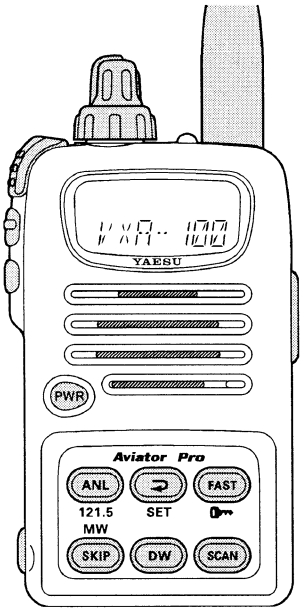
Air-Band Hand Held Transceiver

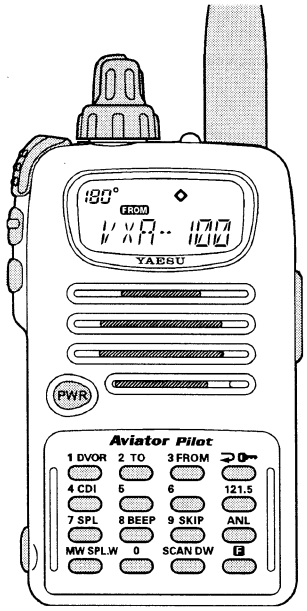
VXA-100

Service Manual

YAESU MUSEN CO., LTD.
1-20-2 Shimomaruko, Ota-Ku, Tokyo 146-8649, Japan
YAESU U.S.A.
17210 Edwards Rd., Cerritos, CA 90703, U.S.A.
YAESU EUROPE B.V.
Snipweg 3, 1118DN Schiphol, The Netherlands
YAESU UK LTD.
Unit 12, Sun Valley Business Park, Winnall Trading Estate
Winchester, Hampshire, SO23 0LB, U.K.
YAESU GERMANY GmbH
Am Kronberger Hang 2, D-65824 Schwalbach, Germany
YAESU HK LTD.
11th Floor Tsim Sha Tsui Centre, 66 Mody Rd.,
Tsim Sha Tsui East, Kowloon, Hong Kong



Aviator Pro (6key version)



Aviator Pilot (16key version)

The Yaesu Aviator Series of airband transceivers are compact, rugged hand-held transceivers providing both communication capability on the international Aircraft Communication Band (118 ~ 136.995 MHz). The Aviator Pro (6-key version) offers transmit and receive capability on the aircraft "COM" band, while the Aviator Pilot (16-key version) additionally provides VOR and CDI navigation features on the "NAV" band (108-117.995 MHz). Both keypad versions include our exclusive Omni-Glow™ display back-lighting, for minimal degradation of your night vision, as well as NOAA weather band monitoring capability

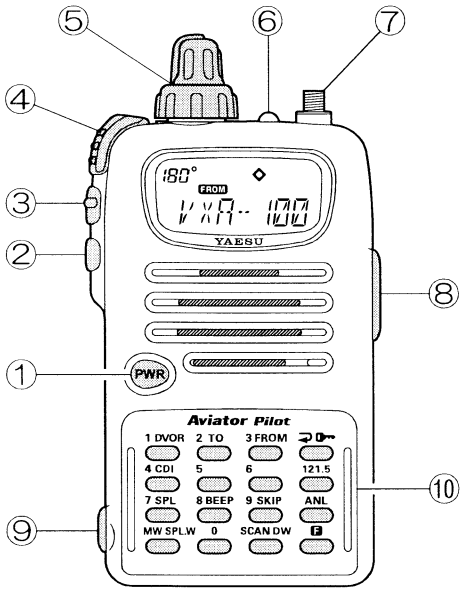
We recommend that you read this manual in its entirety, so as to understand the many features of the VXA-100 completely. Keep this manual handy, so you may use it for reference while flying.

Note: The Aviator Pilot's VOR and CDI Navigation features (16-key version) are supplemental aids to navigation only, and are not intended to be a substitute for accurate (primary) VOR/CDI or landing service equipment.

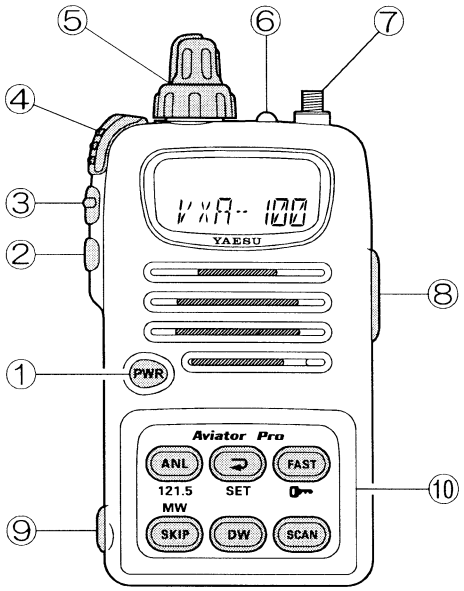
Contents

CONTROLS & CONNECTORS

Front Panel



Aviator Pilot (16key version)



Aviator Pro (6key version)

① **PWR** Switch

This is the main On/Off switch for the transceiver. Press and hold in this switch for ½ second to turn the radio on. When the radio is on, press and hold in this switch for two seconds to turn the radio off.

② **LAMP** Switch

This switch activates the back-lighting lamp for the display and keypad keys. The **LAMP** key may be configured in several ways via the Menu.

③ **MONITOR** Switch

This button may be pressed to "open" the Squelch manually, allowing you to listen for very weak signals.

④ **PTT** (PUSH TO TALK) Switch

Press this button to transmit when you are operating in the **COM** band. Release this button to return to the "RECEIVE" mode.

⑤ **VOLUME/CHANNEL** Selector

This is a dual (concentric) control set.

The (inner) **VOLUME** knob allows you to set the volume level from the speaker or headphones.

The outer **CHANNEL** Selector knob is used for selecting channels manually.

⑥ **BUSY/TX** Indicator Lamp

This lamp grows **green** when a signal is being received and **red** when transmitting.

⑦ Antenna Jack

This SMA jack accepts thee supplied flexible antenna, or another antenna designed to provide 50 Ω impedance on the Aircraft Communication Band.

⑧ **MIC/EAR** Jack

You may connect the **CT-60** Headset Cable or the (optional) **MH-44A4B** Speaker/Microphone to this jack.

⚠ *Never connect the any Speaker/Microphone that is not recommended by the manufacturer. Because these jack connection are unique using a Speaker/Microphone that is not specified by Yaesu will damage the* ***VXA-100.***

⑨ **EXT DC** Jack

When an external 12-Volt DC power is available, you may connect the **E-DC-5B** External DC Cable here. *Do not connect any wire to this jack if that wire is connected directly to a 28-Volt DC source*. Connecting the **VXA-100** directly to a source which exceeds 15.0 Volts DC will result in damage to the unit.

⑩ Keypad (16 key version)

Several keys have dual functions. The color of the label determines the way in which you activate the function:

The ***white*** labels represent the *primary* functions of the keys (activated by simply pressing the key momentarily).

The ***yellow*** labels represent the *secondary* functions of the keys (activated by pressing the [**F**] key first, then the indicated key).

The keypad, *primary* functions (white) are labeled to the left, while the *secondary* functions (yellow) are labeled to the right. This function is described in detail on the next page.

⑩ Keypad (6 key version)

Several keys have dual functions. The location of the label determines how it is accessed:

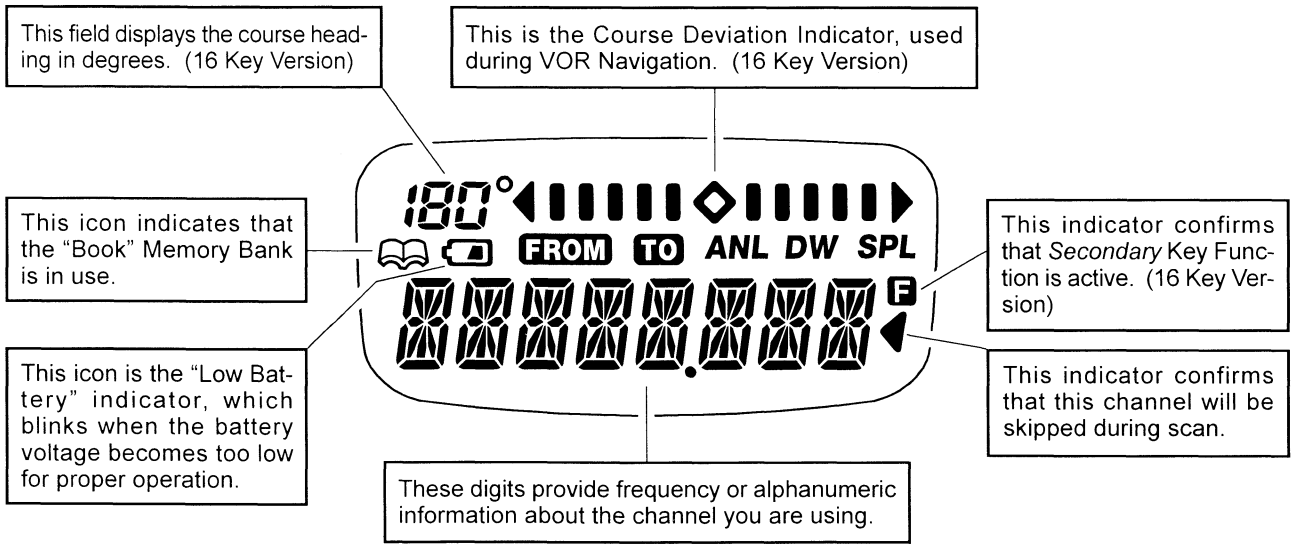
The labels printed *on* the ***white*** keys are the *primary* functions of the keys.

Access the primary function by pressing the key momentarily.

The labels printed *below* or *above* the keys are the *secondary* functions of the keys.

Access the secondary function of a key by pressing *and holding in* that key for longer than 2 seconds. This function is described in detail on the next page.

LCD Display



All icons at the below indicates 16 key Version only

FROM
This icon is used during VOR navigation, to indicate that the displayed information is based on a course *from* the VOR station. (16 Key Version)

TO
This icon is used during VOR navigation, to indicate that the displayed information is based on a course *to* the VOR station. (16 Key Version)

ANL
This indicator confirms that the Automatic Noise Limiter is activated.

DW
This indicator confirms that Dual Watch is active. (16 Key Version)

SPL
This indicator confirms that the "Split" (Duplex) mode is activated during VOR operation.

KEYPAD (16 key version)

	1 DVOR	2 TO	3 FROM	
Primary Function (Press Key)	Frequency Entry Digit 1	Frequency Entry Digit 2	Frequency Entry Digit 3	Selects Memory Display Type
Secondary Function (Press F +)	Activates DVOR mode	Selects "TO" VOR mode	Selects "FROM" VOR mode	Locks the Keypad
	4 CDI	5	6	121.5
Primary Function (Press Key)	Frequency Entry Digit 4	Frequency Entry Digit 5	Frequency Entry Digit 6	**Selects Emergency Channel (121.5 MHz)**
Secondary Function (Press F +)	Activates Course Direction Indicator mode	None	None	None
	7 SPL	8 BEEP	9 SKIP	ANL
Primary Function (Press Key)	Frequency Entry Digit 7	Frequency Entry Digit 8	Frequency Entry Digit 9	Activates Automatic Noise Limiter
Secondary Function (Press F +)	Activates Split (Duplex) mode on VOR	On/Off Switch for Keypad Beeper	Allows Skipping of Channel during Scan	None
	MW SPL.W	0	SCAN DW	F
Primary Function (Press Key)	Memory "Write" Command	Frequency Entry Digit 0	Activates Scanning	Activates "Secondary" Key mode
Secondary Function (Press F +)	Split-Memory "Write" Command	None	Activates Dual Watch	None

KEYPAD (6 key version)

	ANL 121.5	SET	FAST
Primary Function (Press Key)	Activates Automatic Noise Limiter	Selects Memory Display Type	Selects 1 MHz Channel Selection Step
Secondary Function (Press and Hold Key for 2 seconds)	**Selects Emergency Channel (121.5 MHz)**	Activates Set Menu	Locks the Keypad
	MW SKIP	DW	SCAN
Primary Function (Press Key)	Allows Skipping of Channel during Scan	Activates Dual Watch	Activates Scanning
Secondary Function (Press and Hold Key for 2 seconds)	Memory "Write" Command	None	None

Specifications

	Aviator Pro (6key version)	***Aviator Pilot*** (16key version)
General		
Frequency Range:	TX/RX 118.000 - 136.975 MHz RX Weather Channels (WX-01 - WX-10)	TX 118.000 - 136.975 MHz (COM Band) RX 108.000 - 117.975 MHz (NAV Band) 118.000 - 136.975 MHz (COM Band) Weather Channels (WX-01 - WX-10)
Channel Spacing:	25 kHz	25 kHz
Emission Type:	TX AM RX AM & FM	TX AM RX AM & FM
Supply Voltage:	6.0 - 15.0 VDC	6.0 - 15.0 VDC
Current Consumption:	133 µA (auto power off) 53 mA (squelch off) 175 mA (receive) 840 mA (transmit 1.5 W)	133 µA (auto power off) 53 mA (squelch off) 175 mA (receive) 840 mA (transmit 1.5 W)
Temperature Range:	–10° to +60° C	–10° to +60° C
Case Size (WxHxD):	57 x 99 x 39 mm w/FNB-41	57 x 99 x 39 mm w/FNB-41
Weight (approx.):	365 grams (with FNB-41, antenna, and belt clip)	365 grams with FNB-41, antenna, and belt clip
Receiver		
Circuit Type:	Double-conversion superheterodyne	Double-conversion superheterodyne
IFs:	35.4 MHz & 450 kHz	35.4 MHz & 450 kHz
Sensitivity:	<1 µV (for 6 dB S/N with 1 kHz, 30 % modulation)	<1 µV (for 6 dB S/N with 1 kHz, 30 % modulation)
Selectivity:	<8 kHz/–6 dB	<8 kHz/–6 dB
Adjacent CH. Selectivity:	<25 kHz/–60 dB	<25 kHz/–60 dB
AF Output (@13.8 V):	0.5 W @ 8 Ohms, 10 % THD	0.5 W @ 8 Ohms, 10 % THD
Transmitter		
Power Output (@ 9.6 V):	5.0 W (PEP), 1.5 W (Carrier Power)	5.0 W (PEP), 1.5 W (Carrier Power)
Frequency Stability:	Better than ±5 ppm (–10 °C to +60 °C)	Better than ±5 ppm (–10 °C to +60 °C)
Modulation System:	Low Level Amplitude Modulation	Low Level Amplitude Modulation
Spurious Emission:	> 60 dB below carrier	> 60 dB below carrier
Int. Microphone Type:	Condenser	Condenser
Ext. Mic. Impedance:	150 Ohms	150 Ohms

Field Programming Mode & CE-25

Field Programming Mode (Memory Storage into the BOOK Memory)

- ❑ Press and hold the **PTT** and **LAMP** switch while turning the radio on, to activate the Field Programming Mode.
- ❑ Select the desired frequency to be stored in the BOOK Memory.
- ❑ Press and hold the [**MW(SPLW)**] key (Aviator Pilot *16-key version*) or the [**MW(SKIP)**] key (Aviator Pro *6-key version*) for ½ second. The display will indicate "BOOK—" and a channel number will blink on the LCD.
- ❑ Within five seconds of pressing the [**MW(SPLW)**] (or [**MW(SKIP)**]) key, rotate the **CHANNEL** selector knob to select the desired memory channel number for storage.
- ❑ Now press and hold in the [**MW(SPLW)**] (or [**MW(SKIP)**]) key for ½ second; you will now see "_———-" on the LCD. To attach an alpha/numeric name (label) to the memory, proceed to the next step; otherwise press and hold [**MW(SPLW)**] (or [**MW(SKIP)**]) for ½ second to save the entry and exit.
- ❑ To label a memory with an alpha/numeric name, the next step is to use the **CHANNEL** selector knob to select any of the 48 available characters (including letters, numbers, and special symbols). When the desired first character appears, press [**MW(SPLW)**] (or [**MW(SKIP)**]) key momentarily to move on to the next character.
- ❑ Select succeeding characters in the same manner, pressing the [**MW(SPLW)**] (or [**MW(SKIP)**]) key momentarily after each selection.
- ❑ After entering the entire name (eight characters maximum), press the [**MW(SPLW)**] (or [**MW(SKIP)**]) key for ½ second to save all data for the channel and exit.

CE-25 Programming Software Instructions

With the CE-25 programming Software you can quickly and easily program the features and memories of the Yaesu VXA-100 handheld transceiver from your personal computer. The CE-25 Programming Software allows custom memory files to be stored, saved, merged, and edited for convenience when planning a journey. In the event of an accidental memory failure, transceiver memory and configuration data may be re-loaded in a matter of minutes.

The CE-25 Programming Software diskette contains the following files:

- CE25.EXE - The executable programming software;
- CE25.HLP - The "Help" file used with the main program; and
- CE25.CFG - The "Configuration" file for the main program.

Before connecting the VXA-100 for programming, turn off both the computer and the VXA-100. Now connect the CT-42 PC Programming Cable to the computer's serial port and the VXA-100 as shown in the illustration. *Then* it will be safe to restart the computer; turning off the equipment during interconnection avoids damage to the electronics caused by voltage spikes.

Insert the distribution diskette into your 3½" drive (after booting DOS), and make a copy of the diskette; use the distribution diskette for archive purposes, and use the disk copy for programming.

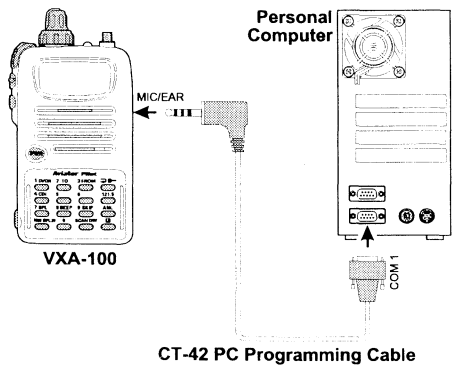
Place the CE-25 (copy) diskette into your 3½" drive (usually "Drive A"), and log onto this drive by typing **A:[ENTER]**. At this point, you may make a directory for the CE-25 software, if you like, according to standard DOS procedures (using the **MKDIR** command). Load the contents of the CE-25 diskette into this directory, using the **COPY** command (e.g. **COPY A:*.* C:** [directory name]).

Now type **CE25 [ENTER]** to start the program. The introductory screen will appear, and you may press any key to enter the main screen, as shown below.

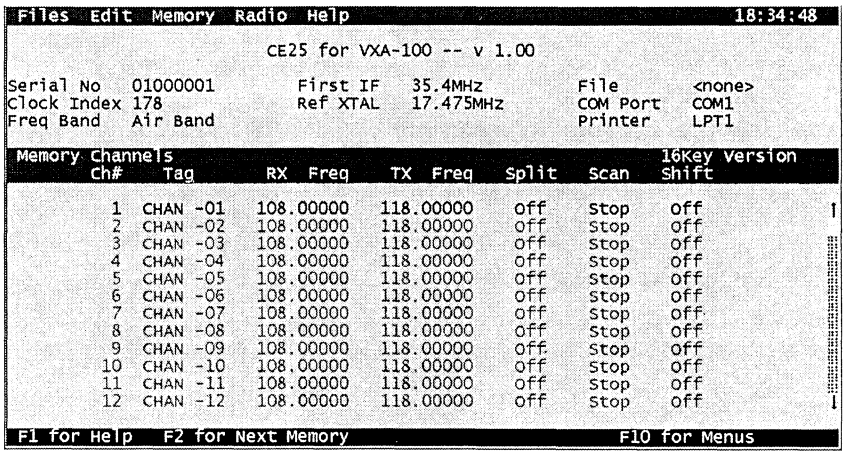
Choose the "Help" contents option from the program's Menu for assistance with program operation.

Important Note!

Do not work directly with the CE-25 programming diskette. Make a copy of it and use the copy when programming the VXA-100. Keep it and the original distribution diskette in a safe place in case you need to make another copy of it later.



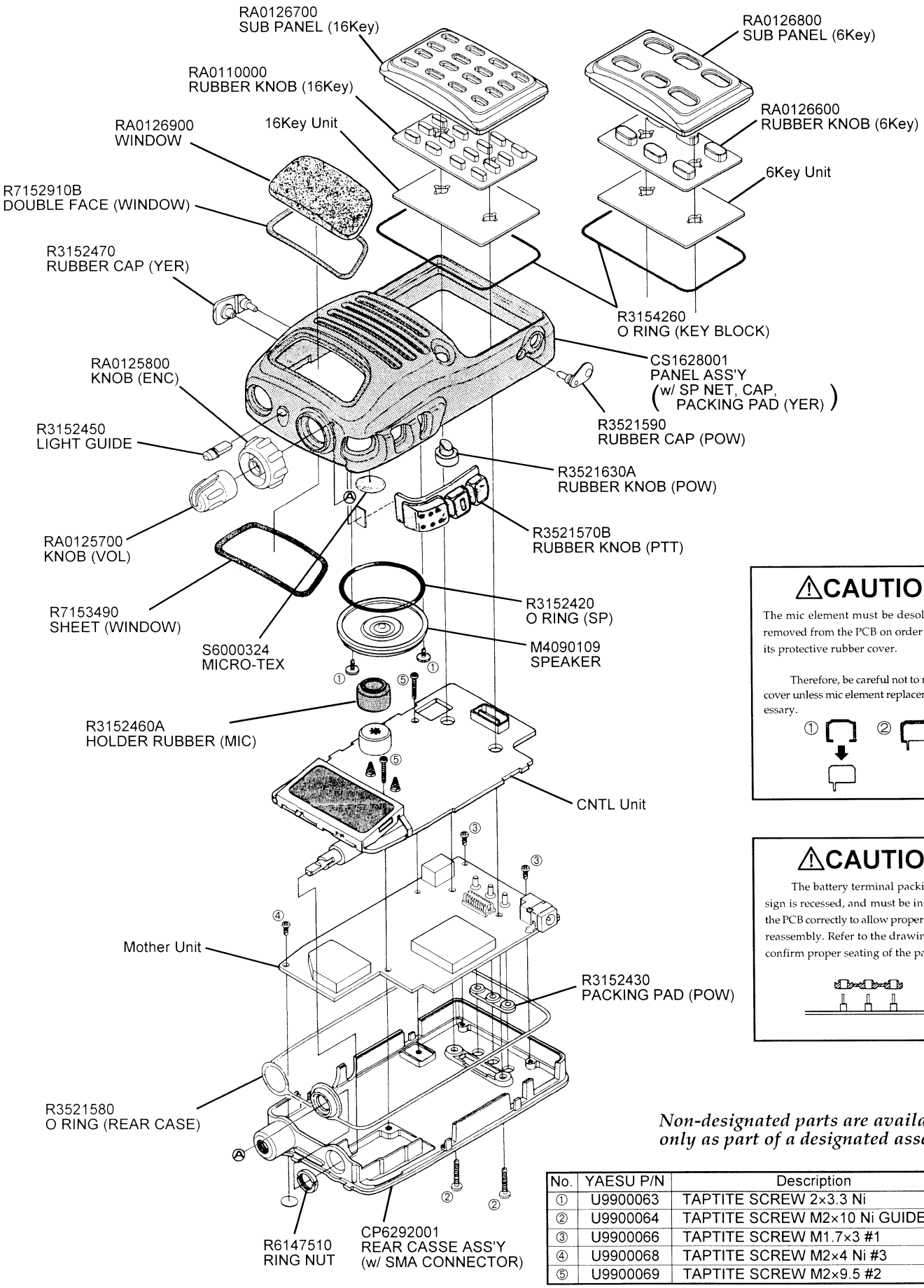
CE-25 Programming Setup



CE-25 Main Screen

Notes:

Exploded View & Miscellaneous Parts



⚠CAUTION

The mic element must be desoldered and removed from the PCB on order to reinstall its protective rubber cover.

Therefore, be careful not to remove this cover unless mic element replacement is necessary.

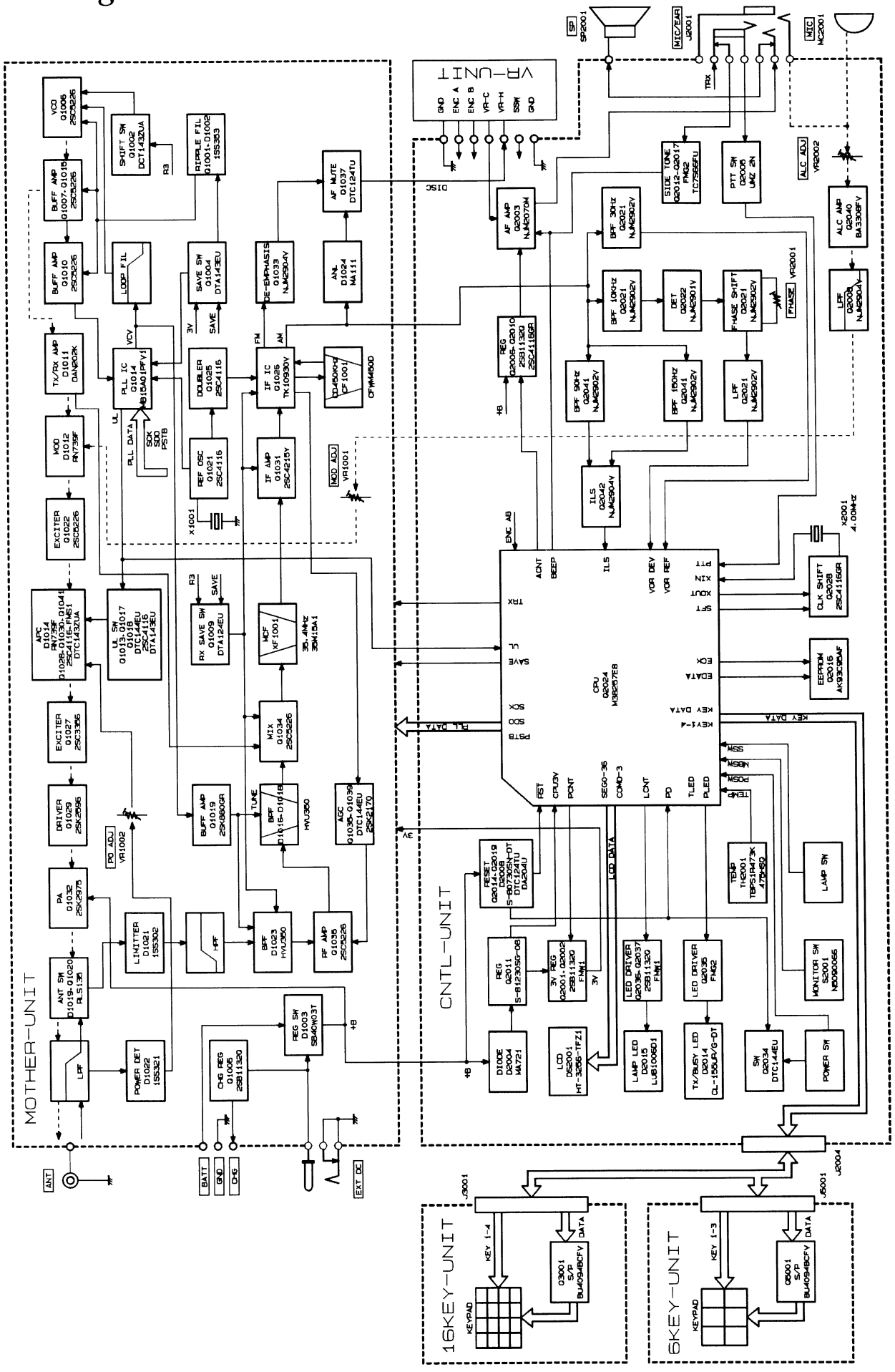
⚠CAUTION

The battery terminal packing pad design is recessed, and must be installed into the PCB correctly to allow proper transceiver reassembly. Refer to the drawing below to confirm proper seating of the pad.

Non-designated parts are available only as part of a designated assembly.

No.	YAESU P/N	Description	Qty.
①	U9900063	TAPTITE SCREW 2×3.3 Ni	2
②	U9900064	TAPTITE SCREW M2×10 Ni GUIDE	2
③	U9900066	TAPTITE SCREW M1.7×3 #1	2
④	U9900068	TAPTITE SCREW M2×4 Ni #3	1
⑤	U9900069	TAPTITE SCREW M2×9.5 #2	2

Block Diagram



Receive Signal Path

Incoming RF from the antenna jack is delivered to the MOTHER Unit and passes through a low-pass filter and high-pass filter consisting of coils L1029, L1030, L1032, L1027, L1031, and L1035, capacitors C1145, C1152, C1141, C1144, C1149, C1156, C1142, C1147, C1115, C1154, and C1155, and antenna switching diodes D1019 and D1020 (both **RLS135**), prior to delivery to the RF preamplifier section.

Signals within the frequency range of the transceiver then enter a varactor-tuned band-pass filter consisting of coils L1015, L1021, L1024, L1025, L1033, and L1034, capacitors C1110, C1112, C1121, C1124, C1146, C1111, C1122, C1108, C1117, C1127, C1134, and C1157, and diodes D1015, D1017, D1018, and D1023 (all **HVU358**); the signals then are amplified by Q1036 (**2SC5226**).

Buffered output from the VCO is amplified by Q1015 (**2SC5226**) to provide a pure 1st local signal between 143.4 and 172.4 MHz for injection to the 1st mixer, Q1034 (**2SC5226**). The 35.4 MHz 1st mixer product then passes through monolithic crystal filter XF1001 (**35M15A1**, ±7.5 kHz band width) which strips away all but the desired signal, which is then amplified by mixer postamp Q1031 (**2SC4215**).

The amplified 1st IF signal is applied to the AM/FM IF subsystem IC Q1026 (**TK10930V**), which contains the 2nd mixer, 2nd local oscillator, limiter amplifier, noise amplifier, and AM/FM detector.

The 2nd local signal is generated by PLL reference/2nd local oscillator Q1021 (**2SC4116GR**) using 17.475 MHz crystal X1001 to produce the 450 kHz 2nd IF when mixed with the 1st IF signal within Q1026. The 2nd IF then passes through the ceramic filter CF1001 (**CFWM450D**) to strip away unwanted mixer products.

A portion of the AF signal from the AM/FM IF subsystem Q1026 is converted into DC voltage within the IC, and then applied to the inversion amplifiers Q1039 (**2SK2170**) and Q1035 (**DTC144EU**). These amplifiers reduce the stage gains of IF amplifier Q1031 and the RF amplifier Q1039 when receiving a strong signal.

Detected audio from Q1026 is applied to the amplifier Q2012-4 (**NJM2904**) and ANL circuit. The processed signal passes through the audio mute gate Q1037 (**DTC124TU**) and the Volume control to the audio power amplifier Q2003 (**NJM2070M**) on the CNTL Unit, providing up to ½ Watt of audio power to the headphone jack or 8 Ω loudspeaker.

When impulse noise is received, a portion of the AM detector output signal from the AM/FM IF subsystem Q1026, including the impulse noise, is rectified by D1024 (**MA111**). The resulting DC control voltage is applied to the AF MUTE gate Q1037 (**DTC124TU**), thus reducing the noise level.

Squelch Control

The squelch circuitry consists of a noise amplifier, band-pass filter, and noise detector within Q1026 on the MOTHER Unit, squelch gates Q2006 (**2SC1132Q**) and Q2010 (**2SC4116GR**), and control and A/D (Analog-to-Digital Conversion) circuitry within the microprocessor Q2024 (**M38257**) on the CNTL Unit.

When no carrier is received, noise at the output of the detector stage in Q1026 is amplified, band-pass filtered, and detected by Q1026. The resulting DC squelch control voltage is passed to pin 2 of Q2024.

While no carrier is being received, pin 29 of Q2024 remains low, causing pin 48 of Q2024 to make Q2035 (**FMG2**) hold the green (BUSY) half of the LED off. Likewise, pin 34 of Q2024 causes the AF mute gate, Q1037 (**DTC124TU**), to hold the AF line low to block receiver audio. When a carrier appears at the discriminator, noise is removed from the output, causing pin 2 of Q2024 to go high and the microprocessor Q2024 to turn on the BUSY LED and the AF line.

The microprocessor stops scanning, if active, and allows audio to pass through the AF mute gate Q1037 and the audio amplifier Q2003 to the

loudspeaker.

Transmit Signal Path

Speech input from the microphone is applied to the mic amplifier, Q2040 (**BA3308FV**), on the CNTL Unit. The amplified speech signal's amplitude is adjusted by VR2002, then passes through high-pass filter Q2008 (**BA4510FV**) and low-pass filter Q2008 (**BA4510FV**), and is delivered to the AM modulator D1012 (**RN739F**) on the MOTHER Unit.

When using the optional headset, the SIDETONE signal from Q2012 (**FRG2**) becomes "HIGH", turning Q2010 (**TC7S66FU**) on, therefore a portion of the speech signal applied to the AF power amplifier Q2003 as a monitor signal.

The carrier signal from the VCO Q1006 (**2SC5226**) passes through buffer amplifiers Q1007 and Q1015 (both **2SC5226**) and TX/RX switch D1011 (**DAN202K**) to the AM modulator D1012, where it is (low-level) modulated by the amplified speech signal.

The modulated signal from D1012 is amplified by Q1022 (**2SC5226**), Q1027 (**2SC3356**) and Q1029 (**2SK2973**), and ultimately applied to the final amplifier, Q1032 (**2SK2975**) which increases the signal level up to 5 watts of output power. The transmit signal then passes through the antenna switch D1019 (**RLS135**), and is low-pass filtered to suppress away harmonic spurious radiation before delivery to the antenna.

Automatic Transmit Power Control

RF power output from the final amplifier is sampled by C1143/C1148 and is rectified by D1022 (**1SS321**). The resulting DC is fed through the Automatic Power Controller, Q1030 (**FMS1**), to the APC attenuator D1014 (**RN739F**), thus providing control of the power output.

Transmit Inhibit

When the transmit PLL is unlocked, pin 7 of PLL chip Q1014 (**MB15A01PFV1**) goes to a logic "low." The resulting DC "unlock" control voltage switches off TX inhibit switches Q1016 (**2SA812**) and Q1013 (**DTC144EU**) to disable the supply voltage to transmitter RF amplifiers Q1022 and Q1027, thereby disabling the transmitter.

Spurious Suppression

Generation of spurious products by the transmitter is minimized by the fundamental carrier frequency being equal to the final transmitting frequency. Additional harmonic suppression is provided by a low-pass filter consisting of L1029, L1030, and L1032 and C1141, C1144, C1145, C1149, C1152, and C1156, resulting in more than 60 dB of harmonic suppression prior to delivery of the RF signal to the antenna.

PLL Frequency Synthesizer

PLL circuitry on the MOTHER Unit consists of VCO Q1006 (**2SC5226**), VCO buffer Q1010 (**2SC5226**), and PLL subsystem IC Q1014 (**MB15A01PFV1**), which contains a reference divider, serial-to-parallel data latch, programmable divider, phase comparator, and charge pump.

Stability is maintained by a regulated 3 V supply, using Q2011 (**S-81230SG-QB**) and Q2002 (**2SB1132Q**) on the CNTL Unit, which feeds the PLL reference oscillator Q1021 (**2SC4116GR**), as well as capacitors associated with the 17.475 MHz frequency reference crystal X1001.

In the receive mode, VCO Q1001 oscillates between 143.4 and 172.4 MHz. The VCO output is buffered by Q1010, and applied to the prescaler section of Q1014. There the VCO signal is divided by 64 or 65, according to a control signal from the data latch section of Q1014, before being applied to the programmable divider section of Q1014. The data latch section of Q1014 also receives serial dividing data from the microprocessor (Q2024) on the CNTL Unit, which causes the pre-divided VCO signal to be further divided in the programmable divider section, depending upon the desired receive frequency, so as to produce a 5 kHz derivative of the current VCO frequency.

Meanwhile, the reference divider section of

Q1014 divides the 17.475 MHz crystal reference from the reference oscillator Q1021 by 3495 to produce the 5 kHz loop reference. The 5 kHz signal from the programmable divider (derived from the VCO) and that derived from the reference oscillator are applied to the phase detector section of Q1014, which produces a pulsed output with pulse duration depending on the phase difference between the input signals. This pulse train is filtered to DC and returned to the varactor D1001 (**HVU350**).

Changes in the level of the DC voltage applied to the varactors affect the reactance in the tank circuit of the VCO, changing the oscillating frequency of the VCO according to the phase difference between the signals derived from the VCO and the crystal reference oscillator. The VCO is thus phase-locked to the crystal reference oscillator.

The output of the VCO Q1006 is buffered by Q1015 before application to the 1st mixer, as described previously.

For transmission, VCO Q1006 oscillates between 118 and 137 MHz. The remainder of the PLL circuitry is shared with the receiver. However, the dividing data from the microprocessor is such that the VCO frequency is at the actual transmit frequency (rather than offset for IFs, as in the receiving case).

Receive and transmit buses select which VCO is made active, and they are controlled by Q1002 (**DTC143ZUA**). FET Q1019 (**2SK880GR**) buffers the VCV line for application to the tracking band-pass filters in the receiver front end.

When the power saving feature is active, the microprocessor periodically signals to the PLL IC Q1014 to conserve power, and to shorten its lock-up time.

Push-To-Talk Transmit Activation

The PTT switch on the microphone is fed through the PTT controller, Q2005 (**UMZ2N**), to pin 41 of microprocessor Q2024, so that when the PTT switch is closed, pin 18 of Q2024 goes "high." This signals the microprocessor to activate the TX/RX controller chain Q1011 (**DTA143EU**), Q1017 (**2SC4116GR**) and Q1018 (**DTA143EU**), which then cuts off the receiver by disabling the 3 V supply bus at Q1003 (**DTA143EU**) which feeds the front-end, FM IF subsystem IC Q1026, and receiver VCO circuitry. At the same time, Q1017 (**2SC4116GR**) and Q1018 (**DTA143EU**) activate the transmit 3 V supply line to enable the transmitter.

VOR Circuit

When the transceiver is set in the Navigation band (108.000-117.975 MHz), the VOR CNTL port (pin 28 of Q2024) becomes "high," turning the 3 V supply bus Q2023 (**IMD2**) On, consequently turning the VOR circuit On.

A portion of the AF signal from the AM/FM IF subsystem IC (Q1026) is applied to the VOR circuit, consisting of Q2021, Q2022, Q2041, and Q2042 (all **NJM2902V**), where it is detected as a variable signal and reference signal from a VOR station. The VOR circuit sends these signals to the microprocessor Q2024 for analysis and display of VOR information.

Alignment

The VXA-100 is carefully aligned at the factory for the specified performance across the Aircraft and Weather bands. Realignment should therefore not be necessary except in the event of a component failure.

The following procedures cover the adjustments that are not normally required once the transceiver has left the factory. However, if damage occurs and some parts subsequently are replaced, realignment may be required. If a sudden problem occurs during normal operation, it is likely due to component failure; realignment should not be done until after the faulty component has been replaced.

We recommend that servicing be performed only by authorized Yaesu service technicians who are experienced with the circuitry and fully equipped for repair and alignment. If a fault is suspected, contact the dealer from whom the transceiver was purchased for instructions regarding repair. Authorized Yaesu service technicians realign all circuits and make complete performance checks to ensure compliance with factory specifications after replacing any faulty components.

Those who do undertake any of the following alignments are cautioned to proceed at their own risk. Under no circumstances should any alignment be attempted unless the normal function and operation of the transceiver are clearly understood, the cause of the malfunction has been clearly pinpointed and any faulty components replaced, and realignment determined to be absolutely necessary. Problems caused by unauthorized attempts at realignment are not covered by the warranty policy.

Yaesu reserves the right to change circuits and alignment procedures, in the interest of improved performance, without notifying owners.

The following test equipment (and familiarity with its use) is necessary for complete realignment. While most steps do not require all of the equipment listed, the interactions of some adjustments may require that more complex adjustments be performed afterwards. Do not attempt to perform only a single step unless it is clearly isolated electrically from all other steps. Have all test equipment ready before beginning, and follow all of the steps in a section in the order presented.

Correction of problems caused by misalignment resulting from use of improper test equipment is not covered under the warranty policy.

Required Test Equipment

- Avionics Radio Tester with calibrated output level at 200 MHz.
- In-line Wattmeter with 5% accuracy at 200 MHz
- 50-Ω, 10-W RF Dummy Load
- Regulated DC Power Supply adjustable from 3 to 15 VDC, 2A
- Frequency Counter: ±0.2 ppm accuracy at 200 MHz
- AF Signal Generator
- AC Voltmeter
- VHF Sampling Coupler

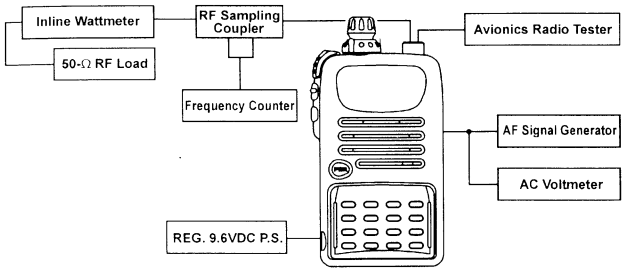
Alignment Preparation & Precautions

A 50-Ω RF load and in-line wattmeter must be connected to the main antenna jack in all procedures that call for transmission, except where specified otherwise. Correct alignment is not possible with an antenna. After completing one step, read the next step to see if the same test equipment is required. If not, remove the test equipment (except dummy load and wattmeter, if connected) before proceeding.

Correct alignment requires that the ambient temperature be the same as that of the transceiver and test equipment, and that this temperature be held constant between 20°~30°C (68°~86°F). When the transceiver is brought into the shop from hot or cold air, it should be allowed some time to come to room temperature before alignment. Whenever possible, alignments should be made with oscillator shields and circuit boards firmly affixed in place. Also, the test equipment must be thoroughly warmed

up before beginning.

Set up the test equipment as shown below for transceiver alignment, apply 9.6V DC power to the transceiver. Refer to the drawings for Alignment Points.



Alignment Setup

PLL Reference Frequency

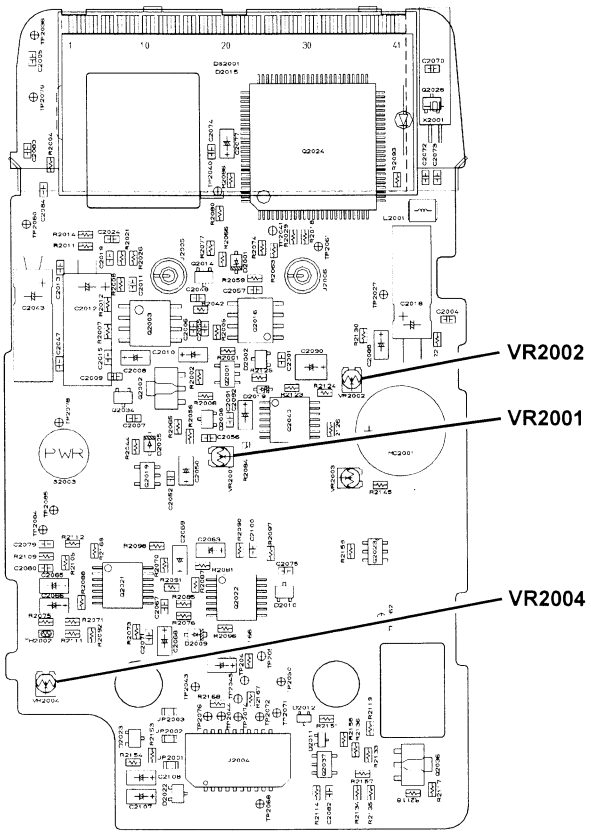
- ❒ Connect the wattmeter, dummy load and frequency counter connected to the antenna jack, and tune the transceiver to 120.00 MHz.
- ❒ Transmit, and adjust **TC1001** on the RF Unit, if necessary, so the counter frequency is 120.000.00 MHz (±100 Hz).

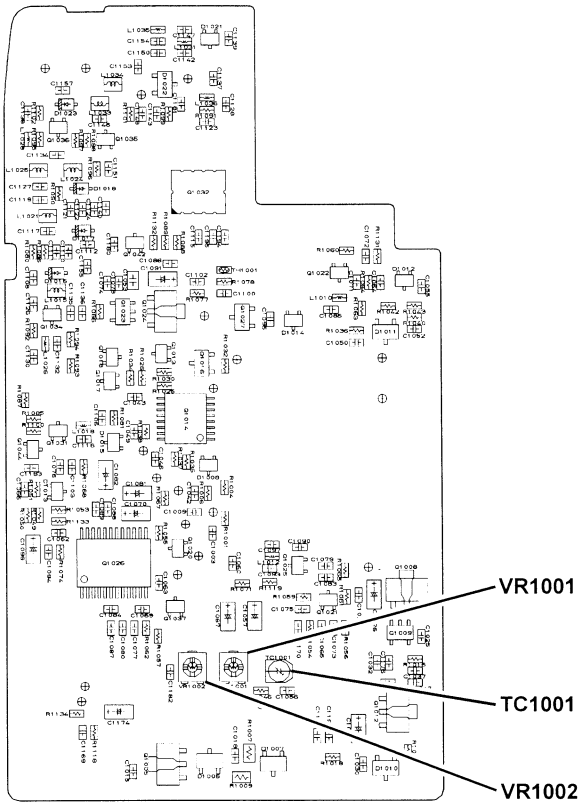
TX Power Adjustment

- ❒ Connect the wattmeter and dummy load to the antenna jack, and tune the transceiver to 128.00 MHz.
- ❒ Transmit, and adjust **VR1002** to obtain 1.5 W RF (carrier) power indicated on the wattmeter (without audio modulation input).

TX Modulation Adjustment

- ❒ Connect the Avionics Radio Tester to the antenna jack, then adjust the AF generator output level for injection of 200 mV rms @ 1 kHz to the MIC jack. Leave the transceiver tuned to 125.50 MHz.
- ❒ Transmit, and adjust **VR1001** to obtain 85% modulation (±5%) as indicated on the Avionics Radio Tester.
- ❒ Reduce the AF generator output level to 20 mV rms, then adjust **VR2002** to obtain 30% modulation (±3%) on the Avionics Radio Tester.





Alignment Point

Alignment

VOR Phase Adjustment (16 key type)

❒ Set the transceiver to 108.000 MHz, set up the "FROM" mode (press [**F**] + [**3**] key, if necessary), and set the Avionics Radio Tester as shown below.

Frequency	108.000 MHz
Output Level	+40 dBμ
30 Hz VAR.	30 %
9.96 kHz Carrier	30 %
9.96 kHz MOD	480 Hz
DIRECT	FROM
PHASE	90°

❒ Adjust **VR2001** for 90° (±1°) on the transceiver display.

VOR Sensitivity Adjustment (16 key type)

❒ Set the transceiver to 108.000 MHz, set up the "FROM" mode (press [**F**] + [**3**] key, if necessary), and reduce the RF signal level to +10 dB μ.

❒ Adjust **VR2004** for appear the Course Indicator.

Internal System Alignment Routine

This feature uses a programmed routine in the transceiver which replaces many previously-complex discrete settings and adjustments with digitally-controlled settings via front panel buttons. Transceiver adjustments include:

- Squelch Hysteresis Adjustment
- Squelch Threshold Adjustment
- Squelch "Tight" Adjustment

To begin, set the transceiver to 127.5 MHz, and turn the transceiver off. Then press and hold in the **LAMP** switch, **PTT** switch, and the (inner) **VOLUME** knob while turning the transceiver on again.

Squelch Hysteresis Adjustment (HSSQ)

❒ Press the (inner) **VOLUME** knob, then select a higher or lower squelch hysteresis level using the (outer ring) **CHANNEL** selector knob.

❒ Next, press the **VOLUME** knob.

❒ Rotate the **CHANNEL** selector knob to select the next setting.

Squelch Threshold Adjustment (THSQ)

❒ Inject a –9 dBμ (0.35 μV) RF signal (with a standard modulation: 30 % AM modulation @ 1 kHz), then press the **VOLUME** knob twice.

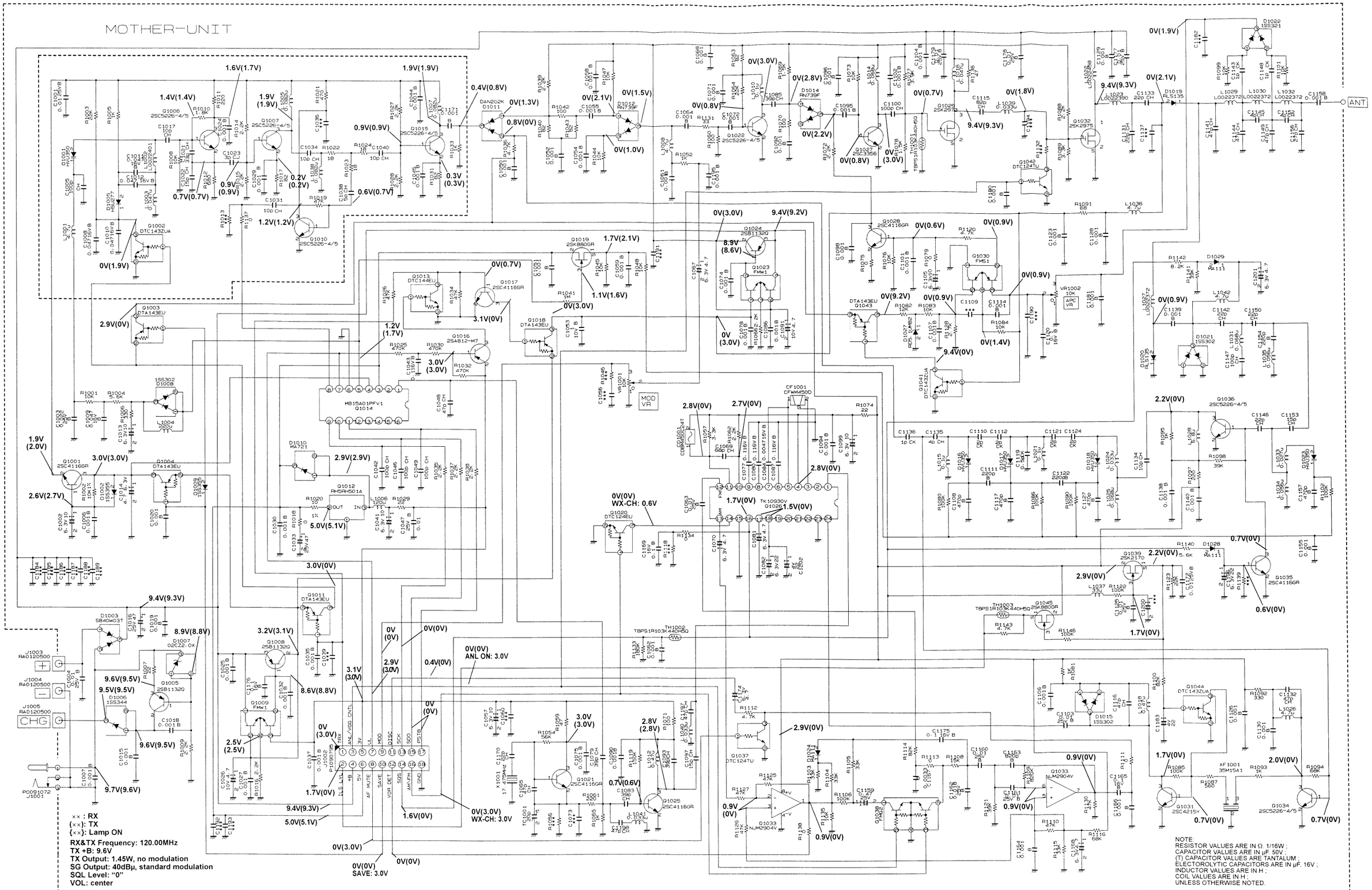
❒ Now rotate the **CHANNEL** selector knob to select the next setting.

Squelch "Tight" Adjustment (TISQ)

❒ Increase the RF signal level to +15 dBμ (5.6 μV), then press the **VOLUME** knob twice.

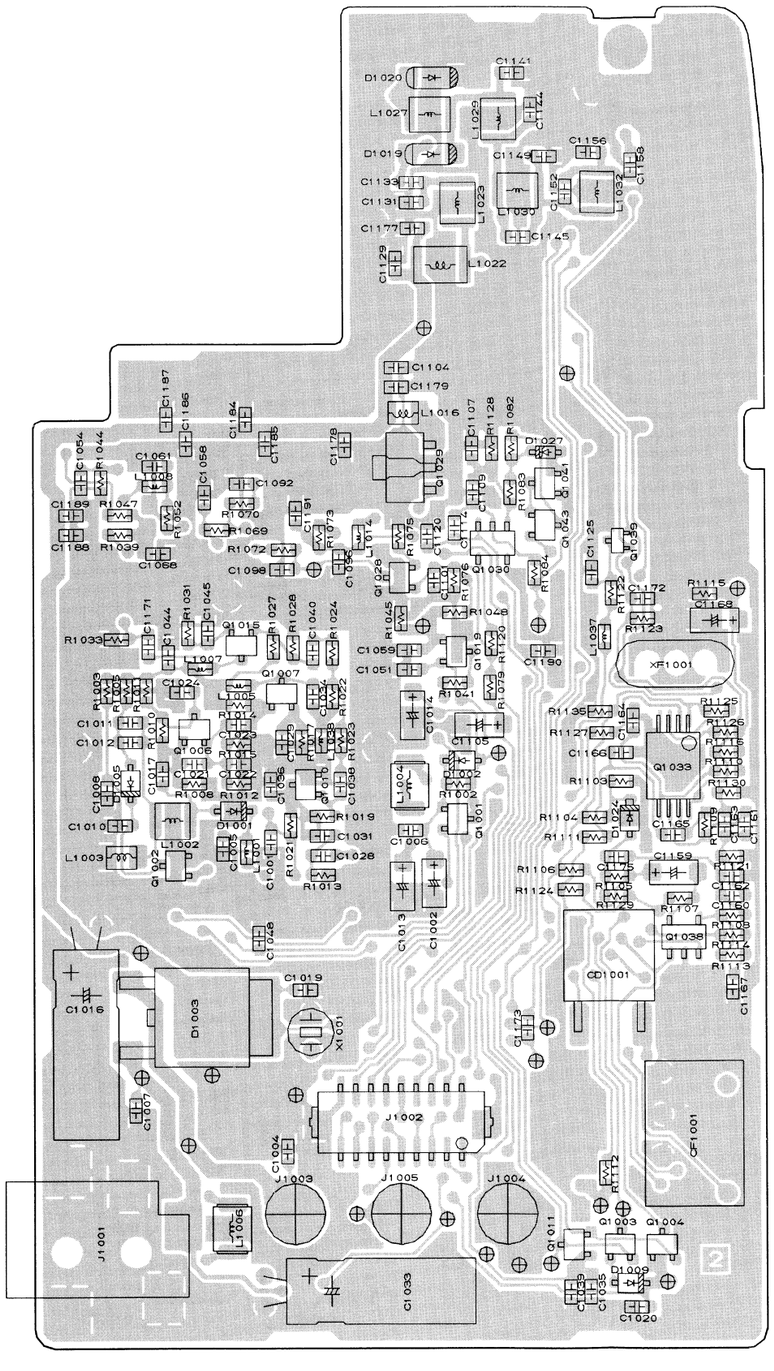
❒ Press and hold in the **VOLUME** knob for ½ second to save the setting and exit.

MOTHER-UNIT

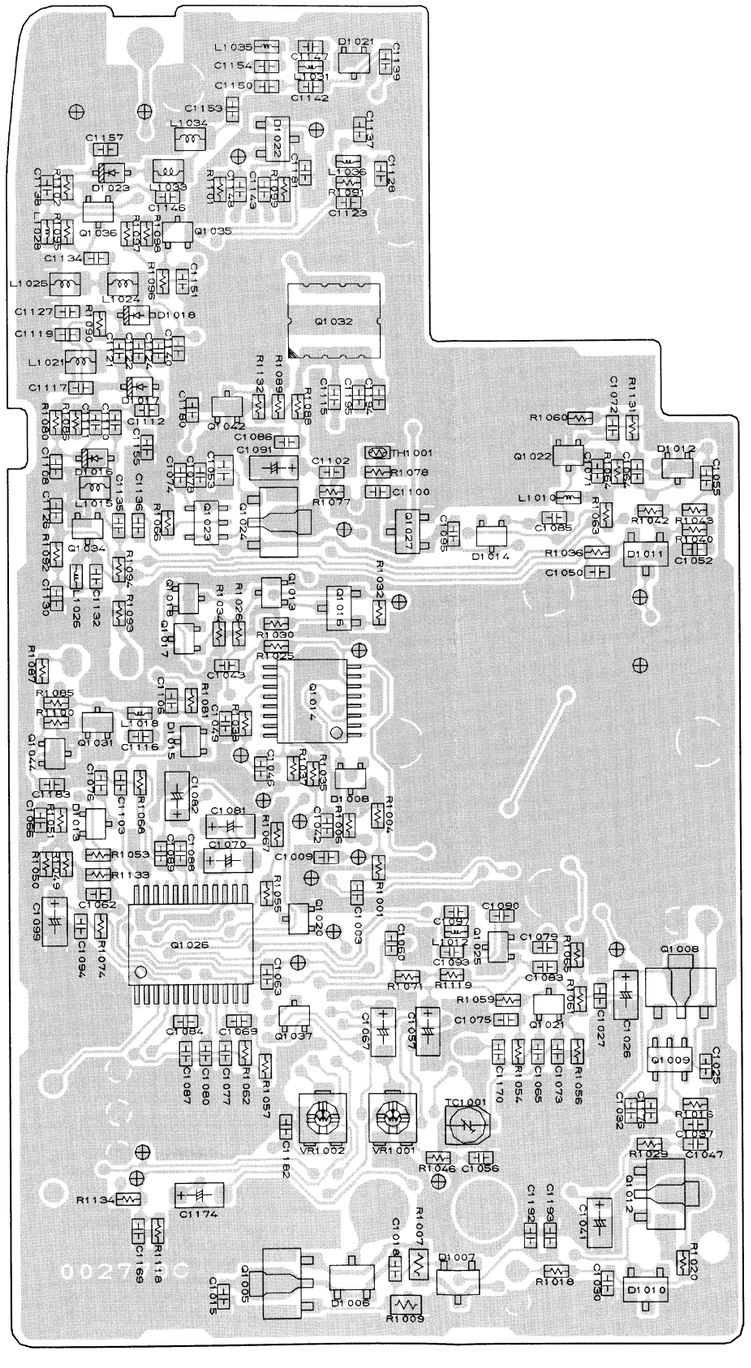

××: RX
(××): TX
{××}: Lamp ON
RX&TX Frequency: 120.00MHz
TX +B: 9.6V
TX Output: 1.45W, no modulation
SG Output: 40dBμ, standard modulation
SQL Level: "0"
VOL: center
NOTE:
RESISTOR VALUES ARE IN Ω, 1/16W ;
CAPACITOR VALUES ARE IN μF, 50V ;
(T) CAPACITOR VALUES ARE TANTALUM ;
ELECTOROLYTIC CAPACITORS ARE IN μF, 16V ;
INDUCTOR VALUES ARE IN H ;
COIL VALUES ARE IN H ;
UNLESS OTHERWISE NOTED.

Mother Unit

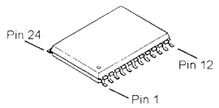
Parts Layout



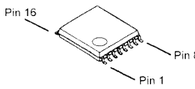
Component Side



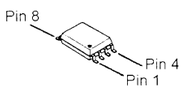
Chip Side



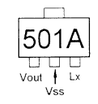
TK10930V
(Q2026)



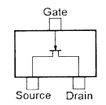
MB15A01PFV
(Q1014)



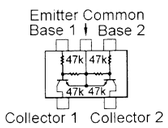
NJM2904V
(Q1033)



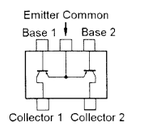
RH5RH501A (501A)
(Q1012)



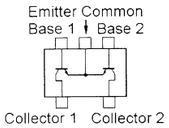
2SK880GR (XG)
(Q1019)
2SK2170 (JA)
(Q1039)



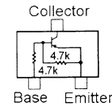
FMG2 (G2)
(Q1038)



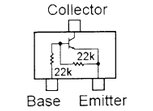
FMS1 (S1)
(Q1030)



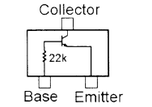
FMW1 (W1)
(Q1009, 1023)



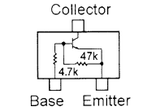
DTA143EU (23)
(Q1003, 1004, 1011, 1018, 1043)



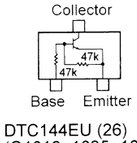
DTC124EU (25)
(Q1020)



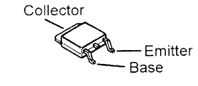
DTC124TU (05)
(Q1037, 1042)



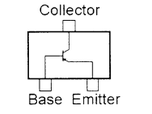
DTC143ZUA (123)
(Q1002, 1041)



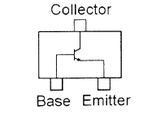
DTC144EU (26)
(Q1013, 1035, 1044)



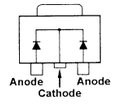
2SB1132 (BA)
(Q1005, 1008, 1024)



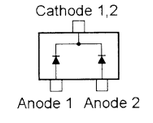
2SA812 (M7)
(Q1016)



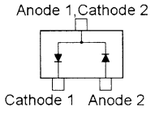
2SC3356 (R24)
(Q2027)
2SC4116GR (LG)
(Q1001, 1017, 1021, 1025, 1028)
2SC4215 (QY)
(Q1031)
2SC5226 (R22)
(Q1006, 1007, 1010, 1015, 1022, 1034, 1036)



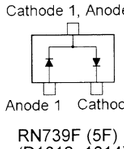
SB40W03T
(D1003)



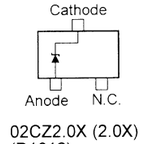
1SS321 (F9)
(D1022)
DAN202K (N)
(D1011)



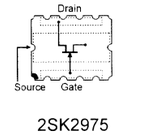
1SS302 (C3)
(D1008, 1013, 1015, 1021)



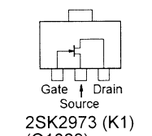
RN739F (5F)
(D1012, 1014)



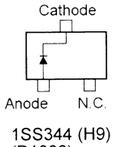
02CZ2.0X (2.0X)
(D1012)



2SK2975
(Q1032)



2SK2973 (K1)
(Q1029)



1SS344 (H9)
(D1006)
MA721 (M1M)
(D1010)

Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
			*** MOTHER UNIT ***					
	PCB with Components					CB0581001		
	Printed Circuit Board					FR002770C		1-
C 1001	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1002	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 1003	CHIP CAP.	0.022uF	25V	B	GRM39B223K25PT	K22144807		1-
C 1004	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1005	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 1006	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1007	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1008	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-
C 1009	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-
C 1010	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-
C 1011	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-
C 1012	CHIP CAP.	0.047uF	16V	B	GRM39B473K16PT	K22124804		1-
C 1013	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 1014	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1015	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1016	AL.ELECTRO.CAP.	47uF	25V		UVR1E470MDA6 47UF	K40149046		1-
C 1017	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-
C 1018	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1019	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1020	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1021	CHIP CAP.	33pF	50V	CH	GRM39CH330J50PT	K22174223		1-
C 1022	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-
C 1023	CHIP CAP.	3pF	50V	CJ	GRM39CJ030C50PT	K22174204		1-
C 1024	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1025	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1026	TANTALUM CHIP CAP.	4.7uF	10V		TEMSVA1A475M-8R	K78100022		1-
C 1027	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1029	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1030	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1031	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-
C 1032	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1033	AL.ELECTRO.CAP.	47uF	25V		UVR1E470MDA6 47UF	K40149046		1-
C 1034	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-
C 1035	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1037	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1038	CHIP CAP.	5pF	50V	CH	GRM39CH050C50PT	K22174206		1-
C 1040	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-
C 1041	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 1042	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 1043	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1044	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1045	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1046	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 1047	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1048	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1049	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 1050	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1051	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1052	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1053	CHIP CAP.	1uF	10V	B	GRM40B105K10PT	K22100802		1-
C 1054	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1055	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1057	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 1058	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1059	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1061	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1062	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-

Mother Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
C 1063	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1064	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1065	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1067	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1068	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1069	CHIP CAP.	68pF	50V	CH	GRM39CH680J50PT	K22174231		1-
C 1070	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1071	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1072	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1074	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1075	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1077	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1078	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1079	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-
C 1080	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1081	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1082	TANTALUM CHIP CAP.	22uF	6.3V		TEMSVA0J226M-8R	K78080047		1-
C 1083	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-
C 1084	CHIP CAP.	0.0047uF	50V	B	GRM39B472M50PT	K22174817		1-
C 1085	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-
C 1086	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1087	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1090	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1091	TANTALUM CHIP CAP.	4.7uF	10V		TEMSVA1A475M-8R	K78100022		1-
C 1092	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1093	CHIP CAP.	39pF	50V	CH	GRM39CH390J50PT	K22174225		1-
C 1094	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1095	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1096	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1097	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-
C 1098	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1099	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 1100	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 1101	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1102	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1103	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1104	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1105	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 1106	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1107	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1108	CHIP CAP.	470pF	50V	B	GRM39B471M50PT	K22174805		1-
C 1110	CHIP CAP.	2pF	50V	CK	GRM39CK020C50PT	K22174203		1-
C 1111	CHIP CAP.	220pF	50V	B	GRM39B221M50PT	K22174801		1-
C 1112	CHIP CAP.	2pF	50V	CK	GRM39CK020C50PT	K22174203		1-
C 1114	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1115	CHIP CAP.	82pF	50V	CH	GRM39CH820J50PT	K22174233		1-
C 1116	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1117	CHIP CAP.	470pF	50V	B	GRM39B471M50PT	K22174805		1-
C 1119	CHIP CAP.	0.5pF	50V	CK	GRM39CK0R5C50PT	K22174201		1-
C 1120	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1121	CHIP CAP.	2pF	50V	CK	GRM39CK020C50PT	K22174203		1-
C 1122	CHIP CAP.	220pF	50V	B	GRM39B221M50PT	K22174801		1-
C 1123	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1124	CHIP CAP.	2pF	50V	CK	GRM39CK020C50PT	K22174203		1-
C 1125	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1126	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1127	CHIP CAP.	470pF	50V	B	GRM39B471M50PT	K22174805		1-
C 1128	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1129	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1130	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
C 1131	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 1132	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1133	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 1134	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-
C 1135	CHIP CAP.	4pF	50V	CH	GRM39CH040C50PT	K22174205		1-
C 1136	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-
C 1138	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1139	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1140	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1141	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1142	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 1143	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-
C 1144	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1145	CHIP CAP.	4pF	50V	CH	GRM39CH040C50PT	K22174205		1-
C 1146	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 1147	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 1148	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-
C 1149	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1150	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 1152	CHIP CAP.	4pF	50V	CH	GRM39CH040C50PT	K22174205		1-
C 1153	CHIP CAP.	15pF	50V	CH	GRM39CH150J50PT	K22174215		1-
C 1154	CHIP CAP.	220pF	50V	B	GRM39B221M50PT	K22174801		1-
C 1155	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1156	CHIP CAP.	27pF	50V	CH	GRM39CH270J50PT	K22174221		1-
C 1157	CHIP CAP.	470pF	50V	B	GRM39B471M50PT	K22174805		1-
C 1158	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1159	TANTALUM CHIP CAP.	0.47uF	25V		TESVA1E474M1-8R	K78140009		1-
C 1160	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1161	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1162	CHIP CAP.	0.018uF	25V	B	GRM39B183K25PT	K22144806		1-
C 1163	CHIP CAP.	820pF	50V	B	GRM39B821M50PT	K22174808		1-
C 1164	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1165	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1166	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1167	CHIP CAP.	0.0033uF	50V	B	GRM39B332M50PT	K22174815		1-
C 1168	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1169	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1170	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 1171	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1172	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1174	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1175	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1176	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 1177	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1178	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1179	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 1180	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1181	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1183	TANTALUM CHIP CAP.	22uF	4V		TEMSVA0G226M-8R	K78060023		1-
C 1195	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 1196	TANTALUM CHIP CAP.	22uF	6.3V		TEMSVA0J226M-8R	K78080047		1-
C 1197	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1198	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-
C 1201	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 1202	TANTALUM CHIP CAP.	22uF	4V		TEMSVA0G226M-8R	K78060023		1-
CD1001	CERAMIC DISC				CDBM450C24T	H7901060		1-
CF1001	CERAMIC FILTER				CFWM450D	H3900522		1-
D 1001	DIODE				HVU350-TR	G2070380		1-
D 1002	DIODE				1SS355 TE-17	G2070470		1-
D 1003	DIODE				SB40W03T-TL	G2070370		1-

Mother Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
D 1005	DIODE				HSU277TRF	G2070118		1-
D 1006	DIODE				1SS344 TE85R	G2070422		1-
D 1007	DIODE				02CZ2.0X TE85R	G2070124		1-
D 1008	DIODE				1SS302 TE85R	G2070088		1-
D 1009	DIODE				1SS355 TE-17	G2070470		1-
D 1010	DIODE				MA721(TX)	G2070298		1-
D 1011	DIODE				DAN202K T146	G2070182		1-
D 1012	DIODE				RN739F T106	G2070626		1-
D 1014	DIODE				RN739F T106	G2070626		1-
D 1015	DIODE				1SS302 TE85R	G2070088		1-
D 1016	DIODE				HVU350-TR	G2070380		1-
D 1017	DIODE				HVU350-TR	G2070380		1-
D 1018	DIODE				HVU350-TR	G2070380		1-
D 1019	DIODE				RLS135 TE-11	G2070128		1-
D 1020	DIODE				RLS135 TE-11	G2070128		1-
D 1021	DIODE				1SS302 TE85R	G2070088		1-
D 1022	DIODE				1SS321 TE85R	G2070076		1-
D 1023	DIODE				HVU350-TR	G2070380		1-
D 1024	DIODE				MA111-(TX)	G2070338		1-
D 1027	DIODE				RD5.1UMB2-T1	G2070558		1-
D 1028	DIODE				MA111-(TX)	G2070338		1-
D 1029	DIODE				MA111-(TX)	G2070338		1-
J 1001	CONNECTOR				LGP3131-0111	P0091072		1-
J 1002	CONNECTOR				CPB8518-0151	P1090795		1-
J 1003	SPRING CONNECTOR					RA0120500		1-
J 1004	SPRING CONNECTOR					RA0120500		1-
J 1005	SPRING CONNECTOR					RA0120500		1-
L 1001	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-
L 1002	COIL				E2 0.25-1.9-6.5T-L	L0022401		1-
L 1003	CHIP COIL	0.047uH			LQN21A47NJ04	L1690617		1-
L 1004	M.RFC	220uH			FLC32T-221J	L1690231		1-
L 1005	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-
L 1006	M.RFC	120uH			FLC32T-121J	L1690228		1-
L 1007	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-
L 1008	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-
L 1010	M.RFC	0.1uH			HK1608 R10J-T	L1690528		1-
L 1012	M.RFC	0.47uH			LK1608 R47K-T	L1690414		1-
L 1014	M.RFC	0.068uH			HK1608 68NJ-T	L1690526		1-
L 1015	CHIP COIL	0.1uH			LQN21AR10J04	L1690620		1-
L 1016	CHIP COIL	0.047uH			LQN21A47NJ04	L1690617		1-
L 1018	M.RFC	0.47uH			LK1608 R47K-T	L1690414		1-
L 1021	CHIP COIL	0.1uH			LQN21AR10J04	L1690620		1-
L 1022	COIL				E2 0.35-1.6-8T-L	L0022458		1-
L 1023	COIL				E2 0.35-1.6-7T-L	L0022390		1-
L 1024	CHIP COIL	0.033uH			LQN21A33NJ04	L1690615		1-
L 1025	CHIP COIL	0.068uH			LQN21A68NJ04	L1690605		1-
L 1026	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-
L 1027	COIL				E2 0.3-1.7-7T-R	L0022372		1-
L 1028	M.RFC	6.8uH			LK1608 6R8K-T	L1690632		1-
L 1029	COIL				E2 0.3-1.7-7T-R	L0022372		1-
L 1030	COIL				E2 0.3-1.7-7T-R	L0022372		1-
L 1031	M.RFC	0.068uH			HK1608 68NJ-T	L1690526		1-
L 1032	COIL				E2 0.3-1.7-7T-R	L0022372		1-
L 1033	CHIP COIL	0.027uH			LQN21A27NJ04	L1690614		1-
L 1034	CHIP COIL	0.056uH			LQN21A56NJ04	L1690618		1-
L 1035	M.RFC	0.056uH			HK1608 56NJ-T	L1690525		1-
L 1036	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-
L 1037	M.RFC	33uH			LK1608 330M-T	L1690690		1-
L 1038	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-
L 1039	M.RFC	0.033uH			HK1608 33NJ-T	L1690522		1-

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
L 1040	M.RFC	0.033uH			HK1608 33NJ-T	L1690522		1-
L 1041	CHIP COIL	0.033uH			LQN21A33NJ04	L1690615		1-
L 1042	M.RFC	4.7uH			LK1608 4R7K-T	L1690688		1-
Q 1001	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 1002	TRANSISTOR				DTC143ZUA T106	G3070188		1-
Q 1003	TRANSISTOR				DTA143EU T106	G3070110		1-
Q 1004	TRANSISTOR				DTA143EU T106	G3070110		1-
Q 1005	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 1006	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1007	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1008	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 1009	TRANSISTOR				FMW1 T98	G3070009		1-
Q 1010	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1011	TRANSISTOR				DTA143EU T106	G3070110		1-
Q 1012	IC				RH5RH501A-T1	G1091603		1-
Q 1013	TRANSISTOR				DTC144EU T106	G3070041		1-
Q 1014	IC				MB15A01PFV1-G-BND-EF	G1092545		1-
Q 1015	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1016	TRANSISTOR				2SA812-T2B M7B	G3108127G		1-
Q 1017	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 1018	TRANSISTOR				DTA143EU T106	G3070110		1-
Q 1019	FET				2SK880GR TE85R	G3808807G		1-
Q 1020	TRANSISTOR				DTC124EU T106	G3070045		1-
Q 1021	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 1022	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1023	TRANSISTOR				FMW1 T98	G3070009		1-
Q 1024	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 1025	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 1026	IC				TK10930VT1	G1091606		1-
Q 1027	TRANSISTOR				2SC3356-T2B	G3333567		1-
Q 1028	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 1029	FET				2SK2973-T11	G3829738		1-
Q 1030	TRANSISTOR				FMS1 T148	G3070008		1-
Q 1031	TRANSISTOR				2SC4215Y TE85R	G3342157Y		1-
Q 1032	FET				2SK2975-T11	G3829757		1-
Q 1033	IC				NJM2904V-TE1	G1091677		1-
Q 1034	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1035	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 1036	TRANSISTOR				2SC5226-4/5-TL	G3352268Z		1-
Q 1037	TRANSISTOR				DTC124TU T106	G3070065		1-
Q 1038	TRANSISTOR				FMG2 T148	G3070015		1-
Q 1039	FET				2SK2170-TL	G3821708		1-
Q 1041	TRANSISTOR				DTC143ZUA T106	G3070188		1-
Q 1042	TRANSISTOR				DTC124TU T106	G3070065		1-
Q 1043	TRANSISTOR				DTA143EU T106	G3070110		1-
Q 1044	TRANSISTOR				DTC143ZUA T106	G3070188		1-
Q 1045	FET				2SK880GR TE85R	G3808807G		1-
R 1001	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1002	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1003	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-
R 1004	CHIP RES.	5.6k	1/16W	5%	RMC1/16 562JATP	J24185562		1-
R 1005	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1006	CHIP RES.	330	1/16W	5%	RMC1/16 331JATP	J24185331		1-
R 1007	CHIP RES.	22	1/10W	5%	RMC1/10T 220J	J24205220		1-
R 1008	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1009	CHIP RES.	2.2k	1/10W	5%	RMC1/10T 222J	J24205222		1-
R 1010	CHIP RES.	1.8k	1/16W	5%	RMC1/16 182JATP	J24185182		1-
R 1011	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 1012	CHIP RES.	680	1/16W	5%	RMC1/16 681JATP	J24185681		1-
R 1014	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-

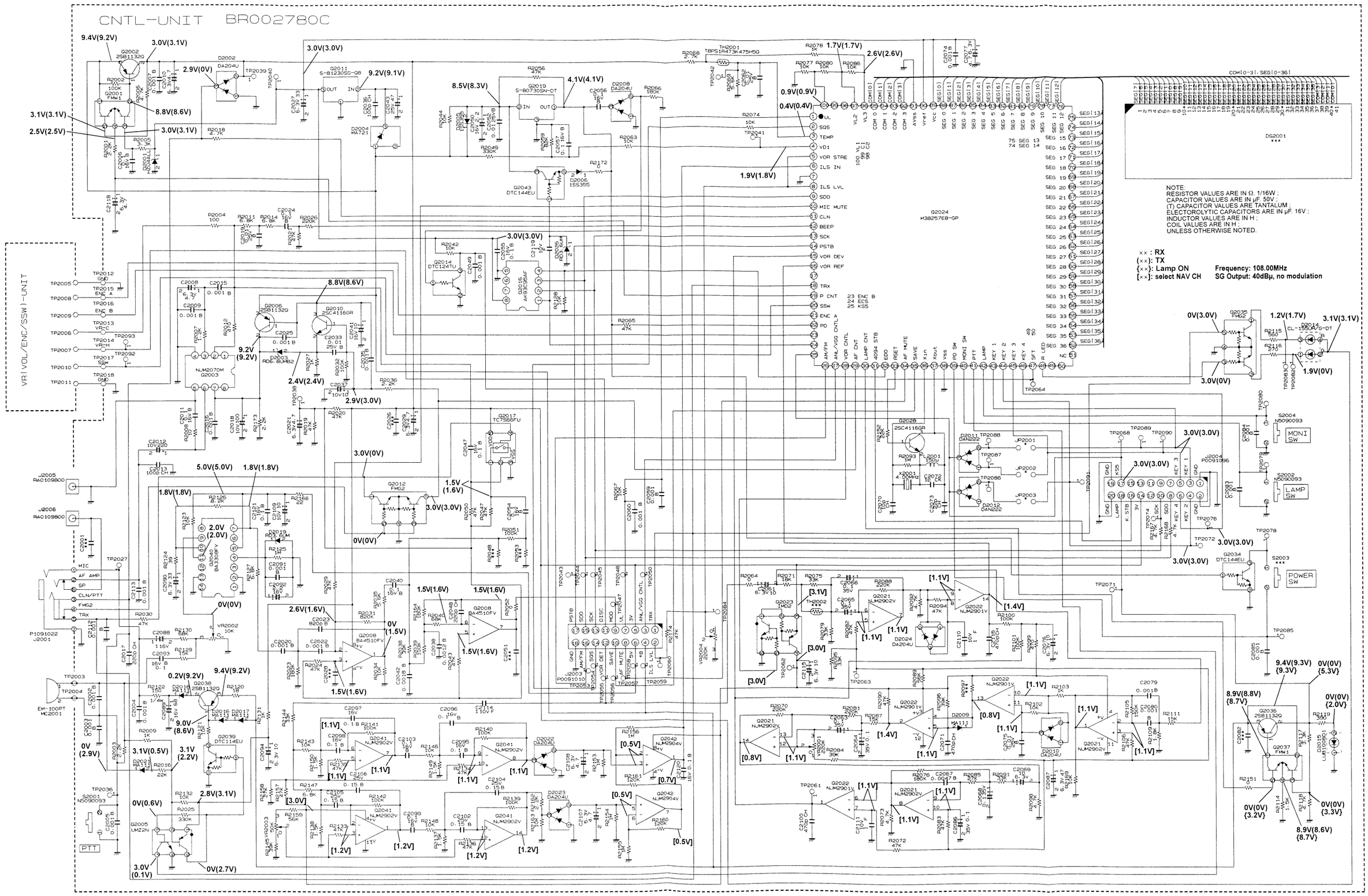
Mother Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
R 1015	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1016	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1017	CHIP RES.	82	1/16W	5%	RMC1/16 820JATP	J24185820		1-
R 1018	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1019	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1020	CHIP RES.	10	1/16W	5%	RMC1/16 100JATP	J24185100		1-
R 1021	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-
R 1022	CHIP RES.	18	1/16W	5%	RMC1/16 180JATP	J24185180		1-
R 1023	CHIP RES.	18	1/16W	5%	RMC1/16 180JATP	J24185180		1-
R 1024	CHIP RES.	18	1/16W	5%	RMC1/16 180JATP	J24185180		1-
R 1025	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-
R 1026	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1027	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1028	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1029	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-
R 1030	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-
R 1031	CHIP RES.	82	1/16W	5%	RMC1/16 820JATP	J24185820		1-
R 1032	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-
R 1033	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1034	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1035	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1036	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 1037	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1038	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1039	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1040	CHIP RES.	82	1/16W	5%	RMC1/16 820JATP	J24185820		1-
R 1041	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 1042	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-
R 1043	CHIP RES.	82	1/16W	5%	RMC1/16 820JATP	J24185820		1-
R 1044	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1045	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1047	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1048	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1052	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1054	CHIP RES.	56k	1/16W	5%	RMC1/16 563JATP	J24185563		1-
R 1057	CHIP RES.	3.3k	1/16W	5%	RMC1/16 332JATP	J24185332		1-
R 1059	CHIP RES.	47	1/16W	5%	RMC1/16 470JATP	J24185470		1-
R 1060	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-
R 1061	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 1062	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1063	CHIP RES.	82	1/16W	5%	RMC1/16 820JATP	J24185820		1-
R 1064	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-
R 1065	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1066	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1069	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 1070	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-
R 1071	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-
R 1072	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1073	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1074	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-
R 1075	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1076	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1077	CHIP RES.	3.9k	1/16W	5%	RMC1/16 392JATP	J24185392		1-
R 1078	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 1079	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1080	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1081	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1082	CHIP RES.	12k	1/16W	5%	RMC1/16 123JATP	J24185123		1-
R 1083	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1084	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
R 1085	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1086	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1087	CHIP RES.	560	1/16W	5%	RMC1/16 561JATP	J24185561		1-
R 1088	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 1089	CHIP RES.	3.3k	1/16W	5%	RMC1/16 332JATP	J24185332		1-
R 1090	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1091	CHIP RES.	68	1/16W	5%	RMC1/16 680JATP	J24185680		1-
R 1092	CHIP RES.	330	1/16W	5%	RMC1/16 331JATP	J24185331		1-
R 1093	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1094	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-
R 1095	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 1097	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 1098	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 1099	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1100	CHIP RES.	82k	1/16W	5%	RMC1/16 823JATP	J24185823		1-
R 1101	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1102	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1103	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 1104	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 1105	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 1106	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1108	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-
R 1109	CHIP RES.	820k	1/16W	5%	RMC1/16 824JATP	J24185824		1-
R 1110	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1111	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1112	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 1113	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1114	CHIP RES.	82k	1/16W	5%	RMC1/16 823JATP	J24185823		1-
R 1115	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 1116	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-
R 1119	CHIP RES.	150k	1/16W	5%	RMC1/16 154JATP	J24185154		1-
R 1120	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 1121	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 1122	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 1123	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-
R 1125	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1126	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1127	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1128	CHIP RES.	2.7k	1/16W	5%	RMC1/16 272JATP	J24185272		1-
R 1130	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 1131	CHIP RES.	33	1/16W	5%	RMC1/16 330JATP	J24185330		1-
R 1133	CHIP RES.	180k	1/16W	5%	RMC1/16 184JATP	J24185184		1-
R 1134	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1135	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 1136	CHIP RES.	47	1/10W	5%	RMC1/10T 470J	J24205470		1-
R 1137	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1138	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 1140	CHIP RES.	5.6k	1/16W	5%	RMC1/16 562JATP	J24185562		1-
R 1141	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 1142	CHIP RES.	8.2k	1/16W	5%	RMC1/16 822JATP	J24185822		1-
R 1143	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 1146	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
TC1001	TRIMMER CAP.	20pF			CTZ2S-20C-W2-P	K91000216		1-
TH1001	THERMISTOR				TBPS1R103K440H5Q	G9090067		1-
TH1002	THERMISTOR				TBPS1R103K440H5Q	G9090067		1-
TH1003	THERMISTOR				TBPS1R103K440H5Q	G9090067		1-
VR1001	POT.	10k			POZ3AN-1-103N-T00	J51820103		1-
VR1002	POT.	10k			POZ3AN-1-103N-T00	J51820103		1-
X 1001	XTAL CA-303HS	17.475MHz			17.475MHZ	H0103205		1-
XF1001	XTAL FILTER				35M15A1	H1102328		1-

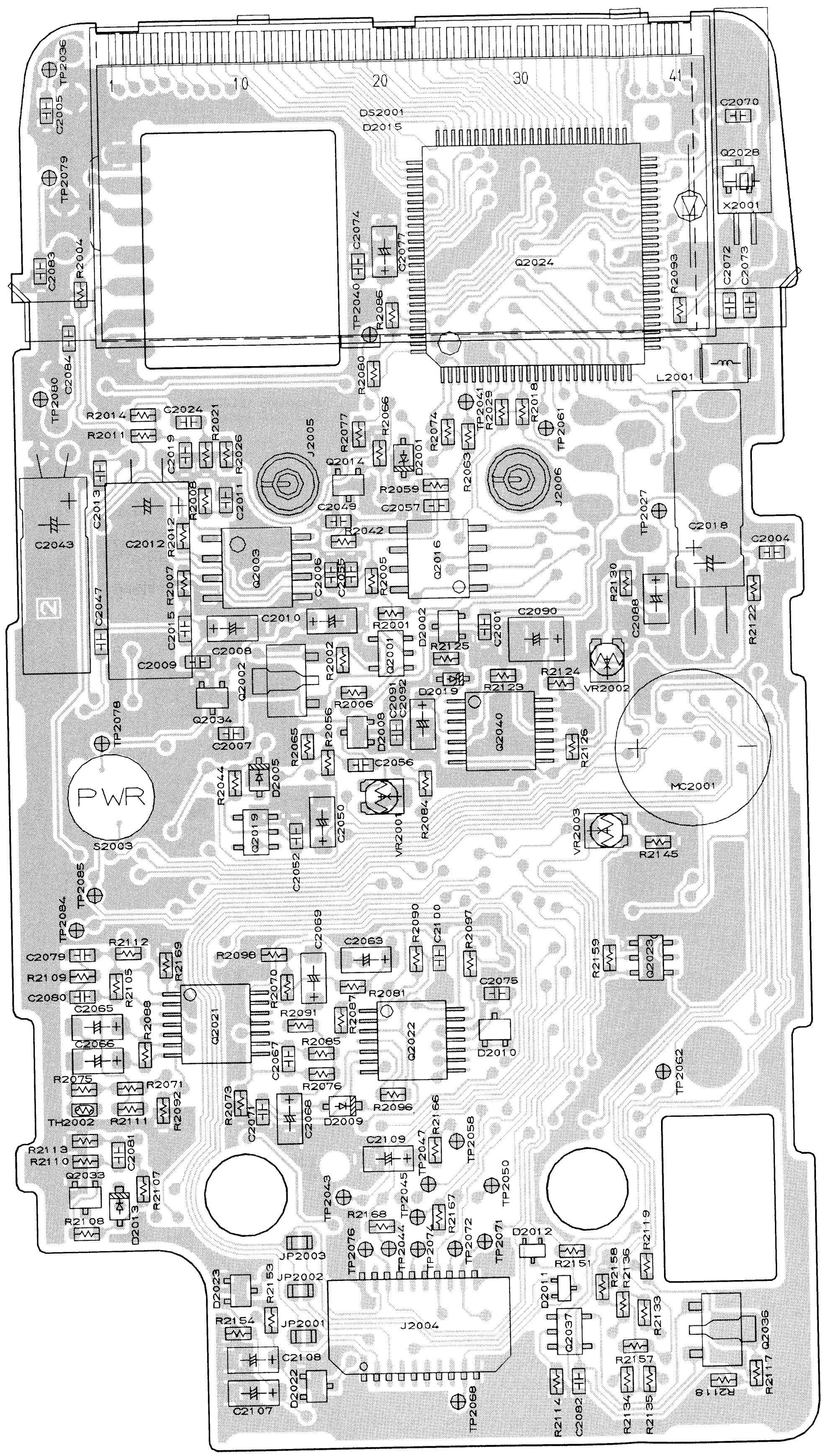
Mother Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
	CONTACT PLATE				(SMA)	R0152360A		1-
	PACKING PAD				(POW)	R3152430		1-
	SHIELD CASE					RA0109900		1-
	SHIELD CASE VCO					RA0031500		1-

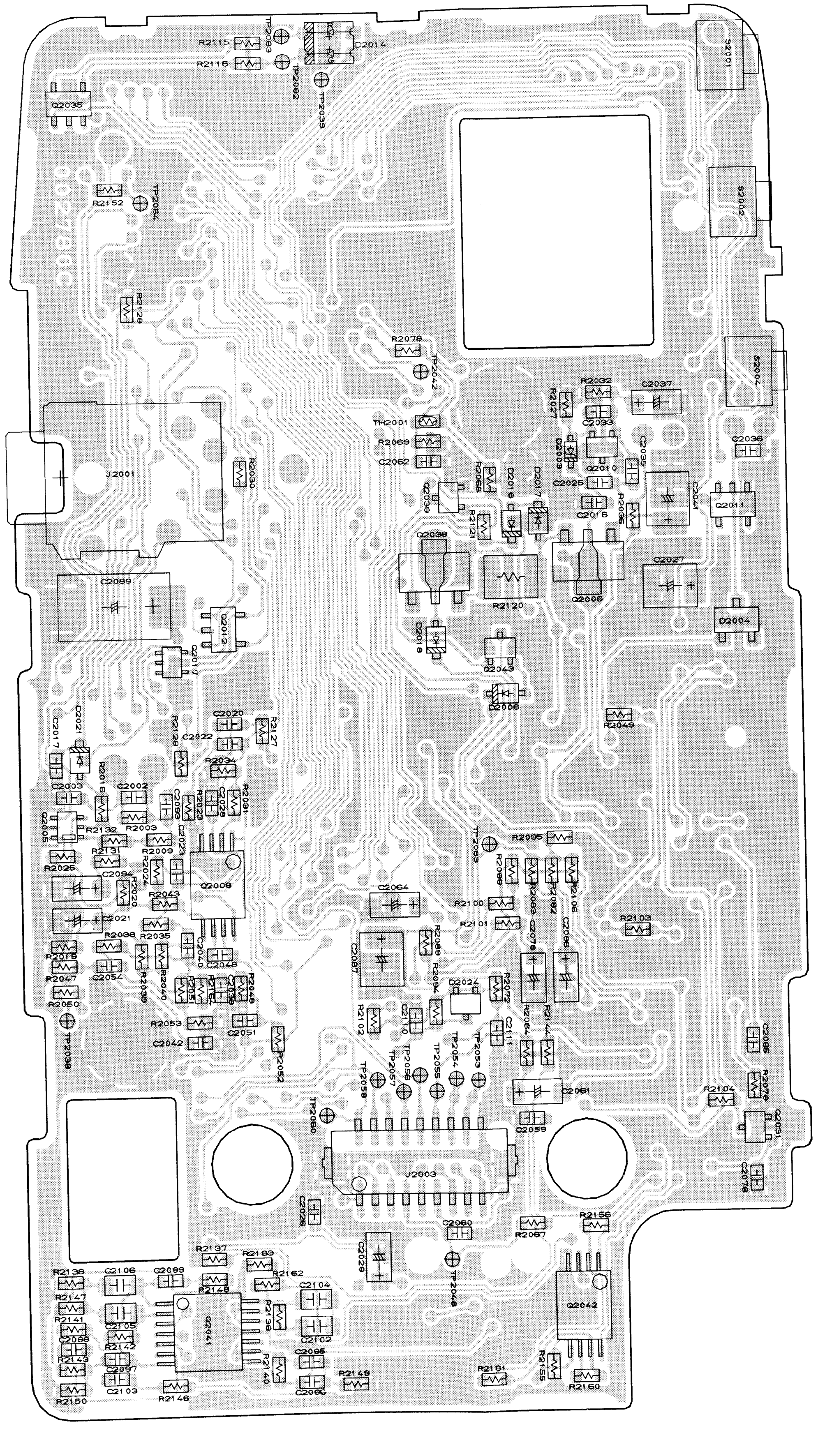

CNTL-UNIT BR002780C
VR(VOL/ENC/SW)-UNIT
NOTE:
RESISTOR VALUES ARE IN Ω. 1/16W ;
CAPACITOR VALUES ARE IN μF. 50V ;
(T) CAPACITOR VALUES ARE TANTALUM ;
ELECTOROLYTIC CAPACITORS ARE IN μF. 16V ;
INDUCTOR VALUES ARE IN H ;
COIL VALUES ARE IN H ;
UNLESS OTHERWISE NOTED.
×× : RX
(××): TX
{××}: Lamp ON
[××]: select NAV CH
Frequency: 108.00MHz
SG Output: 40dBμ, no modulation
Q2024 M38257E8-GP
DS2001
MONI SW
LAMP SW
POWER SW
PTT

CNTL Unit

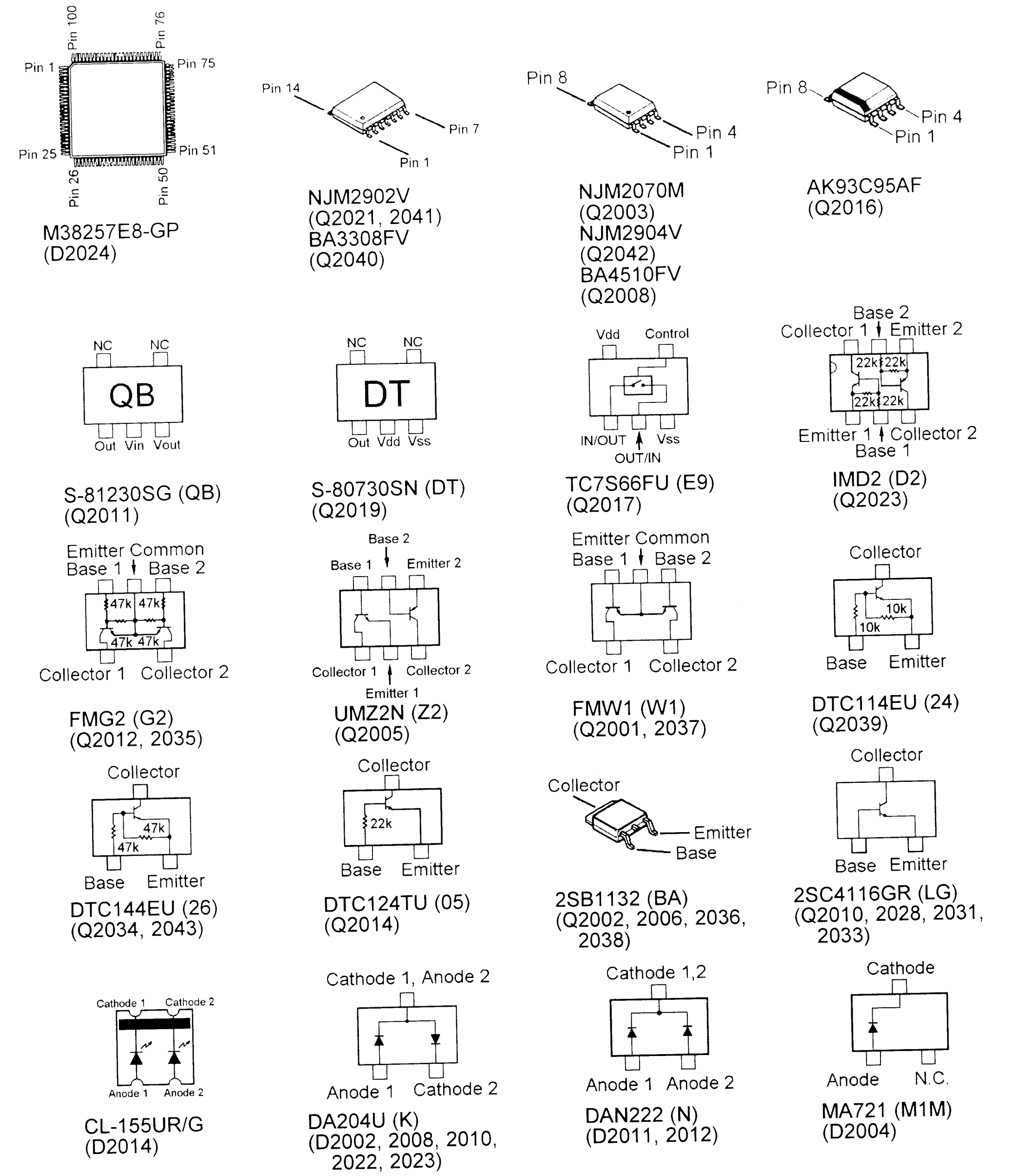
Parts Layout

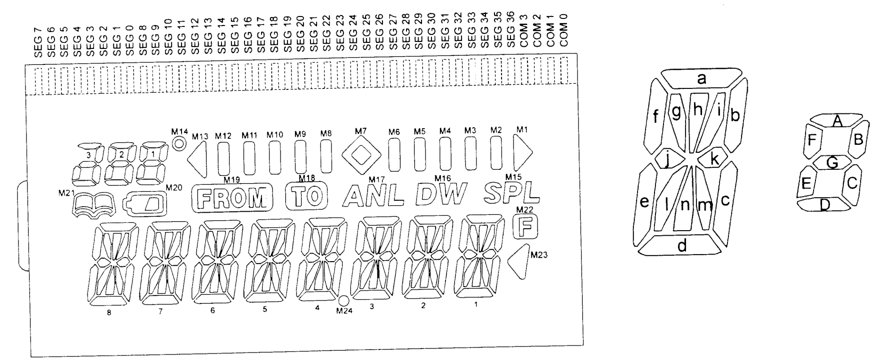


Component Side



Chip Side





	SEG 0	SEG 1	SEG 2	SEG 3	SEG 4	SEG 5	SEG 6	SEG 7	SEG 8	SEG 9	SEG 10	SEG 11	SEG 12	SEG 13	SEG 14	SEG 15	SEG 16	SEG 17	SEG 18	SEG 19	SEG 20
COM 0	8e	8d	8m	8c	7e	7d	7m	7c	3A	2F	2A	1A	6e	6d	6m	6c	5e	5d	5m	5c	4e
COM 1	8j	8l	8h	8k	7j	7l	7h	7k	3B	2E	2B	1F	6j	6l	6h	6k	5j	5l	5h	5k	4j
COM 2	8f	8g	8i	8b	7f	7g	7i	7b	3G	2D	2G	1G	6f	6g	6i	6b	5f	5g	5i	5b	4f
COM 3	M21	3D	8a	1D	M20	1C	7a	1B	3E	3C	2C	1E	M14	M13	6a	M19	M12	M11	5a	M10	M18

	SEG 21	SEG 22	SEG 23	SEG 24	SEG 25	SEG 26	SEG 27	SEG 28	SEG 29	SEG 30	SEG 31	SEG 32	SEG 33	SEG 34	SEG 35	SEG 36	COM 0	COM 1	COM 2	COM 3
COM 0	4d	4m	4c	3e	3d	3m	3c	2e	2d	2m	2c	1e	1d	1m	1c	M24	COM 0	–	–	–
COM 1	4l	4h	4k	3j	3l	3h	3k	2j	2l	2h	2k	1j	1l	1h	1k	M23	–	COM 1	–	–
COM 2	4g	4i	4b	3f	3g	3i	3b	2f	2g	2i	2b	1f	1g	1i	1b	M22	–	–	COM 2	–
COM 3	M9	4a	M8	M7	M17	3a	M6	M5	M16	2a	M4	M3	M15	1a	M2	M1	–	–	–	COM 3

Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
				*** CNTL UNIT ***				
	PCB with Components					CB0582001		
	Printed Circuit Board					FR002780C		1-
C 2002	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2003	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2004	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2005	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2006	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2007	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2008	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2009	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2010	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2011	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2012	AL.ELECTRO.CAP.	220uF	10V		SMG1AVB221M 220UF	K40109027		1-
C 2013	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 2015	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2016	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2017	CHIP CAP.	220pF	50V	CH	GRM39CH221J50PT	K22174243		1-
C 2018	AL.ELECTRO.CAP.	100uF	10V		UVR1A101MDA6 100UF	K40109028		1-
C 2019	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 2020	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2021	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2022	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2023	CHIP CAP.	820pF	50V	B	GRM39B821M50PT	K22174808		1-
C 2024	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2025	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2027	TANTALUM CHIP CAP.	33uF	6.3V		TEMSVB20J336M-8R	K78080030		1-
C 2029	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2033	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 2035	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2036	CHIP CAP.	100pF	50V	CH	GRM39CH101J50PT	K22174235		1-
C 2037	TANTALUM CHIP CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-
C 2038	CHIP CAP.	0.0012uF	50V	B	GRM39B122M50PT	K22174810		1-
C 2040	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2041	TANTALUM CHIP CAP.	10uF	16V		TEMSVB21C106M-8R	K78120025		1-
C 2042	CHIP CAP.	0.0018uF	50V	B	GRM39B182M50PT	K22174812		1-
C 2043	AL.ELECTRO.CAP.	47uF	25V		UVR1E470MDA6 47UF	K40149046		1-
C 2047	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2048	CHIP CAP.	220pF	50V	CH	GRM39CH221J50PT	K22174243		1-
C 2049	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2050	TANTALUM CHIP CAP.	2.2uF	16V		TEMSVA1C225M-8R	K78120015		1-
C 2052	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 2054	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2055	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2056	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2057	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2059	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2060	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2061	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 2062	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 2063	TANTALUM CHIP CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-
C 2064	TANTALUM CHIP CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-
C 2065	TANTALUM CHIP CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-
C 2066	TANTALUM CHIP CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-
C 2067	CHIP CAP.	0.0047uF	50V	B	GRM39B472M50PT	K22174817		1-
C 2068	TANTALUM CHIP CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-
C 2069	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 2070	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-
C 2071	CHIP CAP.	470pF	50V	CH	GRM39CH471J50PT	K22174249		1-
C 2072	CHIP CAP.	1pF	50V	CK	GRM39CK010C50PT	K22174202		1-

CNTL Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
C 2073	CHIP CAP.	22pF	50V	CH	GRM39CH220J50PT	K22174219		1-
C 2074	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2075	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-
C 2076	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 2077	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2079	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2080	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2083	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2084	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2085	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2086	TANTALUM CHIP CAP.	0.1uF	35V		TESVA1V104M1-8R	K78160025		1-
C 2087	TANTALUM CHIP CAP.	47uF	6.3V		TEMSVB20J476M-8R	K78080048		1-
C 2088	TANTALUM CHIP CAP.	1uF	16V		TESVA1C105M1-8R	K78120009		1-
C 2089	TANTALUM CHIP CAP.	68uF	16V		TEMSVD1C686M12R	K78120034		1-
C 2090	TANTALUM CHIP CAP.	33uF	6.3V		TEMSVB20J336M-8R	K78080030		1-
C 2091	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-
C 2092	TANTALUM CHIP CAP.	2.2uF	16V		TEMSVA1C225M-8R	K78120015		1-
C 2093	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2094	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 2095	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2096	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2097	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2098	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2099	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2100	CHIP CAP.	470pF	50V	CH	GRM39CH471J50PT	K22174249		1-
C 2102	CHIP CAP.	0.15uF	25V	B	GRM40B154K25PT	K22140823		1-
C 2103	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2104	CHIP CAP.	0.15uF	25V	B	GRM40B154K25PT	K22140823		1-
C 2105	CHIP CAP.	0.15uF	25V	B	GRM40B154K25PT	K22140823		1-
C 2106	CHIP CAP.	0.15uF	25V	B	GRM40B154K25PT	K22140823		1-
C 2107	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2108	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2109	TANTALUM CHIP CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-
C 2110	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-
C 2111	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-
C 2112	CERAMIC CAP.	0.001uF	50V	B	UP050B102K-A-B	K28179001		1-
C 2113	CERAMIC CAP.	0.001uF	50V	B	UP050B102K-A-B	K28179001		1-
C 2114	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-
C 2115	TANTALUM CHIP CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-
C 2116	CHIP CAP.	470pF	50V	CH	GRM39CH471J50PT	K22174249		1-
C 2118	TANTALUM CHIP CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-
C 2119	CHIP CAP.	1uF	10V	F	GRM39F105Z10PT	K22105001		1-
C 2120	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
C 2121	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-
D 2001	DIODE				HZU4ALL-TR	G2070428		1-
D 2002	DIODE				DA204U T106	G2070242		1-
D 2003	DIODE				RD6.8UMB2-T1B	G2070438		1-
D 2004	DIODE				MA721(TX)	G2070298		1-
D 2005	DIODE				1SS355 TE-17	G2070470		1-
D 2006	DIODE				1SS355 TE-17	G2070470		1-
D 2008	DIODE				DA204U T106	G2070242		1-
D 2009	DIODE				MA111-(TX)	G2070338		1-
D 2010	DIODE				DA204U T106	G2070242		1-
D 2011	DIODE				DAN222 TL	G2070174		1-
D 2012	DIODE				DAN222 TL	G2070174		1-
D 2014	LED				CL-155UR/G-D-T	G2070278		1-
D 2015	LED				LUB1006D1	G2090681		1-
D 2016	DIODE				MA111-(TX)	G2070338		1-
D 2017	DIODE				MA111-(TX)	G2070338		1-
D 2018	DIODE				MA111-(TX)	G2070338		1-

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
D 2019	DIODE				RD3.6UM-T1	G2070672		1-
D 2021	DIODE				MA111-(TX)	G2070338		1-
D 2022	DIODE				DA204U T106	G2070242		1-
D 2023	DIODE				DA204U T106	G2070242		1-
D 2024	DIODE				DA204U T106	G2070242		1-
D 2026	DIODE				RD3.6UM-T1	G2070672		1-
DS2001	LCD				HT-3256-TFZ1	G6090133		1-
J 2001	CONNECTOR				HSJ1594-010015	P1091022		1-
J 2003	CONNECTOR				CPB8618-0551	P0091010		1-
J 2004	CONNECTOR				AXN420C330P	P0091096		1-
J 2005	COIL SPRING					RA0109800		1-
J 2006	COIL SPRING					RA0109800		1-
L 2001	M.RFC	150uH			FLC32T-151J	L1690229		1-
MC2001	MIC. ELEMENT				EM-100PT	M3290029		1-
Q 2001	TRANSISTOR				FMW1 T98	G3070009		1-
Q 2002	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 2003	IC				NJM2070M(T2)	G1091500		1-
Q 2005	TRANSISTOR				UMZ2N TR	G3070117		1-
Q 2006	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 2008	IC				BA4510FV-E2	G1092872		1-
Q 2010	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 2011	IC				S-81230SG-QB-T1	G1091826		1-
Q 2012	TRANSISTOR				FMG2 T148	G3070015		1-
Q 2014	TRANSISTOR				DTC124TU T106	G3070065		1-
Q 2016	IC				AK93C95AF E-1	G1092838		1-
Q 2017	IC				TC7S66FU TE85R	G1092116		1-
Q 2019	IC				S-80730SN-DT-T1	G1091875		1-
Q 2021	IC				NJM2902V-TE1	G1091679		1-
Q 2022	IC				NJM2901V-TE1	G1092779		1-
Q 2023	TRANSISTOR				IMD2 T108	G3070026		1-
Q 2024	IC				M38257E8-GP(NO PROG.)	G1092073		1-
Q 2028	TRANSISTOR				2SC4116GR TE85R	G3341167G		1-
Q 2034	TRANSISTOR				DTC144EU T106	G3070041		1-
Q 2035	TRANSISTOR				FMG2 T148	G3070015		1-
Q 2036	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 2037	TRANSISTOR				FMW1 T98	G3070009		1-
Q 2038	TRANSISTOR				2SB1132 T100 Q	G3211327Q		1-
Q 2039	TRANSISTOR				DTC114EU T106	G3070084		1-
Q 2040	IC				BA3308FV-E2	G1092814		1-
Q 2041	IC				NJM2902V-TE1	G1091679		1-
Q 2042	IC				NJM2904V-TE1	G1091677		1-
Q 2043	TRANSISTOR				DTC144EU T106	G3070041		1-
R 2001	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 2002	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2003	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 2004	CHIP RES.	100	1/16W	5%	RMC1/16 101JATP	J24185101		1-
R 2005	CHIP RES.	3.3k	1/16W	5%	RMC1/16 332JATP	J24185332		1-
R 2006	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2007	CHIP RES.	1.2k	1/16W	5%	RMC1/16 122JATP	J24185122		1-
R 2008	CHIP RES.	10	1/16W	5%	RMC1/16 100JATP	J24185100		1-
R 2009	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 2011	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-
R 2012	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-
R 2014	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-
R 2016	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-
R 2018	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2019	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2020	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2021	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2023	CHIP RES.	180k	1/16W	5%	RMC1/16 184JATP	J24185184		1-

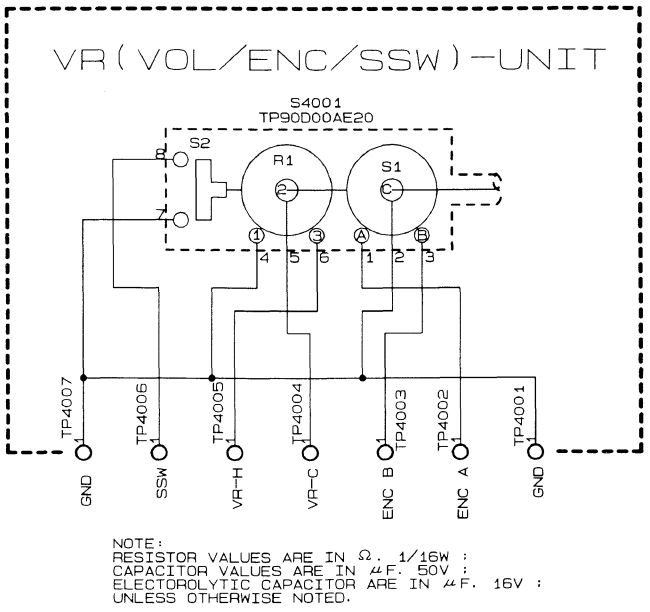
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
R 2024	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2025	CHIP RES.	330k	1/16W	5%	RMC1/16 334JATP	J24185334		1-
R 2026	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-
R 2027	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 2029	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2030	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2031	CHIP RES.	820k	1/16W	5%	RMC1/16 824JATP	J24185824		1-
R 2032	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2034	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2035	CHIP RES.	5.6k	1/16W	5%	RMC1/16 562JATP	J24185562		1-
R 2036	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 2038	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 2039	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2040	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-
R 2042	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2043	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2044	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2047	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2049	CHIP RES.	330k	1/16W	5%	RMC1/16 334JATP	J24185334		1-
R 2050	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2051	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2052	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 2056	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2059	CHIP RES.	82k	1/16W	5%	RMC1/16 823JATP	J24185823		1-
R 2063	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2064	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 2065	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2066	CHIP RES.	180k	1/16W	5%	RMC1/16 184JATP	J24185184		1-
R 2067	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2068	CHIP RES.	2.7k	1/16W	5%	RMC1/16 272JATP	J24185272		1-
R 2069	CHIP RES.	5.6k	1/16W	5%	RMC1/16 562JATP	J24185562		1-
R 2070	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-
R 2071	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-
R 2072	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2073	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2074	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2075	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 2076	CHIP RES.	180k	1/16W	5%	RMC1/16 184JATP	J24185184		1-
R 2077	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2078	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 2079	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 2080	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2081	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-
R 2082	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2083	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2084	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 2085	CHIP RES.	27k	1/16W	5%	RMC1/16 273JATP	J24185273		1-
R 2086	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2087	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-
R 2088	CHIP RES.	220k	1/16W	5%	RMC1/16 224JATP	J24185224		1-
R 2089	CHIP RES.	56k	1/16W	5%	RMC1/16 563JATP	J24185563		1-
R 2090	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2091	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 2092	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2093	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 2094	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2095	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 2096	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 2098	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2099	CHIP RES.	470	1/16W	5%	RMC1/16 471JATP	J24185471		1-

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
R 2100	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2101	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2102	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2103	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 2105	CHIP RES.	150k	1/16W	5%	RMC1/16 154JATP	J24185154		1-
R 2106	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2109	CHIP RES.	1.8k	1/16W	5%	RMC1/16 182JATP	J24185182		1-
R 2111	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-
R 2114	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 2115	CHIP RES.	560	1/16W	5%	RMC1/16 561JATP	J24185561		1-
R 2116	CHIP RES.	270	1/16W	5%	RMC1/16 271JATP	J24185271		1-
R 2117	CHIP RES.	3.3k	1/16W	5%	RMC1/16 332JATP	J24185332		1-
R 2118	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2119	CHIP RES.	390	1/16W	5%	RMC1/16 391JATP	J24185391		1-
R 2120	CHIP RES.	18	1/4W	5%	RMC1/4 180JATP	J24245180		1-
R 2121	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2122	CHIP RES.	150	1/4W	5%	RMC1/4 151JATP	J24245151		1-
R 2123	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2124	CHIP RES.	39	1/16W	5%	RMC1/16 390JATP	J24185390		1-
R 2125	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 2126	CHIP RES.	8.2k	1/16W	5%	RMC1/16 822JATP	J24185822		1-
R 2127	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-
R 2128	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2129	CHIP RES.	15k	1/16W	5%	RMC1/16 153JATP	J24185153		1-
R 2130	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-
R 2131	CHIP RES.	1k	1/16W	5%	RMC1/16 102JATP	J24185102		1-
R 2132	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2133	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2134	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2135	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2136	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2137	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 2138	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 2139	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2140	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2141	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2142	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-
R 2143	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2144	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-
R 2145	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-
R 2146	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2147	CHIP RES.	6.8k	1/16W	5%	RMC1/16 682JATP	J24185682		1-
R 2148	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2149	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 2150	CHIP RES.	1.5k	1/16W	5%	RMC1/16 152JATP	J24185152		1-
R 2151	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 2152	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-
R 2153	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 2154	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 2155	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 2156	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-
R 2157	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
R 2158	CHIP RES.	27k	1/16W	5%	RMC1/16 273JATP	J24185273		1-
R 2159	CHIP RES.	56k	1/16W	5%	RMC1/16 563JATP	J24185563		1-
R 2160	CHIP RES.	120k	1/16W	5%	RMC1/16 124JATP	J24185124		1-
R 2161	CHIP RES.	120k	1/16W	5%	RMC1/16 124JATP	J24185124		1-
R 2162	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-
R 2163	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2164	CHIP RES.	180k	1/16W	5%	RMC1/16 184JATP	J24185184		1-
R 2166	CHIP RES.	22	1/16W	5%	RMC1/16 220JATP	J24185220		1-

CNTL Unit

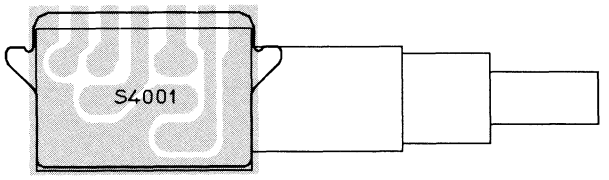
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
R 2167	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2168	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-
R 2169	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-
R 2172	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-
R 2173	CHIP RES.	2.2k	1/10W	5%	RMC1/10T 222J	J24205222		1-
R 2174	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-
S 2001	TACT SWITCH				JPM1990-0302	N5090093		1-
S 2002	TACT SWITCH				JPM1990-0302	N5090093		1-
S 2004	TACT SWITCH				JPM1990-0302	N5090093		1-
TH2001	THERMISTOR				TBPS1R473K475H5Q	G9090068		1-
VR2001	POT.	220k			EVM-2XSX50BE5	J51825224		1-
VR2002	POT.	10k			EVM-2WSX80B14	J51822103		1-
VR2003	POT.	50k			EVM-1XSX50B54	J51800503		1-
VR2004	POT.	220k			EVM-2XSX50BE5	J51825224		1-
X 2001	XTAL CSA-310	4MHz			4.00MHZ	H0103204		1-
	HOLDER RUBBER				(MIC)	R3152460A		1-
	STUD (2pcs)					RA0031900		1-
	LABEL					RA0137100		1-

Circuit Diagram

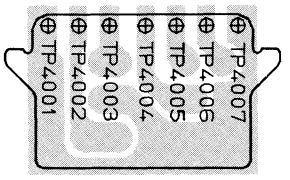


NOTE:
RESISTOR VALUES ARE IN Ω. 1/16W :
CAPACITOR VALUES ARE IN μF. 50V :
ELECTOROLYTIC CAPACITOR ARE IN μF. 16V :
UNLESS OTHERWISE NOTED.

Parts Layout



Component Side



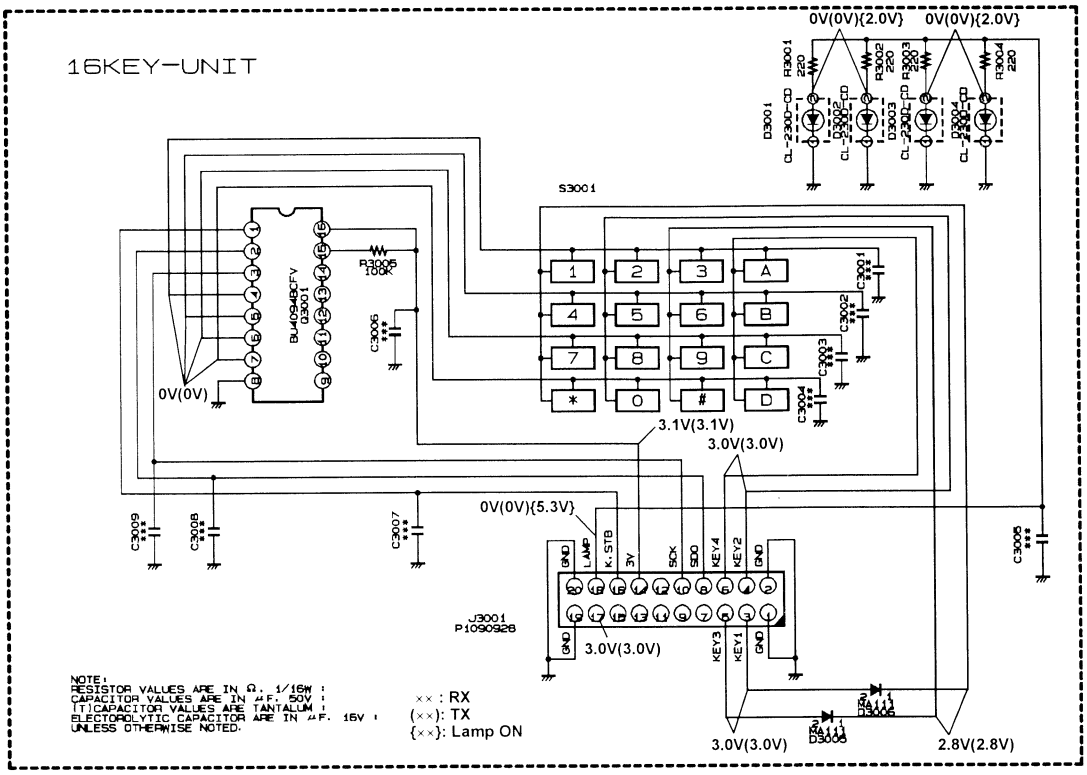
Solder Side

Parts List

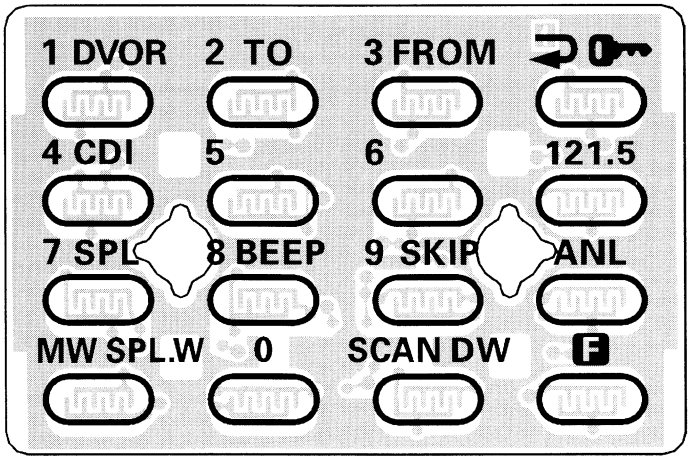
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
				*** VR UNIT ***				
	PCB with Components					CB0584001		
	Printed Circuit Board					FR002850A		1-
S 4001	ROTARY ENCODER				TP90D00AE20	Q9000717		1-

16-Key Unit

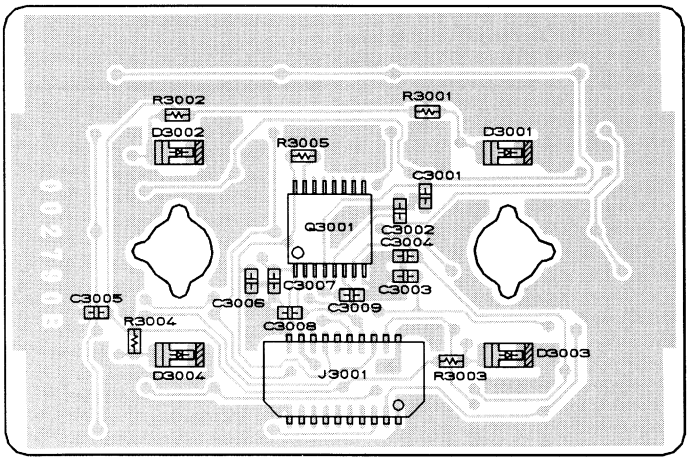
Circuit Diagram



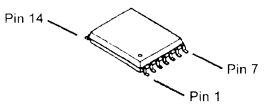
Parts Layout



Keypad Side



Chip Side



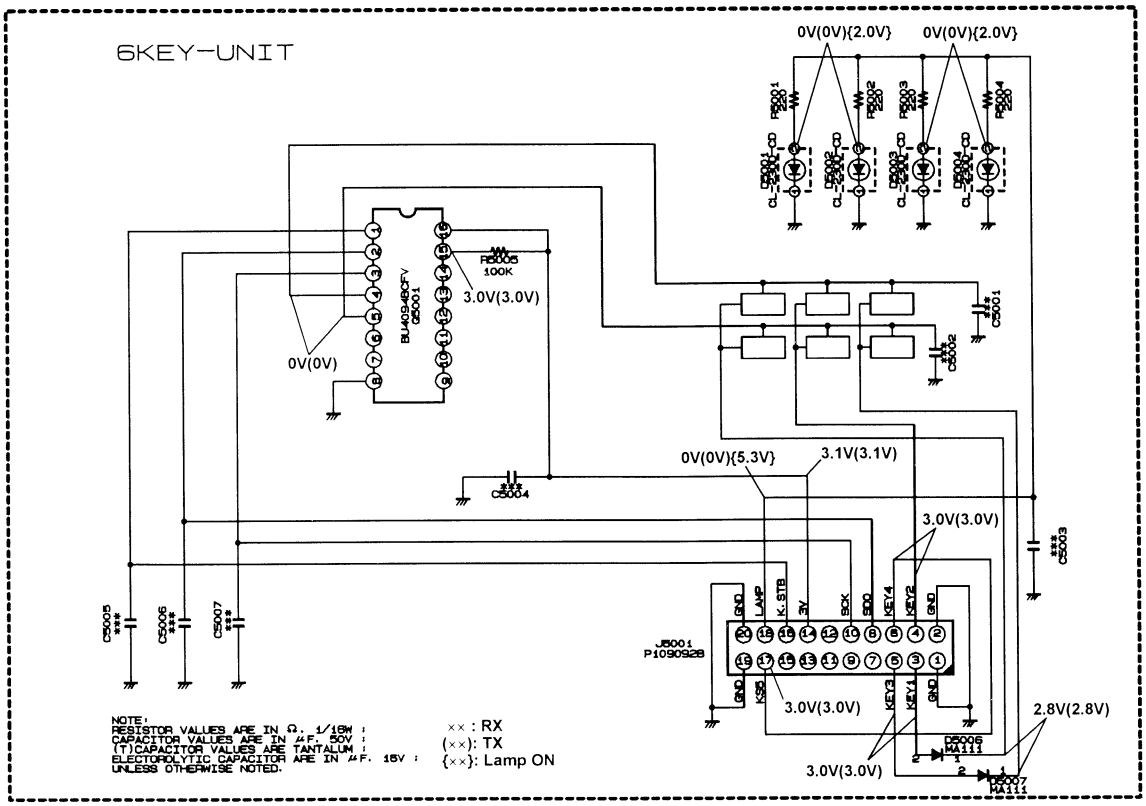
BU4094BCFV
(Q3001)

Parts List

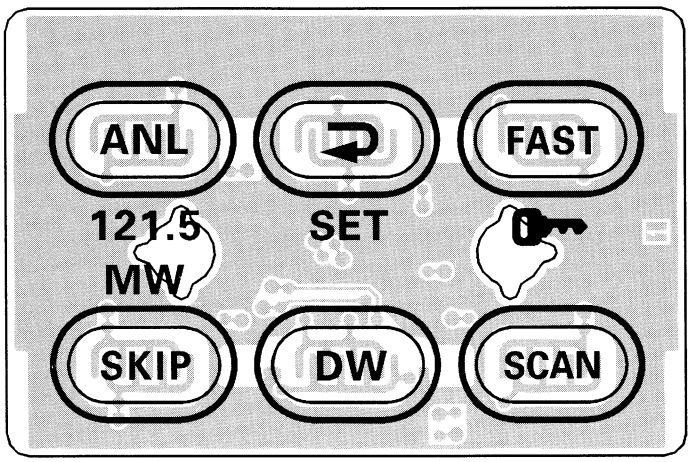
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
				*** 16-KEY UNIT ***				
	PCB with Components					CB0583001		
	Printed Circuit Board					FR002890B		1-
D 3001	LED				CL-230D-CD-TD	G2070674		1-
D 3002	LED				CL-230D-CD-TD	G2070674		1-
D 3003	LED				CL-230D-CD-TD	G2070674		1-
D 3004	LED				CL-230D-CD-TD	G2070674		1-
D 3005	DIODE				MA111-(TX)	G2070338		1-
D 3006	DIODE				MA111-(TX)	G2070338		1-
J 3001	CONNECTOR				AXN320C038P	P1090928		1-
Q 3001	IC				BU4094BCFV-E1	G1092128		1-
R 3001	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 3002	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 3003	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 3004	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 3005	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-

6-Key Unit

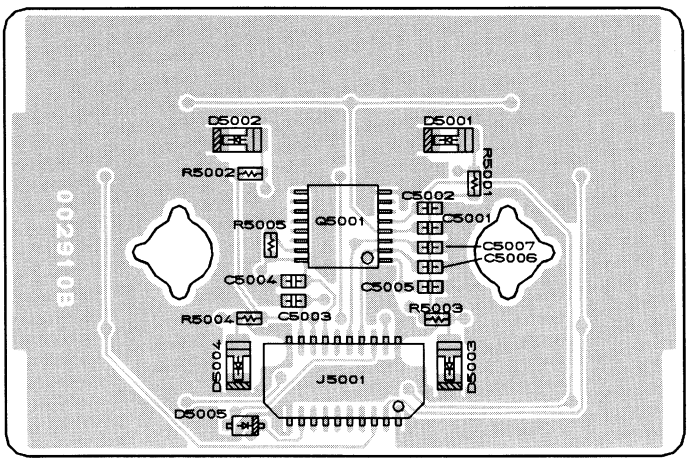
Circuit Diagram



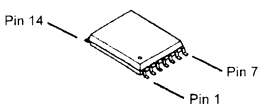
Parts Layout



Keypad Side



Chip Side



BU4094BCFV
(Q5001)

Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT.
				*** 6-KEY UNIT ***				
	PCB with Components					CB0638001		
	Printed Circuit Board					FR002920B		1-
D 5001	LED				CL-230D-CD-TD	G2070674		1-
D 5002	LED				CL-230D-CD-TD	G2070674		1-
D 5003	LED				CL-230D-CD-TD	G2070674		1-
D 5004	LED				CL-230D-CD-TD	G2070674		1-
D 5006	DIODE				MA111-(TX)	G2070338		1-
D 5007	DIODE				MA111-(TX)	G2070338		1-
J 5001	CONNECTOR				AXN320C038P	P1090928		1-
Q 5001	IC				BU4094BCFV-E1	G1092128		1-
R 5001	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 5002	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 5003	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 5004	CHIP RES.	220	1/16W	5%	RMC1/16 221JATP	J24185221		1-
R 5005	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-

YAESU

...leading the way.SM

9810U-0Y

Printed in Japan.