

INTEK® KT-335EE

SERVICE MANUAL

TWO WAY RADIO

2-6171-12 [VER 1.2]

VHF HI BAND

142MHZ ~ 167.9950MHZ

CHANNEL SPACING : 10KHZ / STEP
: ± 5KHZ

SIMPLEX: NORMAL

DUPLEX : -600KHZ / -4.6MHZ

INTEK® KT-335EE

Downloaded by
Amateur Radio Directory

Page: 1

TABLE OF CONTENTS

SECTION 1 :	SPECIFICATION	Page 3
SECTION 2 :	OPERATING CONTROLS	Page 4 ~ 8
SECTION 3 :	CIRCUIT DESCRIPTION	Page 9 ~ 13
SECTION 4 :	ALIGNMENT PROCEDURE	Page 14 ~22
SECTION 5 :	COMPONENT LAYOUT	Page 23 ~ 26
SECTION 6 :	BLOCK FREQ. LAYOUT	Page 27 ~ 29
SECTION 7 :	WIRE CONNECTION	Page 30 ~ 31
SECTION 8 :	BLOCK DIAGRAM	Page 32
SECTION 9 :	SCHEMATIC DIAGRAM	Page 33
SECTION 10 :	ICS SPECIFICATION	Page 34

INTEK[®] KT-335EE

GENERAL

NUMBER OF SEMICONDUCTORS	: TRANSISTOR	42
	: FET	3
	: I.C.	6
	: DIODES	40
FREQUENCY COVERAGE	: 142 - 167.9950MHz	
FREQUENCY RESOLUTION	: 5KHz STEPS 5200 CHANNELS	
FREQUENCY CONTROL	: DIGITAL PLL SYNTHESIZER, WITH THUMBWHEEL SWITCHES	
FREQUENCY STABILITY	: WITHIN	
USABLE TEMPERATURE	: -10°C - 60°C (14°F - 140°F)	
ANTENNA IMPEDANCE	: 50 OHMS UNEBALANCED	
POWER SUPPLY REQUIREMENT	: DC 9.6V ; WITH ATTENDANT POWER PACK IC-BP3, DC 8.4 - 12.0V NEGATIVE GROUND IS ACCEPTABLE	
CURRENT DRAIN AT 9.6V	: TRANSMITTING	
	HIGH : 2.5W APPROX. 800mA	
	LOW : 0.15W APPROX. 350mA	

RECEIVING

DIMENSIONS	AT MAX AUDIO OUTPUT APPROX. 190mA
	: 116.5MM(H) * 65MM(W) * 35MM(D) WITHOUT POWER PACK
	ATTENDANT POWER PACK, 68MM(H) * 65MM(W) * 35MM(D)
WEIGHT	: 563G INCLUDING POWER PACK, AND FIBLE ANTENNA

TRANSMITTER

OUTPUT POWER	: HIGH : 2.5W TO 4.0W, LOW : 0.15W TO 1W AT 9.6V
EMISSION MODE	: 16F3
MODULATION SYSTEM	: VARIABLE REACTANCE FREQUENCY MODULATION
MAX. FREQUENCY DEVIATION	: MIN. 3.4KHz, MAX. 5.4KHz
SPURIOUS EMISSION	: MORE THAN 60dB BELOW CARRIER
MICROPHONE	: BUILT-IN ELECTRET CONDENSER MICROPHONE OPTIONAL
	SPEAKER-MICROPHONE (IC-HM9) CAN BE USED
OPERATING MODE	: SIMPLEX
	DUPLEX : ± 600KHz FROM RECEIVE FREQUENCY
	(OPTION : -600KHz / -4.6MHz FROM RECEIVE FREQUENCY)

RECEIVER

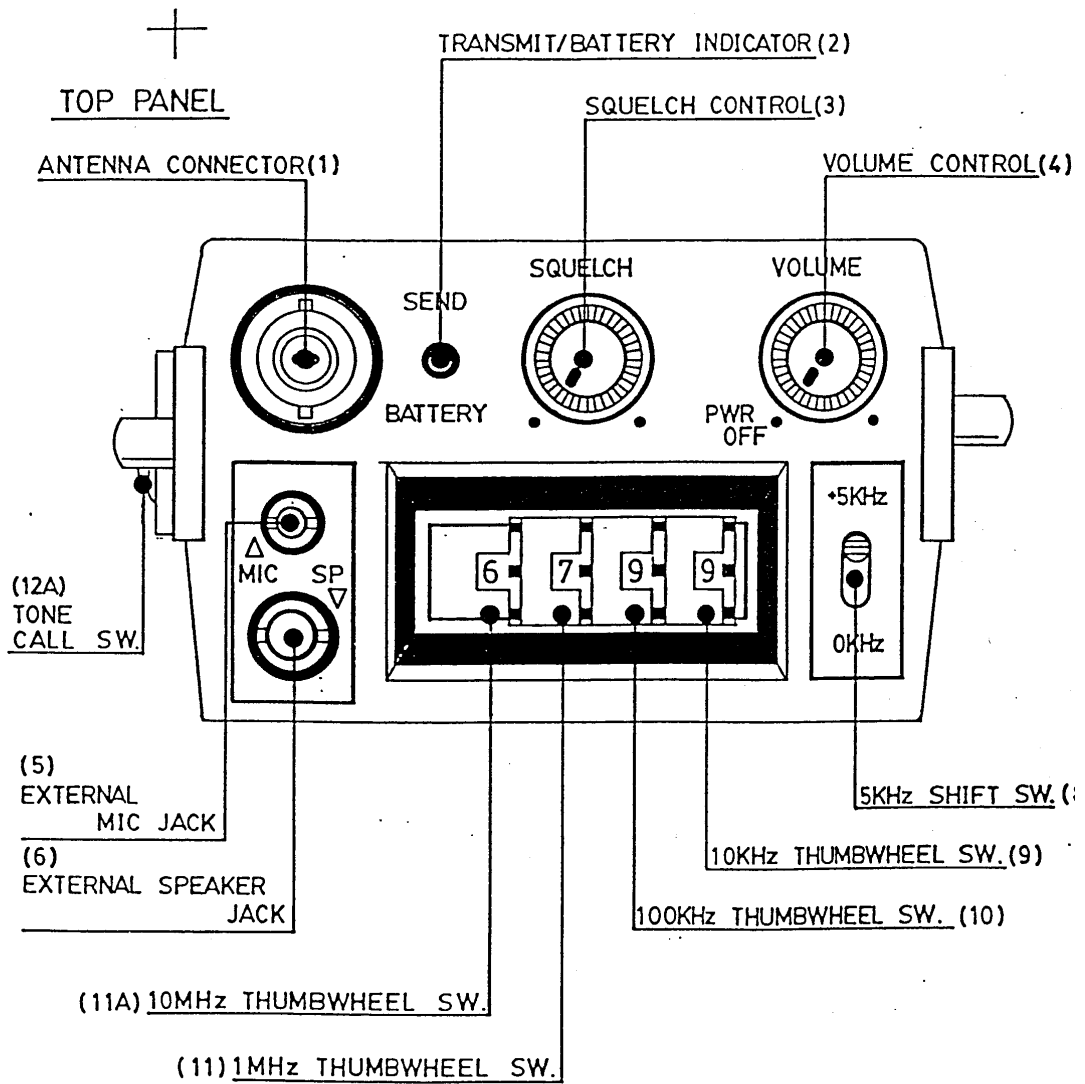
RECEIVING SYSTEM	: DOUBLE - CONVERSION SURPERHETERODYNE
MODULATION ACCEPTANCE	: 16F3
INTERMEDIATE FREQUENCY	: 1ST : 16.9MHz
	2ND : 455KHz
SENSITIVITY	: MORE THAN 12dB S+N/D/N+D AT 0.35uV
	LESS THAN 0.5uV FOR 20dB NOISE QUIETING
SQUELCH SENSITIVITY	: LESS THAN 0.4uV
SPURIOUS RESPONSE REJECTION RATIO	: MORE THAN 60dB
SELECTIVITY	: MORE THAN ± 7.5KHz AT -6dB POINT
	LESS THAN ± 15KHz AT -60dB POINT
AUDIO OUTPUT POWER	: MORE THAN 300mV
AUDIO OUTPUT IMPEDANCE	: 8 OHM

(SPECIFICATIONS ARE APPROXIMATE AND ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.)

INTEK® KT-335EE

Scan by Dah

SECTION 2 OPERATING CONTROLS

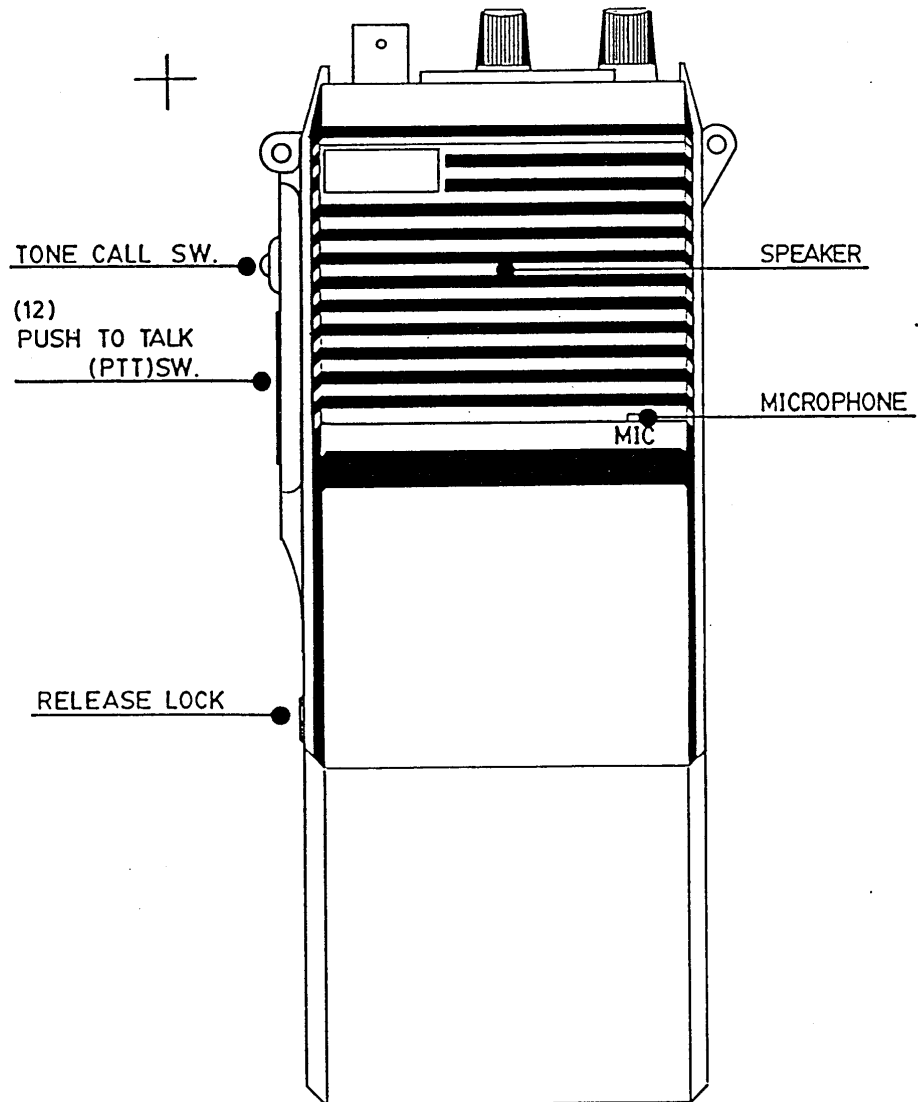


INTEK® KT-335EE

SECTION 2 OPERATING CONTROLS

INTEK[®] KT-335EE

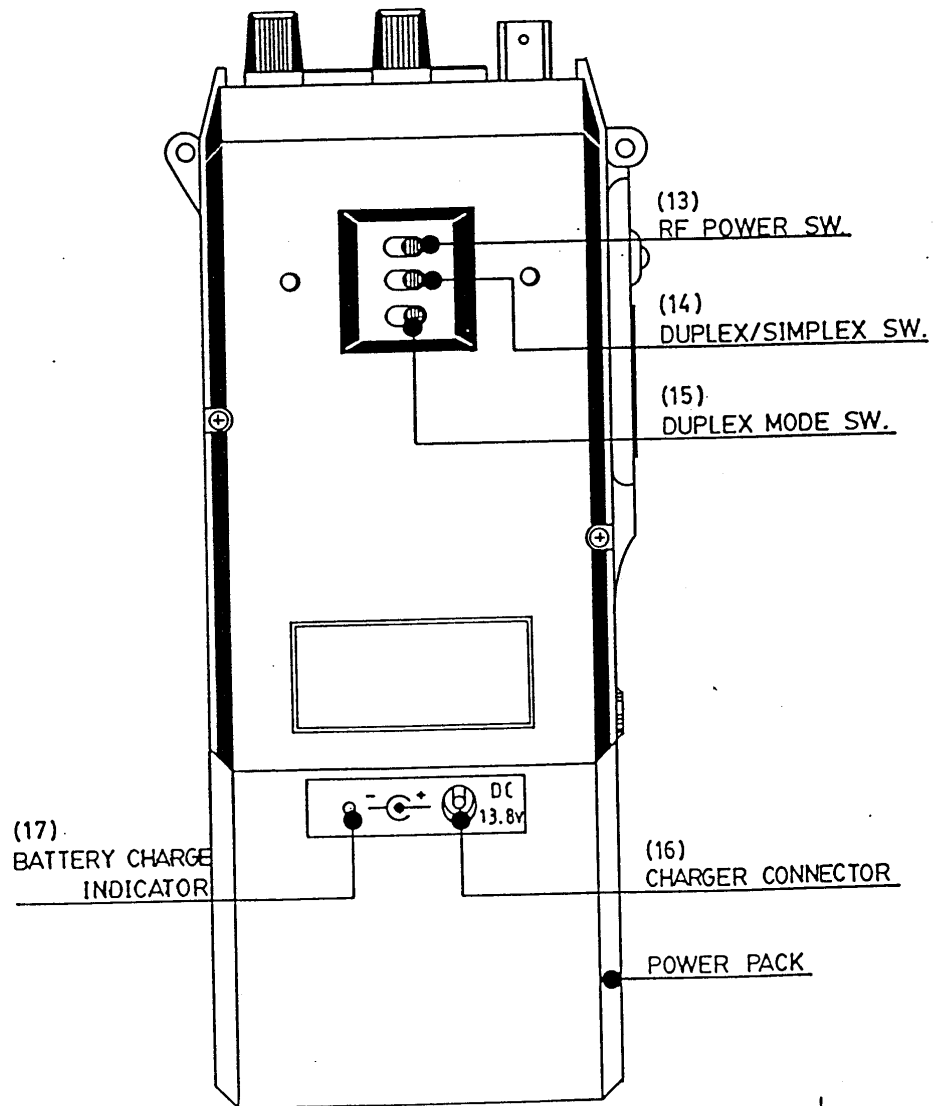
FRONT PANEL



SECTION 2 OPERATING CONTROLS

INTEK[®] KT-335EE

REAR PANEL



(1) ANTENNA CONNECTOR

Connect the supplied flexible antenna. An external antenna can be used, using a BNC connector.

(2) TRANSMIT / BATTERY INDICATOR

Illuminates in the transmit mode. Also indicates the battery condition; during transmission. The voltage of Nickel-Cadmium batteries drops rapidly just before they are exhausted, so when this indicator goes out, be sure to immediately stop using it, and charge the batteries again.

(3) SQUELCH CONTROL

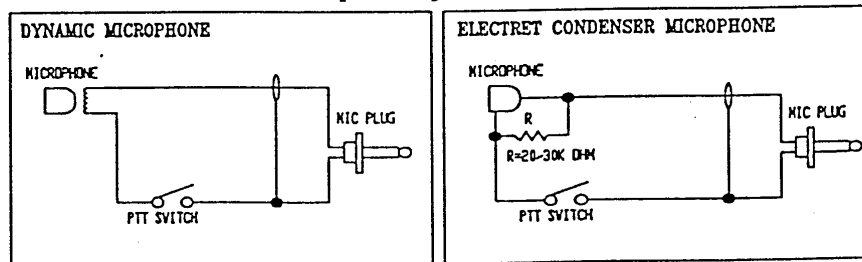
Sets the squelch threshold level. To turn OFF the squelch function, rotate this control completely counter-clockwise. To set the threshold level higher, rotate the control clockwise.

(4) VOLUME CONTROL AND POWER ON/OFF SWITCH

Controls the audio output level in the receive mode. Clockwise rotation increases audio output, if want to shutdown power then this control turn to counter-clockwise at completed post.

(5) EXTERNAL MIC JACK

When an external microphone is used, connect it to this jack. See the schematic for the proper hookup. When the external microphone is connected the built-in microphone does not function. The IC-hm9 optional speaker-microphone can also be used.



(6) EXTERNAL SPEAKER JACK

When an external speaker (or an earphone) is used, connect it to this jack. Used a speaker with an impedance of 8 ohm. When the external speaker is connected the built-in speaker does not function.

(7) POWER SWITCH

Only for the model k6201 operation.

(8) 5KHz SHIFT SWITCH

When the desired operating frequency has a 5KHz digit, set this switch in the +5KHz position, and add 5KHz to the indicated frequency on the thumbwheel switches.

(9) 10KHz THUMBWHEEL SWITCH

Sets the 10KHz digit of the desired operating frequency.

(10) 100KHz THUMBWHEEL SWITCH

Sets the 100KHz digit of the desired operating frequency.

(11) 1MHz THUMBWHEEL SWITCH

Sets the 1MHz digit of the desired operating frequency.

(11A) 10MHz THUMBWHEEL SWITCH

Sets the 10MHz digit of the desired operating frequency.

Remark : The thumbwheel switch must be within [142 TO 167.9950MHz] frequency range. If the frequency is out of range, it will have no Tx and Rx function. In that case, it is necessary to turn off the unit, and re-set to the correct frequency.

(12) PUSH - TO - TALK (PTT) SWITCH

For transmission, press this switch and talk into microphone with normal voice. The internal microphone is of the electret-condenser type and provides good pickup for all voice levels.

(12A) TONE CALL SWITCH

Most repeaters require a 1750Hz Tone-burst for initial access. Depressing the TONE CALL SWITCH knob for the required period for a repeater, puts the set in the transmit mode and the tone-burst generator actuates and you can access the repeater.

(13) RF POWER SWITCH

Selects the RF output power HIGH 2.5Watts (at 9.6V) or low 1.0 Watt (at 9.6V) in the LOW position, the current drain is decreased, to prolong the battery life.

(14) DUPLEX / SIMPLEX SWITCH

Selects the operation mode DUPLEX for repeater operation, or SIMPLEX for the same receive / transmit frequency operation.

(15) DUPLEX MODE SWITCH

In the DUPLEX mode : selects the transmitting frequency 600KHz above or below the receiving frequency according to the desired repeater input frequency.

(16) CHARGER CONNECTOR

Connects to the output plug of the wall charger or other power source.

(17) BATTERY CHARGE INDICATOR

Lights during battery charging.

INTEK® KT-335EE

SECTION 3 CIRCUIT DESCRIPTION

3.1 RECEIVER CIRCUITS

3.1.1 ANTENNA SWITCHING CIRCUIT

Signals from the antenna connector are fed to the antenna switching circuit through chabyshev low-pass filter consisting of L330 , L329 , C363 , C364 and C355 in the PLL board.

The Antenna switching circuit employs a quarter wave switching circuit. In the receiver mode , switching diodes , D321 and D322 are turned OFF , and they make isolation against the transmitter circuit and matching circuit , and the incoming signals are fed to the RF amplifier.

3.1.2 RF AMPLIFIER AND FIRST MIXER

The signals from the switching circuit are fed to the cascode amplifier Q201 and Q202.

The amplified signals are fed to the gate of the first mixer Q203 through the band-pass filter which reduces interference and intermodulation from out of the band signals.

To the source of Q203 , a 123.1MHz signal is supplied from the PLL circuit to convert the RF signals into 16.9MHz first IF signals.

The first IF signals are taken from the drain of Q203 and fed to the IF circuit.

3.1.3 IF CIRCUIT

The first IF signals from Q203 are fed to the matched pair crystal filter CF201 , CF202 , then IF amplifiers Q204 and Q205.

The amplified signals are fed to IC201. IC201 is composed of the second local oscillator , second mixer , limiter amplifier. quadrature detector and active filter circuit.

The second local oscillator oscillates 16.445MHz with X201 , and is fed to the second mixer with the first IF signals to convert into 455KHz second IF signals. The second IF signals are put out from pin 3 , and fed to external ceramic filter CF203 which has excellent selectivity , then fed to IC201 (pin 5) again to amplify and detect.

The detected AF signals are put out from pin 9.

3.1.4 AF AND SQUELCH CIRCUITS

The detected AF signals are put 6dB/Octave de-emphasis by internal circuit consisting of R216 and C223 and fed to AF power amplifier IC202 through the VOLUME control VR202 to obtain enough power to drive the speaker.

Noise components put out from pin 9 of IC201 (pin 10) again through the SQUELCH control VR202 which controls the squelch threshold level, filtered about 20KHz signal (noise) and put out from Pin 11.

This signal (noise) is rectified by Q213 integrated by R237, R238 and C238 and turns Q214 ON and turns OFF the regulator for AF power amplifier consisting of Q206, Q215 and Q216.

This reduces the current drain of the set, in the stand-by condition. When a signal is received, noise is suppressed by the signal and turns Q214 OFF and the regulator is turned ON and supplies regulated voltage to the AF power amplifier, and incoming signal can be heard from the speaker.

In the transmit mode, a voltage is applied to Q214 and turns it ON, and turns the regulator OFF the same as in the stand-by condition.

3.2 TRANSMITTER CIRCUITS

3.2.1 MIC AMPLIFIER CIRCUIT

Audio signals from the microphone are fed to the limiter amplifier, consisting of Q224-Q227 which has 6dB / Octave response between 300Hz and 3KHz. The output of the limiter amplifier is similar to rectangular waves and includes harmonics.

These harmonics are eliminated by the low-pass filter Q228 which cuts 3KHz or higher.

Filtered signals are fed to the VCO in the PLL board to make modulation.

3.2.2 MULTIPLIER AND DRIVER CIRCUITS

The VCO oscillates a half of a transmitting frequency, thus the multiplier Q313 and Q312, multiplies it two times to obtain 140MHz transmitting frequency. This 140MHz is fed to amplifiers Q311 and Q309 through band-pass filter L320, L321 and L322 to obtain 200 milliwatts pure 140MHz signal.

While switching from receive to transmit Q310 is turned ON by the charged voltage of C395 until the charged voltage has been discharged, and this function cuts the bias voltage of Q308, Q309, Q311.

This prevents transmission of unwanted signals.

3.2.3 POWER AMPLIFIER CIRCUIT

The output signals from Q309 is fed to the power amplifier Q308 and amplified to 2.5 watts.

In the transmit mode, D321 and D322 are turned ON and D321 makes L329 have high-impedance and D322 feeds the signals to the antenna through the low-pass filter.

INTEK[®]

KT-335EE

3.3 PLL CIRCUITS

3.3.1. LOCAL OSCILLATOR CIRCUIT

The crystal oscillator Q6 oscillates 30.7768MHz with X301 for receive, 35.002MHz with X302 for simplex transmit, 33.852MHz with Q303 for 4.6MHz and 34.852MHz with X304 for -600KHz duplex transmit, and the signal at two time this frequency is taken from the collector of Q314 and fed to the mixer of the PLL circuit.

In the receive mode, R+7V is applied to D310 through R331, L308, L309 and R327 and D310 is turned ON and selects X301.

In the simplex transmit mode, T+7V is applied to D311 through R332, L310, L311 and R328 and D311 is turned ON and selects X302.

In the -4.6MHz duplex transmit mode, T+7V is applied to D312 through R333, L312, L313 and R329 and D312 is turned ON and selects X303.

In the -600KHz duplex transmit mode, T+7IV is applied to D313 through R334, L314, L315 and R330 and D313 is turned ON and selects X304.

When the operating frequency has a 5KHz digit, cathodes of D314-D315 and D316-D317 are grounded through the 5KHz SHIFT switch, and one of D314-D315 and D316-D317 is turned ON according to the operating mode. Thus, one of L308, L310 and L312, L314 is shunted accordingly and oscillating frequency is shifted 5KHz (on the operating frequency).

3.3.2 MIXER, LOW -PASS FILTER AND AMPLIFIER CIRCUITS

The output signals from the local oscillator circuit and the VCO signals fed through buffer amplifiers Q304 and Q303 are mixed by the mixer Q302. The output signals are fed to the low-pass filter to filter out only the signals below 5MHz, then fed to Q301 to be amplified to proper drive level (more than 3Vp-p) of the programmable divider IC301.

3.3.3 PROGRAMMABLE DIVIDER CIRCUIT

The input signals at pin 2 of IC301 are divided by the BCD input signals from the thumbwheel switches at pin 3-16.

3.3.4 REFERENCE FREQUENCY GENERATOR CIRCUIT

Reference frequency generator IC303 consists of a crystal oscillator and a high-speed divider. X305 oscillates at 5.12MHz, which is divided by 1024. The 5KHz reference frequency is fed to phase detector. This 5KHz reference frequency decides the variation step of the PLL output frequency.

3.3.5 PHASE DETECTOR AND LOOP FILTER CIRCUITS

Digital phase detector IC302, detects the phase difference of the pulse signals of the 5KHz reference frequency and the output signals of the programmable divider, and proportionately puts out pulse signals at Pin 3, which becomes high impedance when the PLL is locked.

Pin 4 is for detecting the lock failures and changes to ground level according to the phase difference of the two pulse signals. When the lock fails, the pulse signal from Pin 4 is integrated by R319 and C313. When the integrated voltage exceeds the junction voltage of Q306's base, Q306's turned ON and then Q208 in the MAIN board is turned ON.

The collector of Q208 is connected to the base of Q207, so the base voltage of Q207 becomes ground level, and Q207 and Q206 are shut off to prevent transmitting unwanted signals.

The loop filter, consisting of R320, R321, R318, C315 and C323 converts the pulse signal from Pin 3 into a DC voltage and decides the response time of the whole loop.

The output signals are fed to tuning diode D303 of the VCO circuit as the control voltage for the VCO frequency set.

3.3.6 VCO CIRCUIT

The VCO (Voltage-Controlled Oscillator) is a Colpitts circuit using Q305 and oscillates in 71MHz range.

The oscillator frequency is controlled by a DC voltage which is supplied from the loop filter to varactor diode D303.

In the receive mode, R+5V is applied to D302's anode through L302, and D302 is turned ON and shunts C320. Thus the free-run frequency of the VCO is lowered.

In the transmit mode, T+5V is applied to D302's cathode through D301 and L304, D302 is turned OFF, and C320 is inserted in the oscillator circuit in series. Thus the free-run frequency of the VCO is increased. In the same time, the VCO signal is frequency modulated by the audio signals from the microphone which are applied to the gate of Q305 and varies Q305's mutual conductance.

INTEK®

KT-335EE

Scan by Dan

3.4 OTHER CIRCUITRY

INTEK s.p.a.

3.4.1. POWER SUPPLY CIRCUIT

The regulated 5V is supplied to the main circuits, so that the set operates under a stable condition with as low a power voltage as possible.

The power supply voltage is fed to the AF power amplifier through the squelch switching circuit and to the 5V regulator consisting of Q217-Q220 and zener diode D207. This regulated 5V is supplied to the PLL circuit.

In the transmit mode, the base of Q223 is grounded through R255 the microphone and the PTT switch, and R223 is turned ON. Thus Q206 and Q207 are turned ON and T+7V is actuated and supplied to the transmitter circuit. At the same time, T+7V turns Q212 ON, and the power supply voltage is applied to the MIC amplifier circuit through Q212.

In the receiver mode, Q223 is turned OFF and the bias voltage of Q209 ON. Thus the R+5V is actuated and supplied to PLL board to switch the local oscillator crystal and the driver transistors of the transmitter circuit.

At the same, R+7V turns ON the voltage boost circuit consisting of Q210 and Q211 and +6V is supplied to the receiver circuit.

3.4.2 LED INDICATOR CIRCUIT

This LED is lit in the transmit mode, but when the power supply voltage becomes less than 7.5V, it will not be lit.

The power supply voltage is divided by R251 and R250 and applied to the base of Q221. The emitter of Q221 is connected to the regulated 7V source. When the power supply voltage is more than 7.5V, Q221 is turned OFF, Q222 is turned ON and T+7V is applied to the LED through Q222 and R253 and LED is lit.

3.4.3 TONE-BURST GENERATOR CIRCUIT

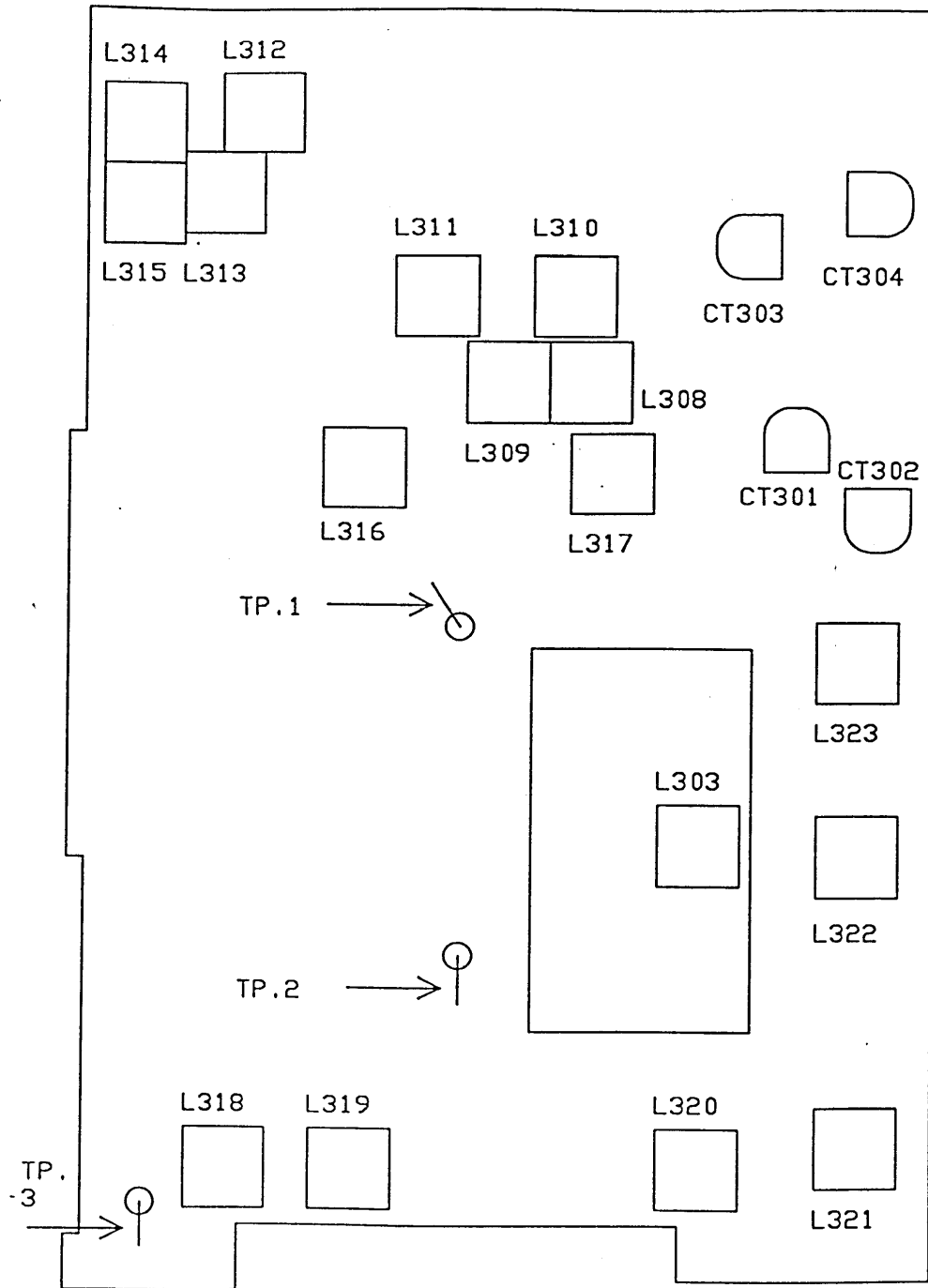
When the TONE CALL switch is depressed, Q223 base is grounded through R253 and D501 and the set is turned in the transmit mode. At the same time, Q501's base is also grounded through R501, and Q501 is turned ON and supplies a voltage to IC501.

IC501 consists of a crystal oscillator and dividers. X501 oscillates at 7.168MHz, which is divided by 4096.

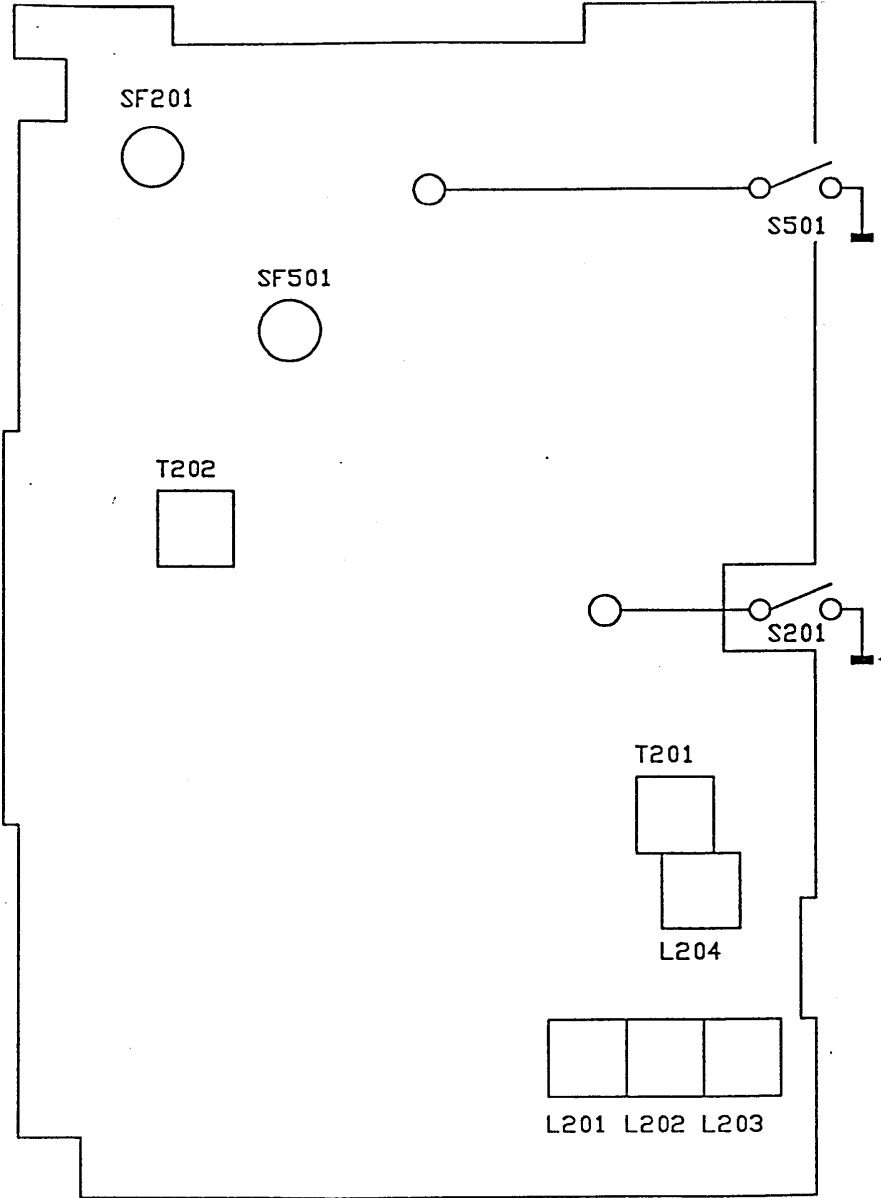
The 1750Hz tone is put out from pin 4 of IC501 and fed to the mic amplifier circuit through SF201 level adjust trimmer.

ALIGNMENT POINTS

KT-335EE



ALIGNMENT POINTS



INTEK® KT-335EE

EQUIPMENT REQUIRED FOR ALIGNMENT (VCO & LOCAL OSC.)

- (1) DC Power Supply set to 9.6V. AMP. requires more than 1A.
- (2) Multimeter 50K ohm / Volt. or better.
- (3) Antenna Dummy Load 50 ohm (5 Watts)
- (4) Oscilloscope 100MHz
- (5) Frequency Counter 0.1 - 500MHz.

FIGURE 1

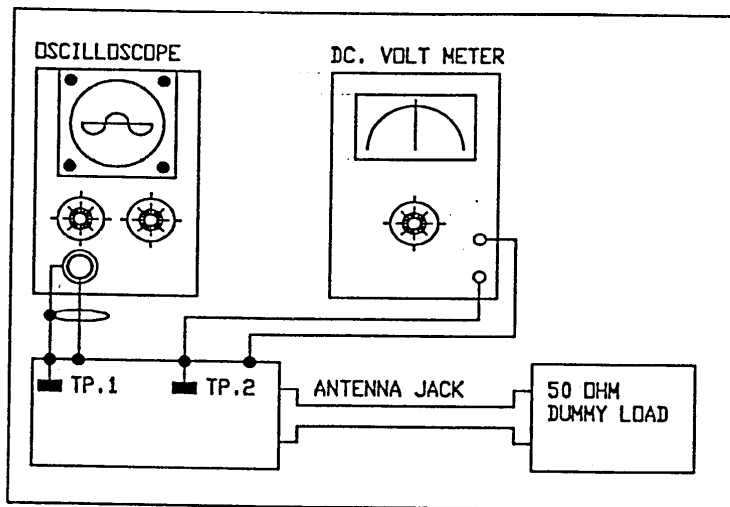
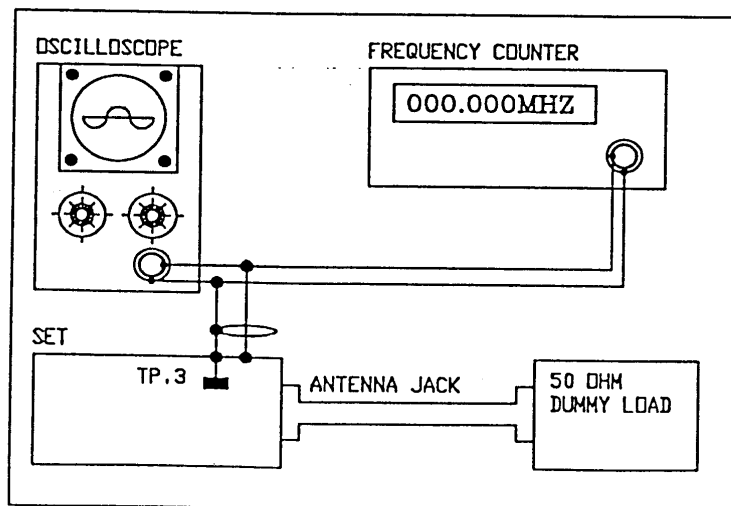


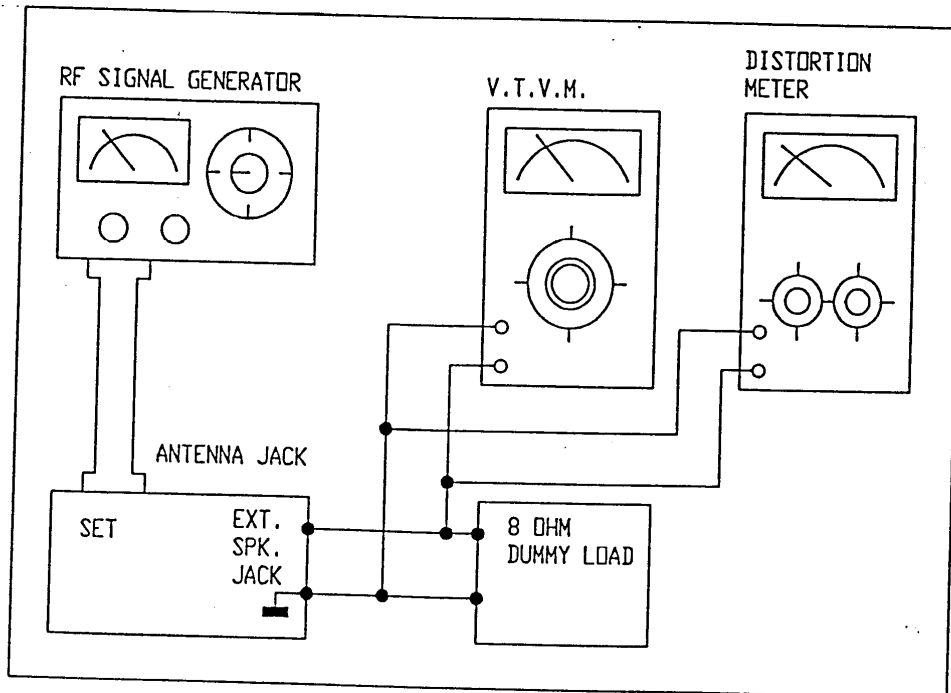
FIGURE 2



EQUIPMENT REQUIRED FOR ALIGNMENT (RX)

- (1) DC Power Supply to 9.6V, AMP. requires more than 1A.
- (2) FM RF Signal Generator 0.1 - 170MHz or higher, -20dB (0dB=1 μ V).
- (3) AC Millivoltmeter (VTVM) 10mV -2V or higher.
- (4) Distortion meter.
- (5) Speaker 8 ohm or Dummy Load 8 ohm.

FIGURE 3



INTEK[®] KT-335EE

EQUIPMENT REQUIRED FOR ALIGNMENT

- (1) DC Power Supply set to 9.6V, AMP. requires more than 1A.
- (2) Frequency Counter 0.1 - 500MHz.
- (3) Antenna Dummy Load 50 ohm (5 watt) W/20dB Attenuator.
- (4) RF Power Meter 5 watt, 100 - 250MHz.
- (5) Audio Signal Generator 600 ohm output impedance.
- (6) Deviation Meter.
- (7) Frequency Counter 10Hz - 100KHz.

Figure 4

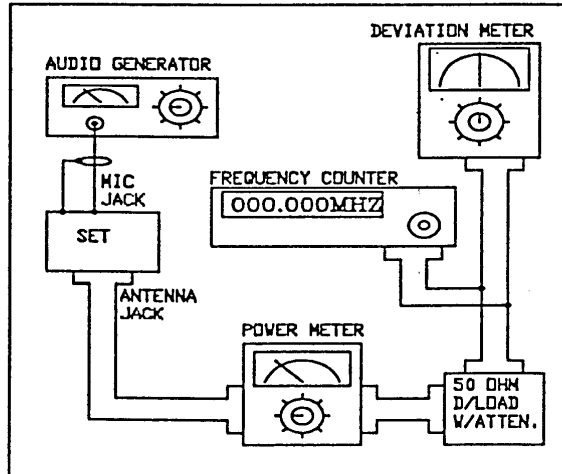
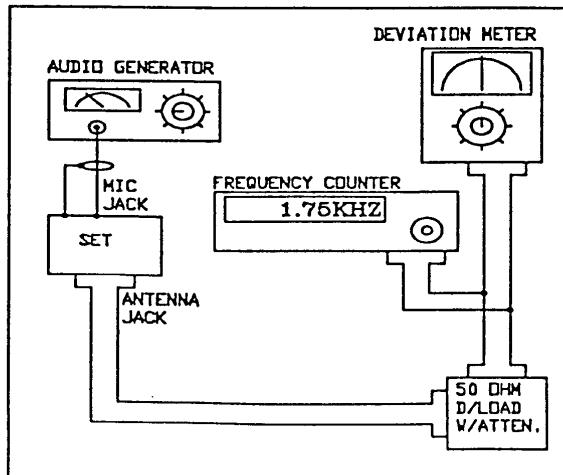


Figure 5



ALIGNMENT PROCEDURE (LOCAL OSCILLATOR & VCO ADJUSTMENT

STEP	CONNECTION & SETTING	OUTPUT CONNEC-TION	ADJUST	ADJUST FOR
1.	. SET THUMBWHEEL SWITCH TO N5000 AND S301 TO '+5KHz'. . DC POWER SUPPLY 9.6V. . SWITCHED 'ON' POWER SWITCH. . SET S302 TO 'SIMP'	CONNECT 50 OHM LOAD TO ANTENNA SOCKET. CONNECT OSCOPE TO TP1. CONNECT DC VOLT-METER TO TP2. (FIG. 1)	L303	TUNE THE L303 UNTIL THE TX LED IS LIGHT WHEN PRESS THE FIT SWITCH (S201) , THE PLL SHOULD LOCK.
2.	. SAME AS STEP 1. RX MODE.	SAME AS STEP 1.	L316	MAX. VOLTAGE READING INDICA-TION ON OSCOPE.
3.	. SAME AS STEP 1. TX MODE.	SAME AS STEP 1.	L317	
4.	REPEAT STEP 2 AND STEP 3 AS NECESSARY TO OBTAIN MAX. OUPUT.			
5.	. SAME AS STEP 3. . SET THUMBWHEEL SWITCH TO N6799 AND S301 TO '+5KHz'	SAME AS STEP 1. DISCONNECT OSCOPE AT TP.1	L303	VCO IS 6.0V ± 0.1V INDICATION ON DC VOLTMETER.
6.	. SAME AS STEP 2. . SET THUMBWHEEL SWITCH TO N5999 AND S301 TO '+5KHz'	CONNECT OSCOPE AND FREQUENCY COUNTER TO TP.3 (FIG. 2)	L319	MAX. OUTPUT INDICATION ON OSCOPE.
7.	. SAME AS STEP 2. . SET THUMBWHEEL SWITCH TO N4200 AND S301 TO '+5KHz'	SAME AS STEP 6. (FIG. 2)	L318	MAX. OUTPUT INDICATION ON OSCOPE.
8.	REPEAT STEP 6 & STEP 7 AS NECESSARY TO OBTAIN MAX. OUTPUT.			
9.	. SAME AS STEP 6.	SAME AS STEP 6.	L309	ADJUST FOR 'DE-SIRED FREQUENCY-16.9MHz' INDICATION ON FREQUENCY COUNTER. (EXAMPLE : 159.9950-16.9= 143.095MHz)
10.	. SAME AS STEP 6. SET THUMBWHEEL SWITCH TO N5999 AND S301 TO '0KHz'	SAME AS STEP 6.	L308	ADJUST FOR 'DESIRED FREQUENCY-16.9MHz' INDICATION ON FRE-QUENCY COUNTER. EXAMPLE : (159.99-16.9=143.09MHz)

ALIGNMENT PROCEDURE (RX)

STEP	SIGNAL SOURCE CONNECTION AND SETTING	OUTPUT CONNECTOR	ADJUST	ADJUST FOR
1.	<ul style="list-style-type: none"> . SET THUMBWHEEL SW. TO 4999 AND S301 TO '+5KHz'. . DC POWER SUPPLY 9.6V. SWITCHED 'ON' POWER SWITCH. . SQUELCH CONTROL TO MIN. (COUNTER-CLOCK WISE.) . SET OUTPUT OF RF SIGNAL GENERATOR TO DESIRED FREQUENCY 1KHz MOD., 3KHz DEV. AND RF 1MV. . TUNE VOLUME TO ADJUST AF POWER OUTPUT OF THE UNIT 50MV. 	CONNECT VTVM, 8 OHM DUMMY LOAD, DISTORTION METER TO EXT. SPEAKER JACK SOCKET. (FIG. 3)	T202	MAX. OUTPUT INDICATION ON VTVM.
2.	. SAME AS STEP 1.	SAME AS STEP 1.	T201	MIN. DISTORTION INDICATION ON DISTORTION METER.
3.	<ul style="list-style-type: none"> . SAME AS STEP 1. . RF 1uV INPUT . SET N4200 	SAME AS STEP 1.	L203 L202	BEST SINAD INDICATION ON DISTORTION METER.
	<ul style="list-style-type: none"> . SAME AS STEP 1. . SET N6799 		L201 L204	
4.	REPEAT STEP 3 AS NECESSARY TO OBTAIN BEST SINAD.			
5.	CHECK N4200, N5500, N6799, AND S301 TO 5KHz. SINAD 12dB MUST BE BETTER THAN 0.35uV.			

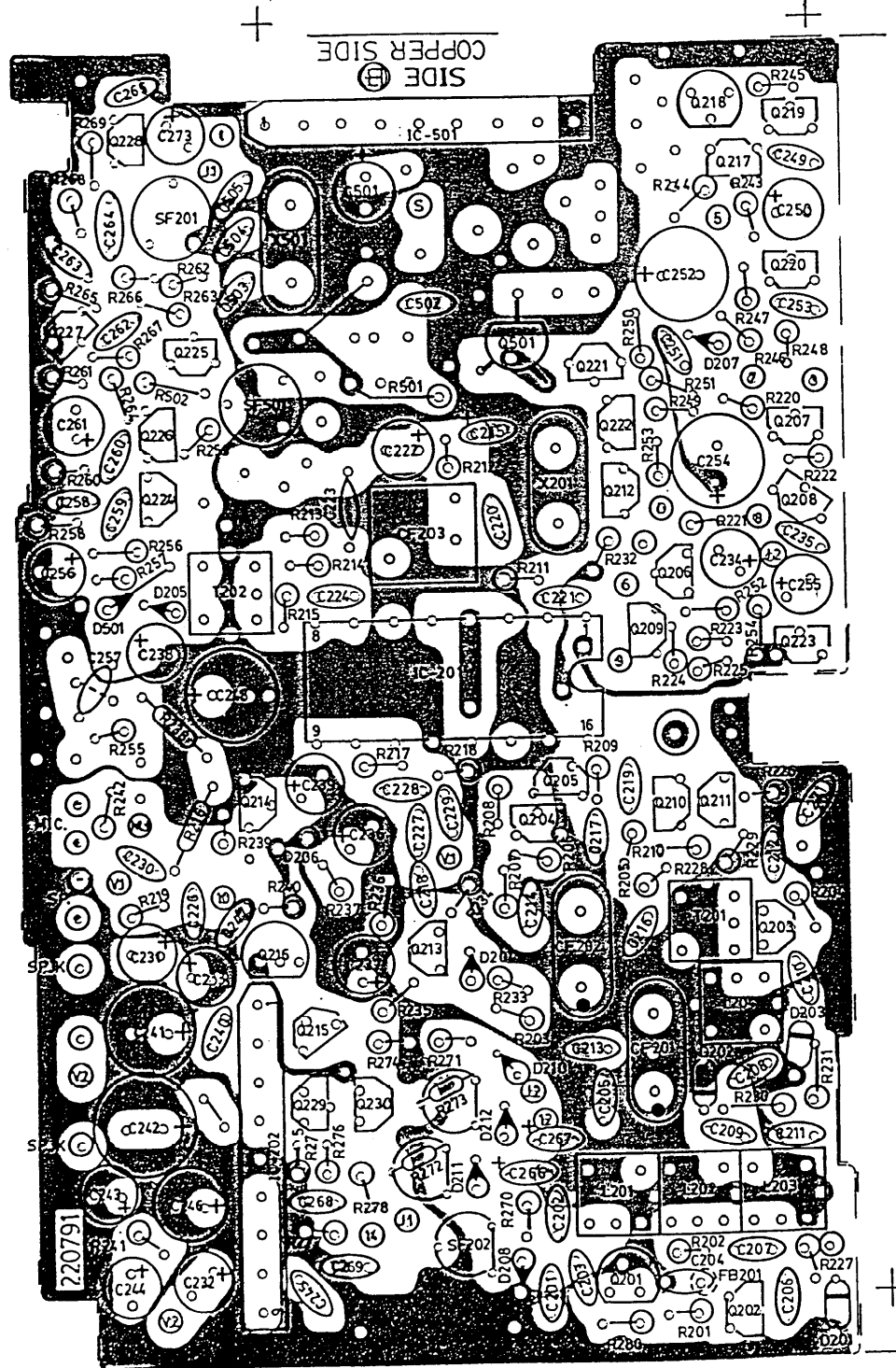
INTEK® KT-335EE

ALIGNMENT PROCEDURE (TX) **INTEK** s.p.a.

STEP	CONTROL SETTING	OUTPUT CONNECTING	ADJUST	ADJUST FOR
1.	TUNE THE CT301, CT302, CT303 AND CT304 TO FIXED POSITION.			
2.	. SET THUMBWHEEL SW. TO 4200 AND S301 TO '+5KHz'. . S304 TO 'HI' POSITION. . S302 TO 'SIMP' POSITION. . DC POWER SUPPLY 9.6V. . SWITCHED 'ON' POWER SWITCH. . TX MODE - INJECT AF GENERATOR (NO OUTPUT) TO MIC. SOCKET. (FIG. 4)	CONNECT RF POWER METER 50 OHM DUMMY LOAD W/ ATTENUATOR, FREQUENCY COUNTER, DEVIATION METER TO ANTENNA SOCKET. (FIG. 4)	L320	MAX. RF POWER OUTPUT INDICATION ON RF POWER METER.
3.	. SAME AS STEP 2, SET THUMBWHEEL SW. TO N5700 AND S301 TO '+5KHz'	SAME AS STEP 2.	L322	MAX. RF POWER OUTPUT INDICATION ON RF POWER METER.
4.	. SAME AS STEP 2. SET THUMBWHEEL SW. TO N6200 AND S301 TO '+5KHz'	SAME AS STEP 2.	L321	MAX. RF POWER OUTPUT INDICATION ON RF POWER METER.
5.	. SAME AS STEP 2. SET THUMBWHEEL SW. TO N6799 AND S301 TO '+5KHz'	SAME AS STEP 2.	L323	MAX. RF POWER OUTPUT INDICATION ON RF POWER METER.
6.	CHECK THE N4200, N5700, N6200, N6799, REPEAT STEP 2, STEP 3, STEP 4 AS NECESSARY TO OBTAIN MAX. OUTPUT. REMARK : N4200 ADJUST CT304 + CT301. N6799 ADJUST CT302 + CT301.			
7.	. SAME AS STEP 2. BUT SET THE N4999 '+ 5KHz'	SAME AS STEP 2.	L311	ADJUST FOR DESIRED FREQUENCY ± 5 PPM INDICATION ON FREQUENCY COUNTER
8.	. SAME AS STEP 7. EXCEPT SET S301 TO '0KHz'	SAME AS STEP 2.	L310	ADJUST FOR DESIRED FREQUENCY ± 5 PPM INDICATION ON FREQUENCY COUNTER

STEP	CONTROL SETTING	OUTPUT CONNECTING	ADJUST	ADJUST FOR
9.	. SAME AS STEP 7. BUT S302 TO 'DUP' POSITION, S303 TO '-4.6MHz' POSITION AND S301 TO '+5KHz'	SAME AS STEP 2.	L313	ADJUST FOR DESIRED FREQUENCY ± 5 PPM INDICATION ON FREQUENCY COUNTER.
10.	. SAME AS STEP 7. BUT S301 TO '0KHz' POSITION.	SAME AS STEP 2.	L312	
11.	. SAME AS STEP 10. BUT S303 TO '-600KHz' POSITION.	SAME AS STEP 2.	L315	
12.	. SAME AS STEP 11. BUT S301 TO '0KHz' POSITION.	SAME AS STEP 2.	L314	
13.	. Set the freq. 142.0050MHz . Audio Gen. set the 1KHz, 120MV(-22dB) into the Mic. Jack.	SAME AS STEP 2.	SF201	ADJUST FOR 5.1KHz ± 0.1 DEV. INDICATION ON DEVIATION METER.
14.	CHECK N4200, N4700, N5200, N5700, N6200, N6799 AND IF NECESSARY, TURN THE SF201 TO OBTAIN (3.4 to 5.4 KHz DEV.)			
15.	CHECK THE N4200, N5700, N6799, AND 5KHz, Tx DISTORTION MUST BE LESS THAN 3%.			
16.	. SAME AS STEP 6. EXCLUDED AUDIO GEN. TO MIC JACK. PRESS TONE SW. (S501)	CONNECT 50 OHM DUMMY LOAD W/ ATTN, DEV. METER, FREQ. COUNTER TO ANTENNA SOCKET. (FIG.5)	SF501	ADJUST FOR ± 3 KHz DEV. INDICATION ON DEVIATION METER.
17.	CHECK N4999, N5000, N5999, N6000 AND N6799 IF NECESSARY, TUNE SF501 TO OBTAIN NOT LESS THAN ± 3 KHz AND NOT MORE THAN ± 5 KHz DEV.			

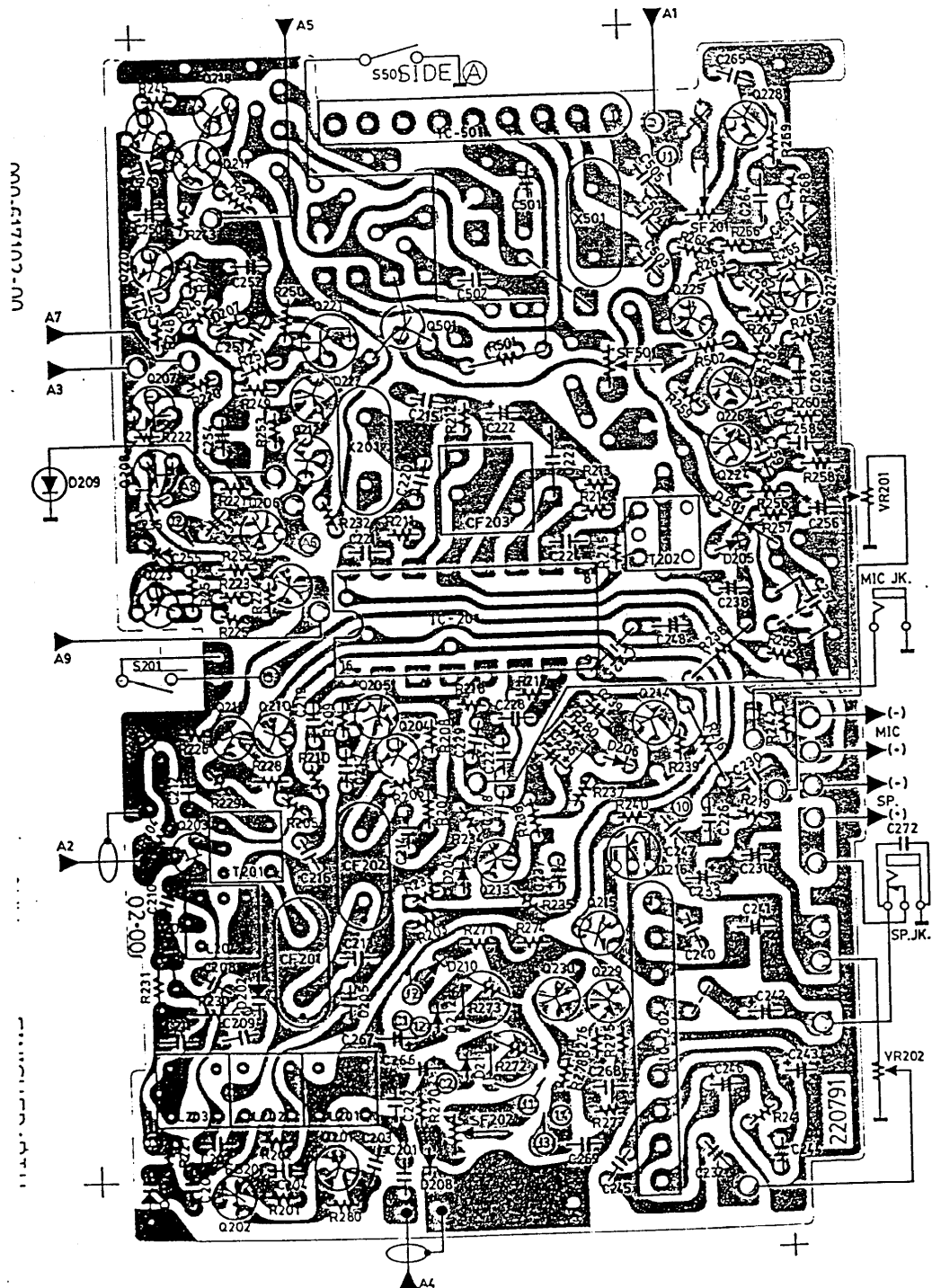
TOP VIEW : PCB-A



Downloaded by Amateur Radio Directory

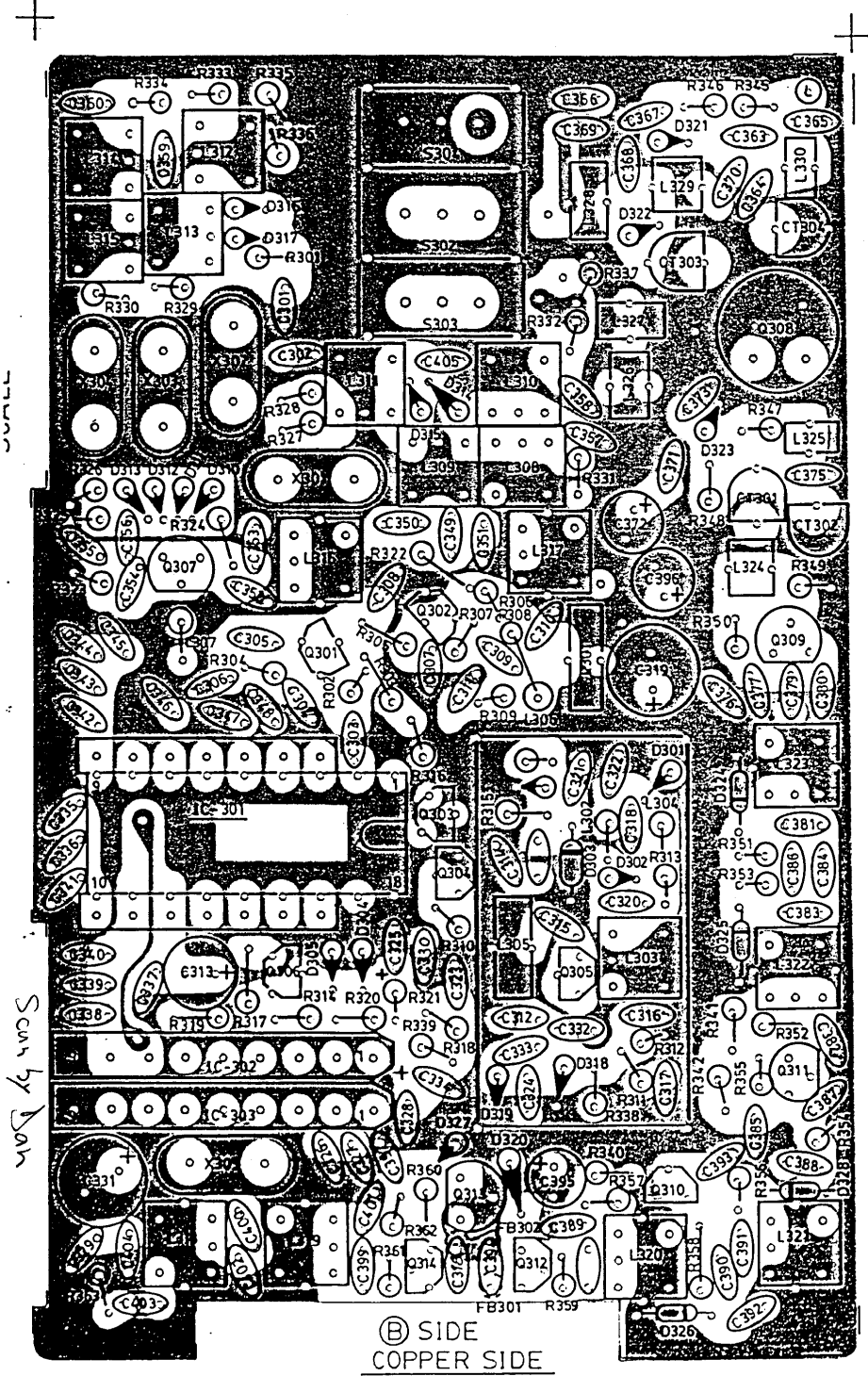
BOTTOM VIEW : PCBA

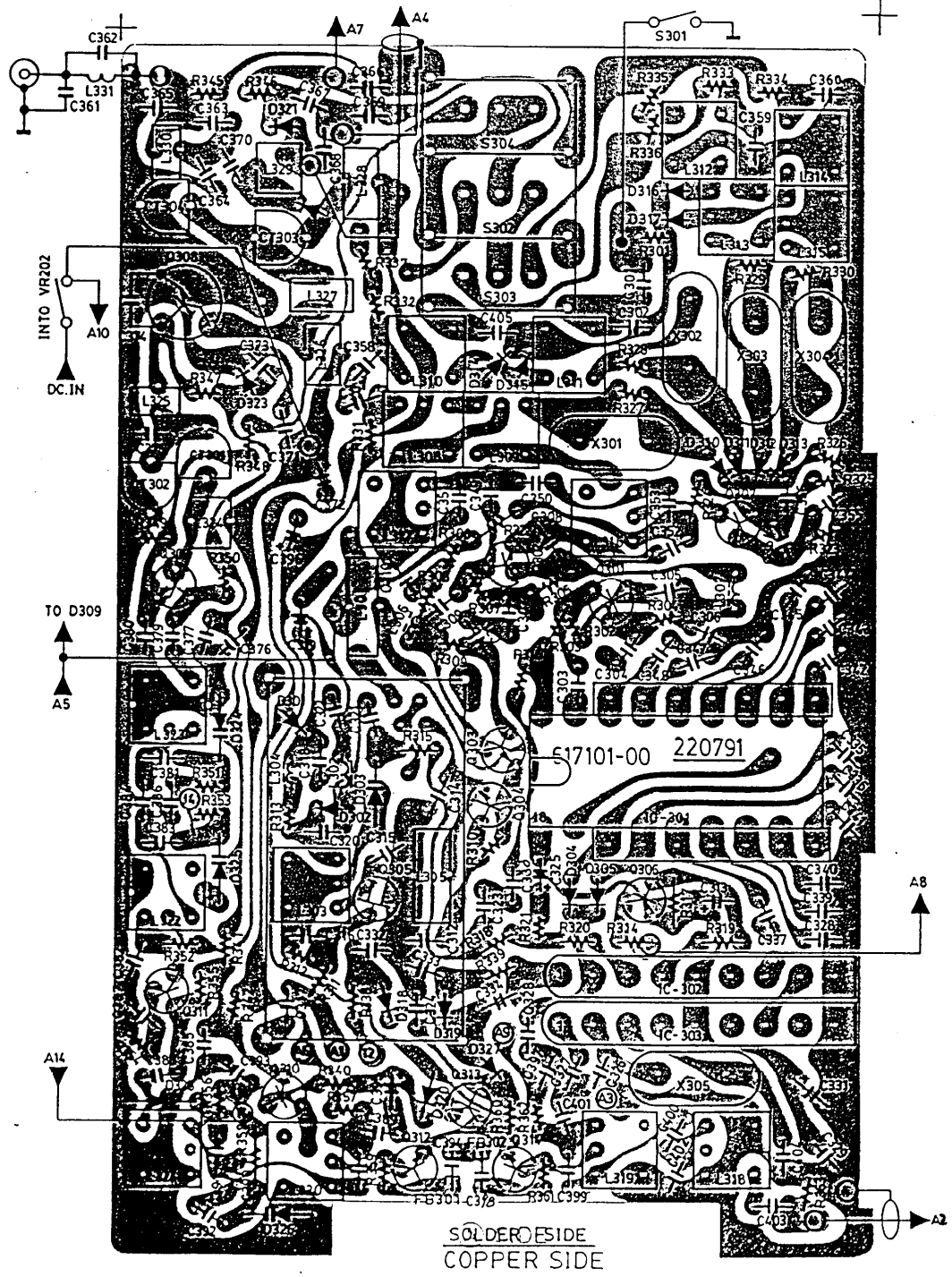
INTEK s.p.a.



TOP VIEW : PCB-B

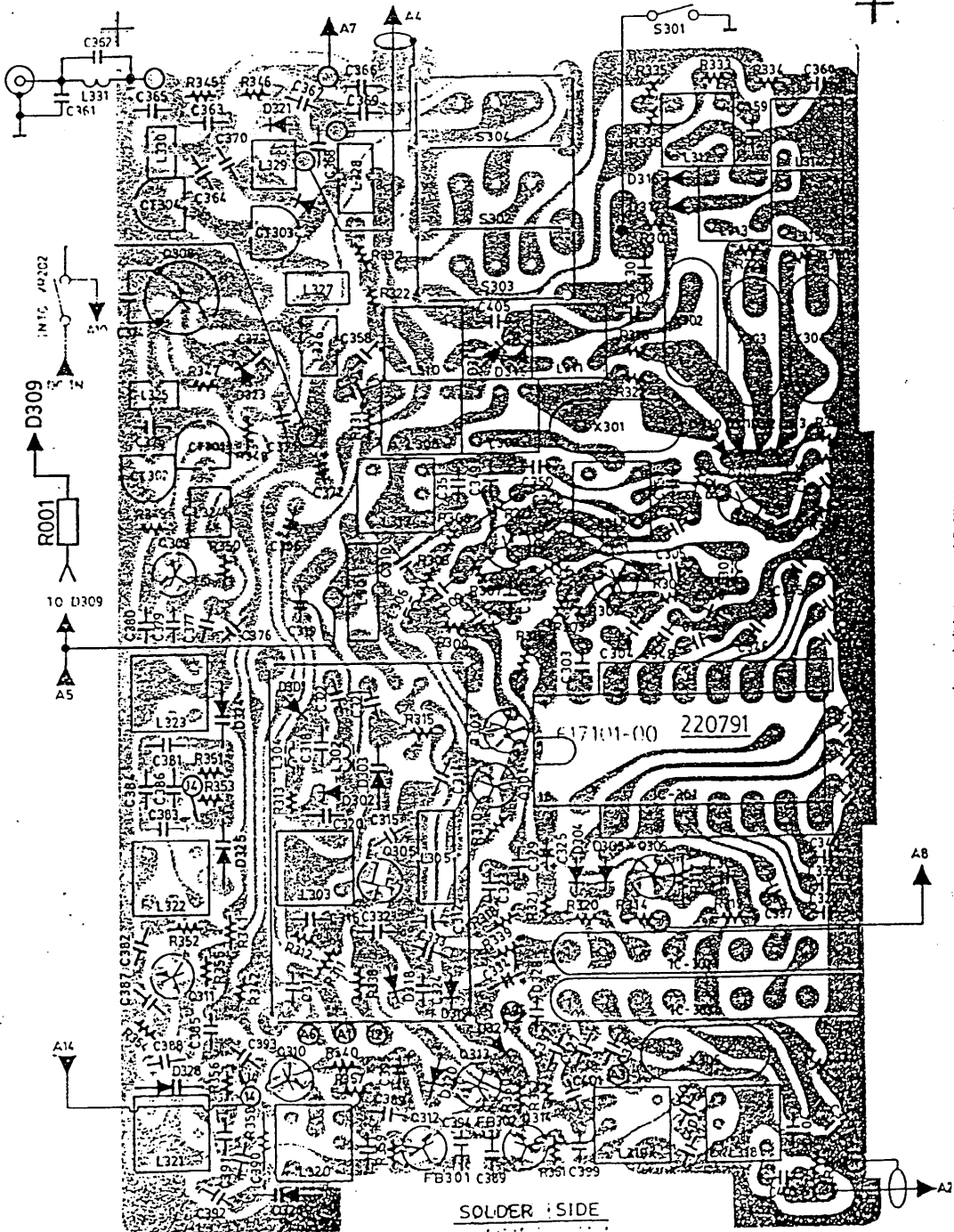
INTEK s.p.a.





BOTTOM VIEW PCB-B

BLOCK IN (142-149,9950MHz)



Downloaded by Amateur Radio Directory

BLOCK IN FREQUENCY (142 ~ 149.9950MHz)

1. Add the diode D001, D002 to PCB-A C1, C2 point, and then the diode other side to GND.
2. Found the white wire of location A5, and then disconnect his wire, and same time added the R001 to PCB-B between white wire and the location A5.

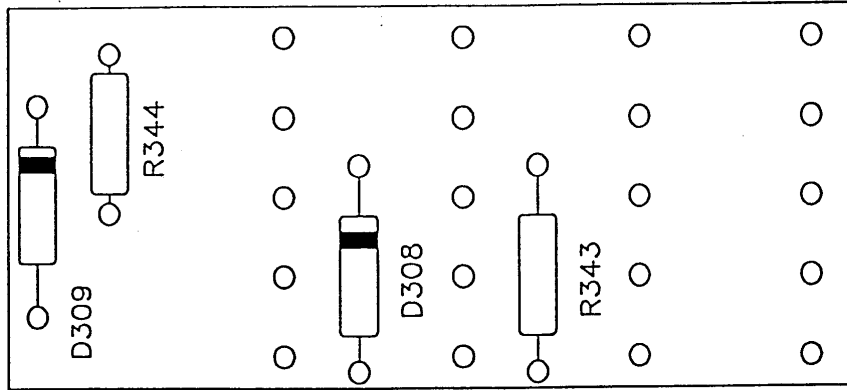
RECOVER FREQUENCY (142 ~ 167.9950 MHz)

1. Cut out D001, D002.
2. Disconnect white wire and then move out R001.
3. Connect white wire to A5 location.

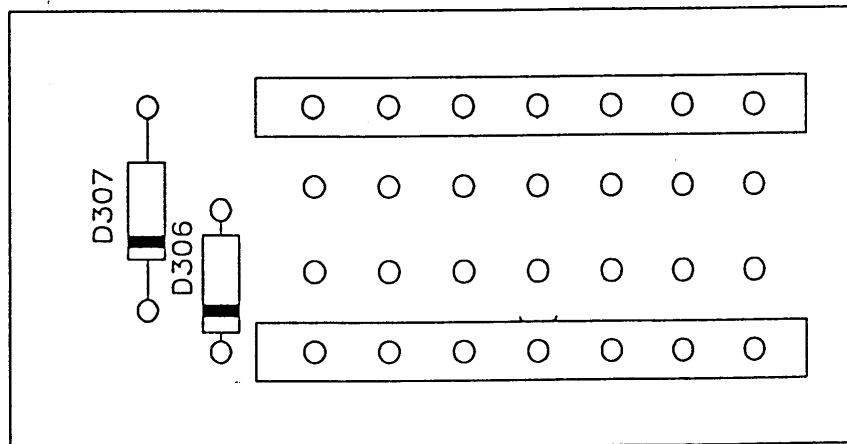
INTEK[®] KT-335EE

SERVICE MANUAL

617103-00

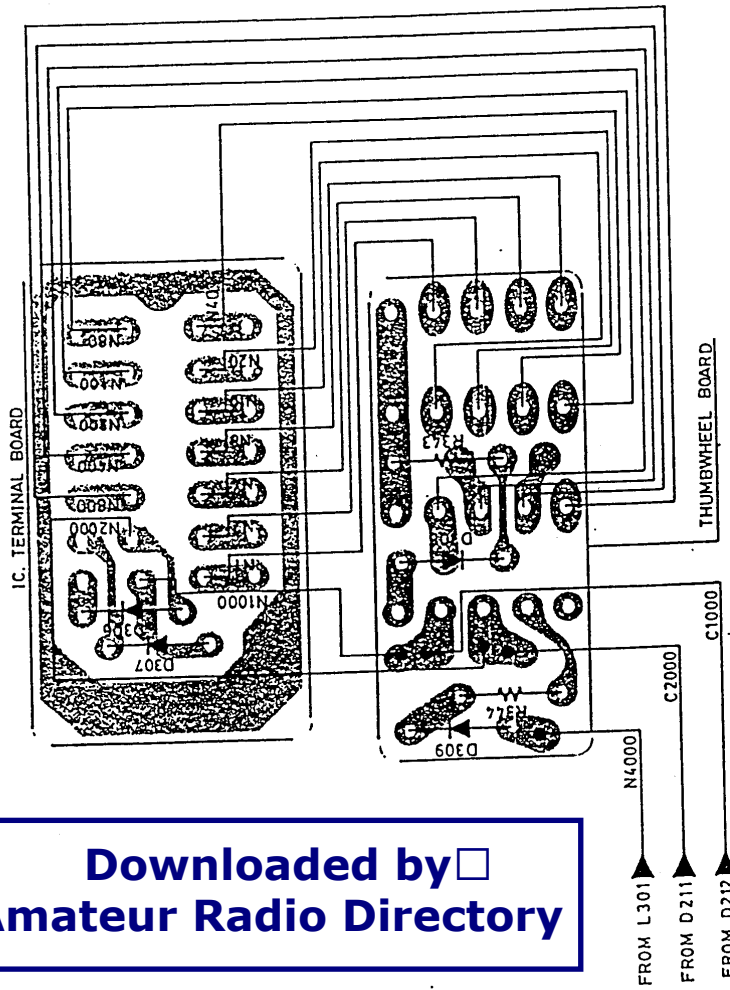


6171104-00



INTEK[®] KT-335EE

CONNECTION DRAWING **INTEK** s.p.a.



WIRES LIST	
N1 - N100	120MM RED
N2 - N200	120MM YELLOW
N4 - N400	120MM GREEN
N8 - N800	120MM BROWN
N1000	120MM ORANGE
C1000	80MM BLUE
N2000	120MM BLACK
C2000	80MM GREY
N4000	60MM WHITE

Downloaded by Amateur Radio Directory

KT-335EE

