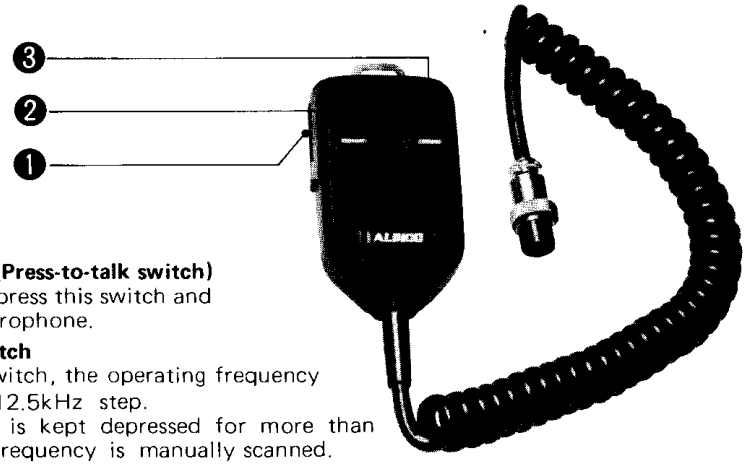


(1) Power Connector
Connect the supplied power cable to this connector.

(2) External Speaker Jack
When an external speaker (Imp.: 8 Ohms) is used, connect it to this jack.

(3) Antenna Connector
Used to connect the antenna to the set.
Use a PL259 antenna-plug with 50 Ohms impedance.

■ MICROPHONE



(1) P.T.T. Switch (Press-to-talk switch)
For transmission, press this switch and speak into the microphone.

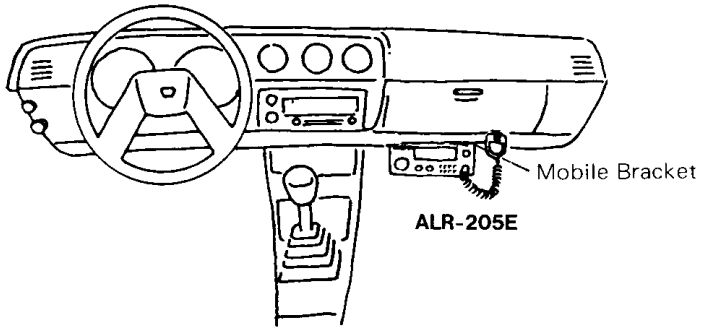
(2) ▼ DOWN Switch
By pressing this switch, the operating frequency shifts down with 12.5kHz step.
When this switch is kept depressed for more than one second, the frequency is manually scanned.

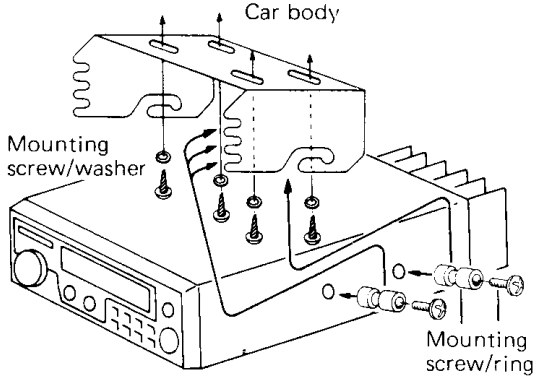
(3) ▲ UP Switch
By pressing this switch, the operating frequency shifts up with 12.5kHz step.
When this switch is kept depressed for more than one second, the frequency is manually scanned.

2. INSTALLATION

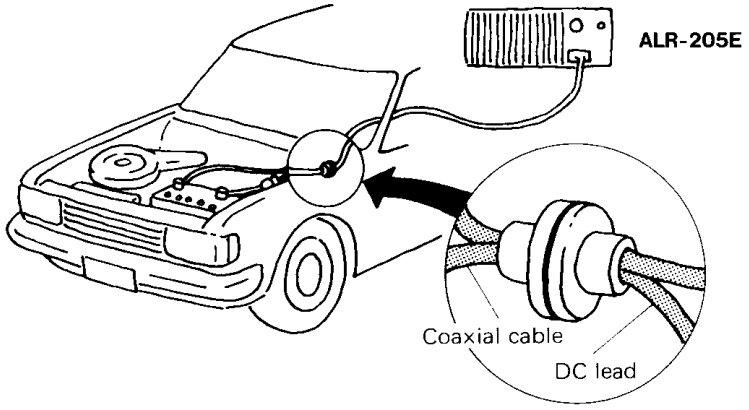
■ MOBILE INSTALLATION

(1) Location
The transceiver may be installed in any position in your car, where the controls and microphone are easily accessible and safe operation of the vehicle or the performance of the set will not be interfered with.
Refer to the diagrams for installation of the Mounting Bracket.:



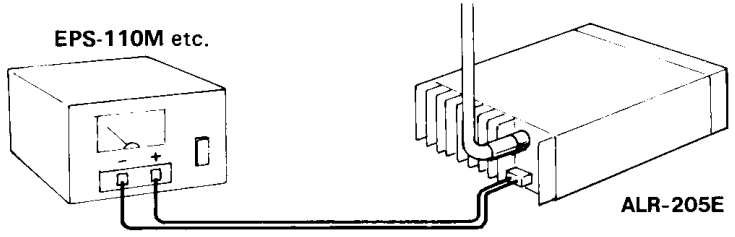


(2) Power Requirements
The transceiver can be operated from any regulated 12 or 13.8V negative ground source.
For mobile use, power connections should be made directly to the battery to minimize the possible ignition noise pickup.



■ BASE STATION INSTALLATION

For fixed base operation, a 13.8V D.C. Power Supply capable of providing at least 8A continuously is required.
The "ALINCO" EPS-110M D.C. Power Supply is suitable for this purpose.
Connect the red lead of the power cable to the Positive (+) terminal, and the black lead to the Negative (–) terminal of EPS-110M.



3. OPERATION

■ RECEPTION

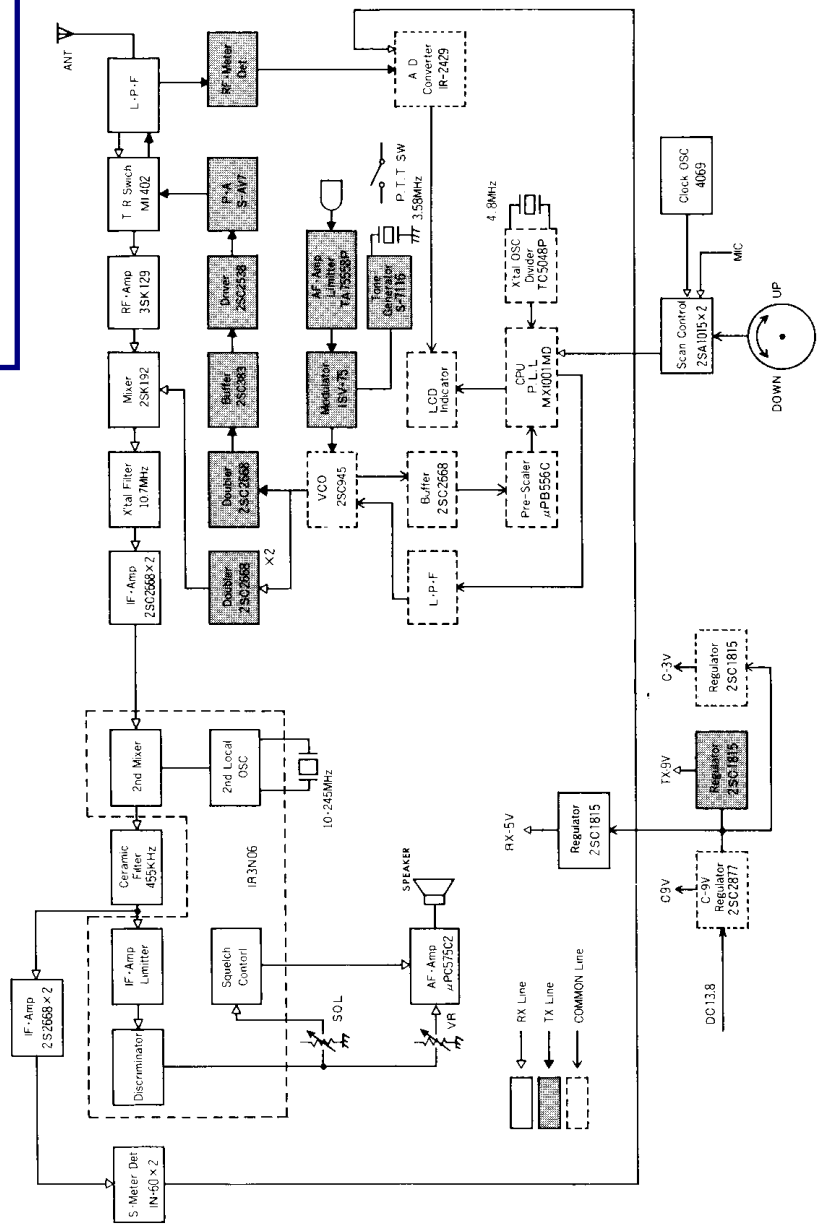
1. Push the Power Switch to "ON".
2. A frequency will be displayed on LCD Panel.
3. Turn the SQL (Squelch Control) completely counterclockwise and VOL (Volume Control) clockwise slowly to a comfortable level.
4. Select the desired frequency by turning the main Knob.

5. If no signal can be heared but only noise, turn the SQL clockwise until the noise from the speaker stops and set it just below this threshold.

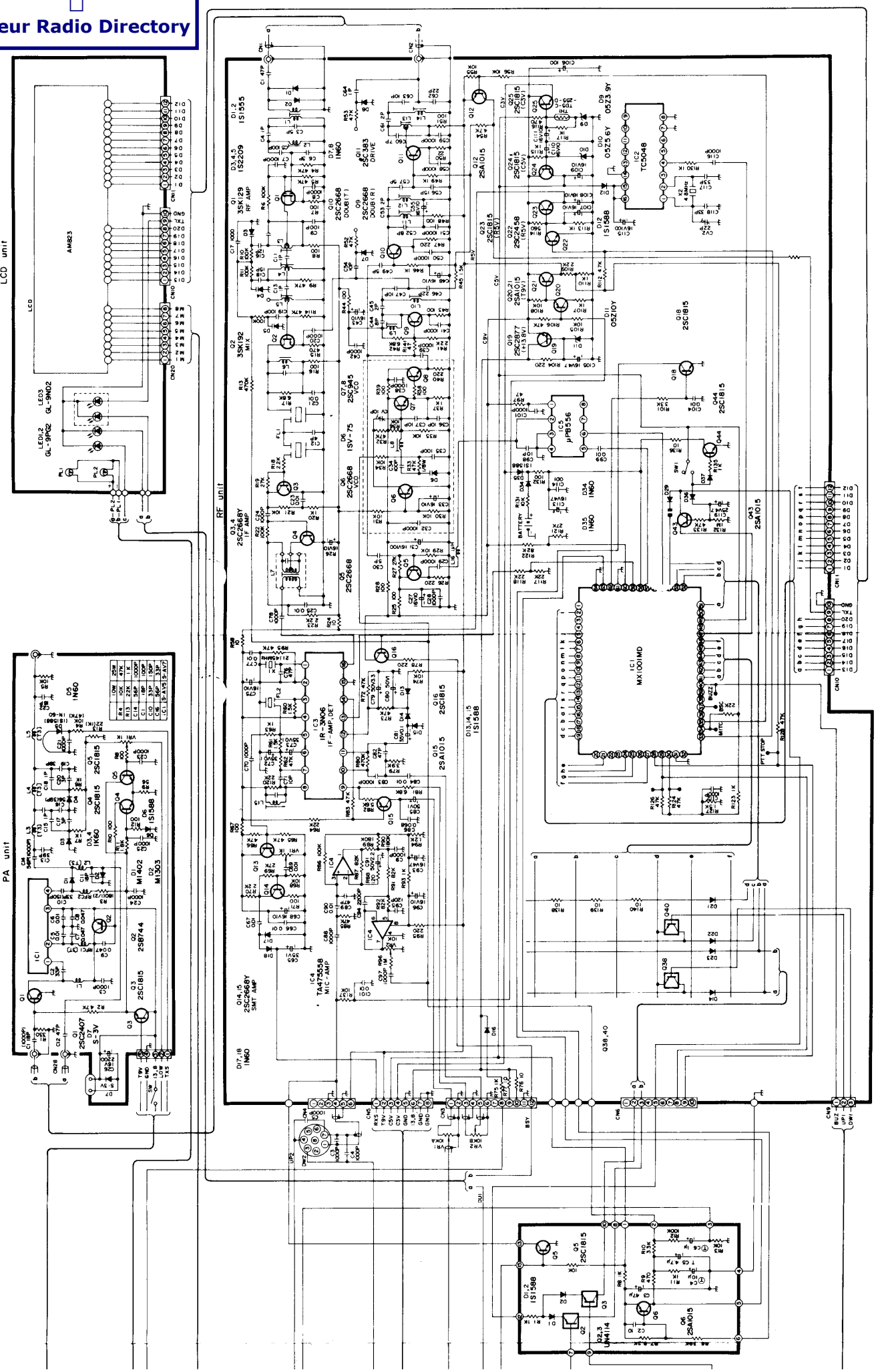
■ TRANSMISSION

1. For SIMPLEX operation, set the DUP/SIMP (DUPLEX/SIMPLEX) Switch to the SIMP Position.
2. For DUPLEX (Repeater) operation, set the DUP/SIMP Switch to the "DUP" position and select the TX OFFSET frequency by the ± (+: +600kHz., −: −600kHz. from the receive frequency.)
3. Select either LOW POWER or HIGH POWER.
4. Depress the P.T.T. (Press-To-Talk) switch and speak into the microphone with your normal speech level for the proper microphone level.
   The On-AIR indicator LED (red) will be lit.

4. BLOCK DIAGRAM



DIAGRAM



Some components subject to change for an improvement without notice.

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ALR-205E SCHEMATIC DIAGRAM