Vertex Standard

VX-900

VHF Band
Service Manual

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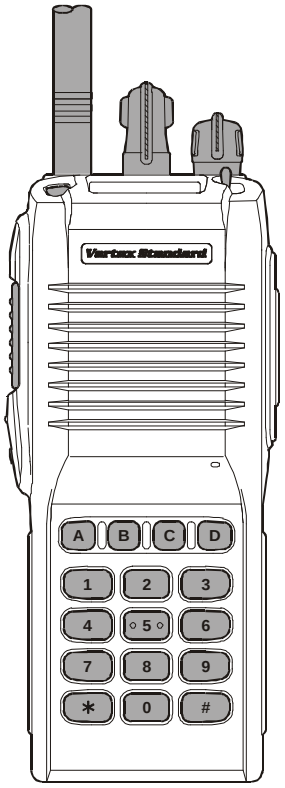

Introduction

This manual describes the circuit theory, programming procedures, and alignment procedures for the **VX-900** VHF Portable Transceiver.

Much of the operating flexibility of the **VX-900** is derived from its versatile "Soft Key" front panel keys. These keys may be configured for a number of operating functions, as described in this manual.

Following the discussion of transceiver operation, details regarding programming software, alignment, and maintenance will follow.

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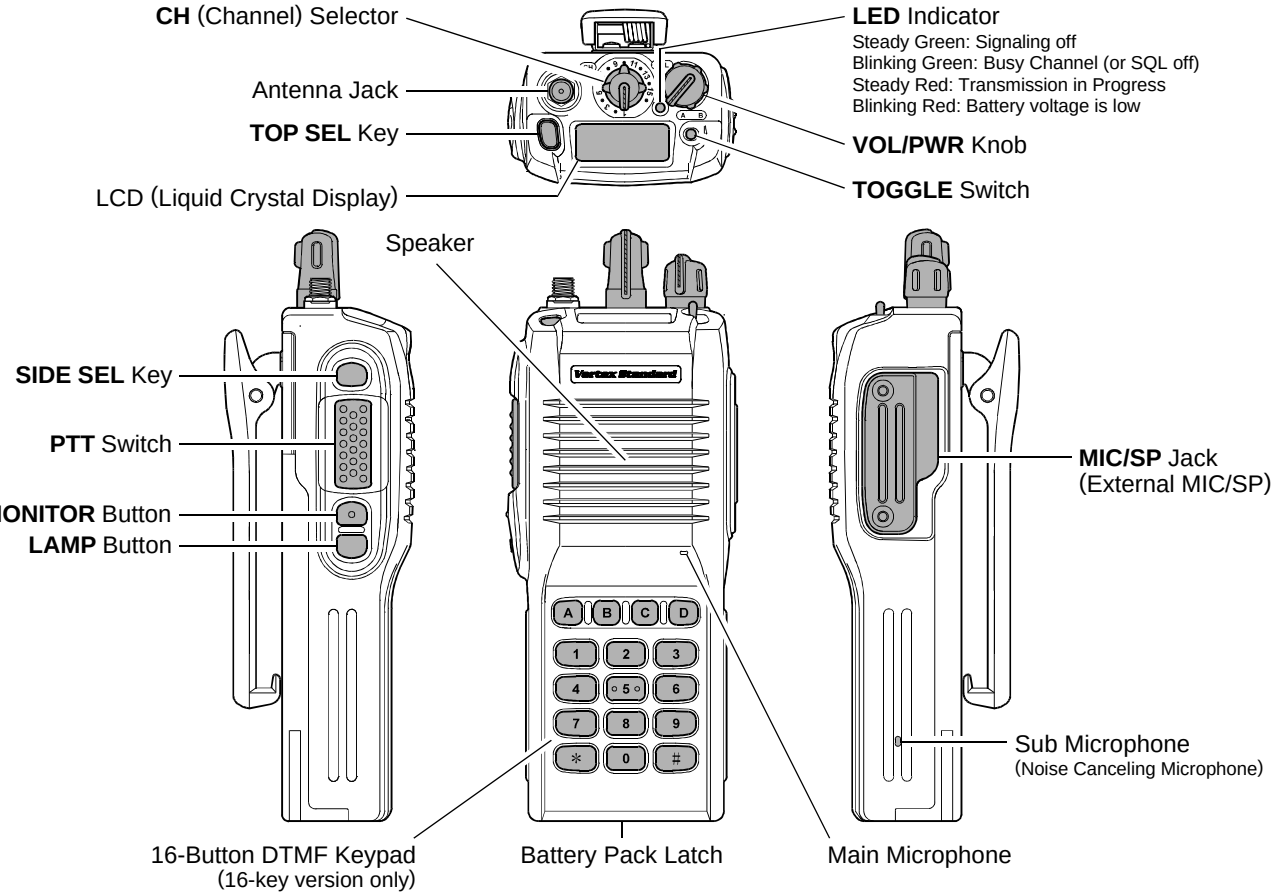
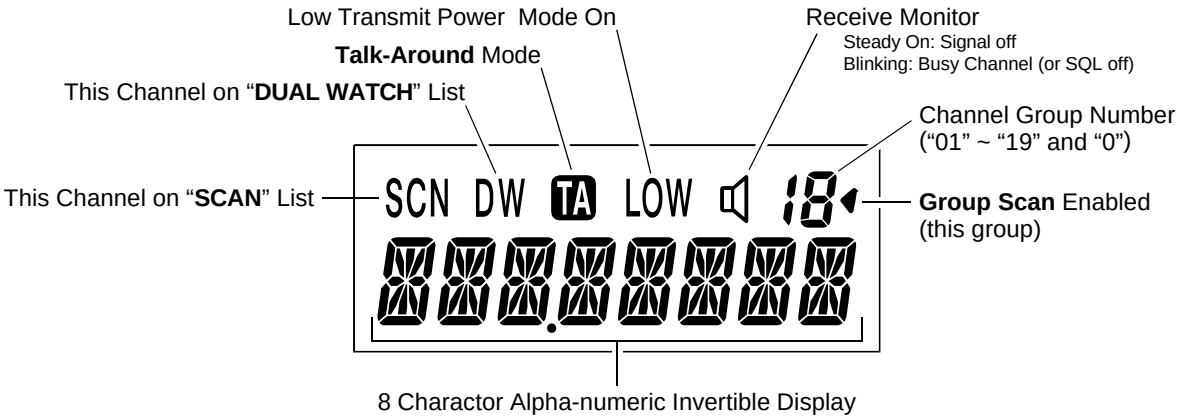
CONTROLS & CONNECTORS



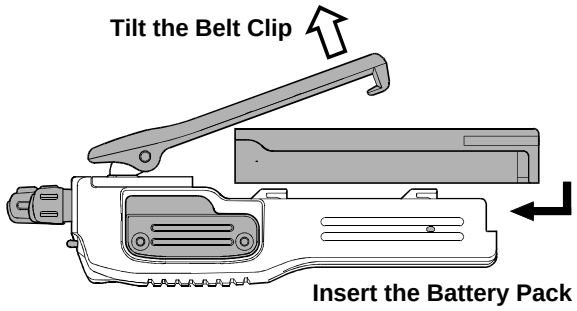
LCD ICONS & INDICATORS



BEFORE YOU BEGIN

Battery Pack Installation and Removal

- ❒ To install the battery, hold the transceiver with your left hand, so your palm is over the speaker and your thumb is on the top of the belt clip. Carefully mate the battery four insertion slots with their corresponding alignment tabs on the transceiver case, while tilting the Belt Clip outward. Proper alignment occurs with the battery pack offset about 1/2 inch from the top edge of the battery compartment.
- ❒ Guide the pack to the tabs with a slight inward pressure, then slide the battery pack upward, until it locks in place with a "Click."



- ❒ To remove the battery, turn the radio off and remove any protective cases. Slide the **Battery Pack Latch** on the bottom of the radio toward the front panel while sliding the battery down about 1/2 inch. Then lift the battery out from the radio while unfolding the Belt Clip.

Do not attempt to open any of the rechargeable Lithium-Ion pack, as they could explode if accidentally short-circuited.

Low Battery Indication

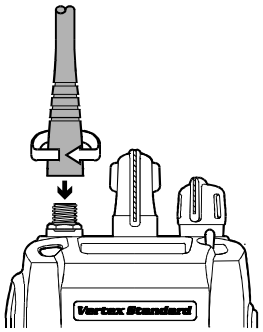
As the battery discharges during use, the voltage gradually becomes lower. When the battery voltage reaches 6.0 volts, it is time to substitute a freshly charged battery and recharge the depleted pack. The **LED** indicator on the top of the radio will blink red when the battery voltage is low (6 Volts or lower).

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

OPERATION

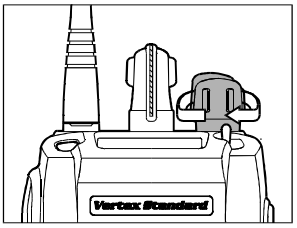
Preliminary Steps



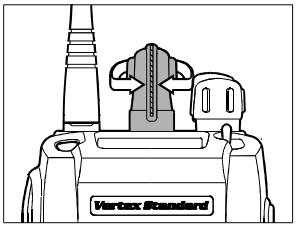
- ❒ Install a charged battery pack onto the transceiver, as described previously.
- ❒ Screw the supplied antenna onto the Antenna jack. Never attempt to operate this transceiver without an antenna connected.
- ❒ If you have a Speaker/Microphone, we recommend that it not be connected until you are familiar with the basic operation of the **VX-900**.

Operation Quick Start

- ❒ Turn the top panel's **VOL/PWR** knob clockwise to turn on the radio on.

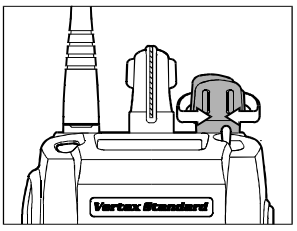


- ❒ Turn the top panel's **CH** selector knob to choose the desired operating channel. A channel name will appear on the LCD. If you want to select the operating channel from a different Memory Channel Group, pressing the **Soft** key (assigned to the Memory Group Up or Down function) to select the Memory Channel Group to be you want before selecting the operating channel. A group name will appear on the LCD whenever the **Soft** key is pressed.

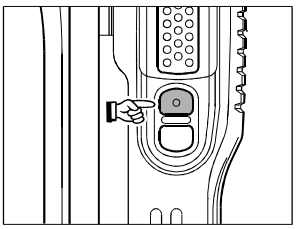


Note: Some models are programmed so that the operating channels are selected by the **Soft** key and the memory channel group is selected by the channe selector knob. For further details, contact your **VERTEX STANDARD** dealer.

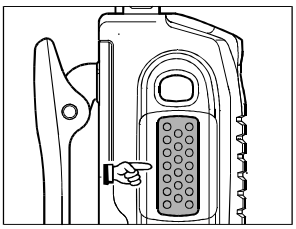
- ❒ Rotate the **VOL/PWR** knob to set the volume level. If no signal is present, press and hold in the **MONITOR** button (under the **PTT** switch) more than 2 seconds; background noise will now be heard, and you may use this to set the **VOL/PWR** knob for the desired audio level. Press and hold the **MONITOR** button more than 2 seconds (or press the **MONI-**



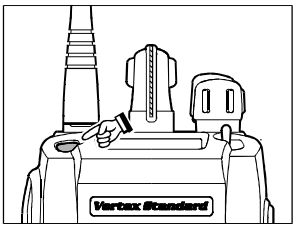
TOR button twice) to quiet the noise and resume normal (quiet) monitoring.

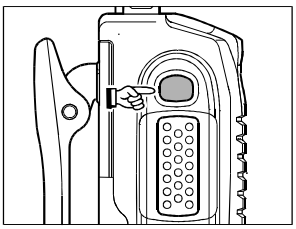


- To transmit, press and hold the **PTT** switch. Speak into the microphone area of the front panel grille (above the [**D**] key) in a normal voice level. To return to the Receive mode, release the **PTT** switch.

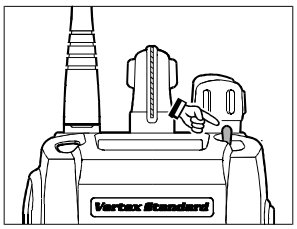


- Press the **Soft** key (if assigned to the Scan function) or switch the **TOGGLE** Switch to the assigned "Scan" position (when so programmed by your dealer) to start the scanner. The scanner rapidly steps through each of the dealer-programmed channels, looking for incoming calls.
- Press the **TOP SEL** key (on the top panel) or **SIDE SEL** key (the top button on the left side) to activate one of the preprogrammed functions which may have been enabled at the time of programming by the dealer. Similarly, when using the 16-key version, the [**A**], [**B**], [**C**], and [**D**] function keys activate one of these functions, if programmed by the dealer. See the next section for details regarding the available features.





- Switch the top panel's **TOGGLE** switch to the [**A**], [**B**] or [Center] position to activate one of the pre-programmed functions which may have been enabled at the time of programming by the dealer. When this switch is in the [**A** (left)], [**B** (right)] or [Center] position, the feature programmed (by your dealer) to that switch position will be activated. See the next section for details regarding the available features.



- Press the **DTMF** keys on the telephone keypad while pressing the **PTT** switch to send DTMF tones (16-key version only).
- If a Speaker/Microphone is available, remove the plastic cap and its two mounting screws from the right side of the transceiver, then align the connector of the Speaker/Microphone on the transceiver body; secure the connector pin using the screws supplied with the Speaker/Microphone. Hold the speaker grille up next to your ear while receiving. To transmit, press the **PTT** switch on the Speaker/Microphone, just as you would on the main transceiver's body, and speak into the microphone on a normal voice level.
  Note: Save the original plastic cap and its mounting screws. They should be reinstalled when not using the Speaker/Microphone.

ADVANCED OPERATION

Soft key and TOGGLE switch Functions

The **VX-900** includes the [**TOP SEL**], [**SIDE SEL**], [**MONITOR**], and [**LAMP**] keys, and the **TOGGLE** switch, while the 16-key version additionally provides [**A**], [**B**], [**C**], [**D**] function keys. The **Soft** key and **TOGGLE** switch functions can be customized, via programming by your **VERTEX STANDARD** dealer, to meet your communications/network requirements. Some features may require the purchase and installation of optional internal accessories. The possible **Soft** key and **TOGGLE** switch programming features are illustrated at the right, and their functions are explained on next page . For further details, contact your **VERTEX STANDARD** dealer. For future reference, check the box next to each function that has been assigned to the **Soft** key and **TOGGLE** switch on your particular radio, and keep it handy.

Functions	**TOGGLE** switch (Position)		
	A	**center**	**B**
None			
Channel Scan			
Dual Watch			
High/Low Power			
Talk Around			
TX Save Disable			
LCD Invert			
Encryption Disable※			
Lock			
Follow-Me Scan			
Group recall Shortcut	☐ Group 1 ☐ Group 2 ☐ Group 3	☐ Group 1 ☐ Group 2 ☐ Group 3	☐ Group 1 ☐ Group 2 ☐ Group 3

※: Requires **FVP-25** DTMF/Encryption Unit

Functions	**Soft** key							
	TOP SEL	**SIDE SEL**	**MONITOR**	**LAMP**	[**A**]	[**B**]	[**C**]	[**D**]
None								
Channel Scan								
Dual Watch								
High/Low Power								
Talk Around								
TX Save Disable								
LCD Invert								
Encryption Disable※								
Follow-Me DW								
Call/Reset※								
Speed Dial								
Emergency								
Group Up								
Group Down								
Channel Up								
Channel Down								
Monitor								
Lamp								

※: Requires **FVP-25** DTMF/Encryption Unit

ADVANCED OPERATION

Description of Operating Functions

Channel Scan

The Scanning feature is used to monitor multiple signals programmed into the transceiver. While scanning, the transceiver will check each channel for the presence of a signal, and will stop on a channel if a signal is present.

One key or switch may be assigned to the **Scan** function, as follows:

- ❒ One of the **Soft** keys may be assigned for **Scan** operation; or
- ❒ The **TOGGLE** switch may have one position assigned to the **Scan** function.

To activate scanning:

- ❍ Press the assigned **Soft** key, or set the **TOGGLE** switch to the assigned position.
- ❍ The scanner will search the channels, looking for active ones; it will pause each time it finds a channel on which someone is speaking.

To stop scanning:

- ❍ Press the assigned **Soft** key, or set the **TOGGLE** switch to a different position.
- ❍ Operation will revert to the channel to which the **CH** knob is set.

Note: Your dealer may have programmed your radio to stay on one of the following channels if you press the **PTT** switch during scanning pause:

- ☐ Current channel ("Talk Back")
- ☐ "Last Busy" channel
- ☐ "Priority" channel
- ☐ "Home" channel
- ☐ "Scan Start" channel

Dual Watch

The **Dual Watch** feature is similar to the **Scan** feature, except that only two channels are monitored:

- ❒ The current operating channel; and
- ❒ The "Priority" channel.

To activate Dual Watch:

- ❍ Press the assigned **Soft** key, or set the **TOGGLE** switch to the assigned position.
- ❍ The scanner will search the two channels; it will pause each time it finds a channel on which someone is speaking.

To stop Dual Watch:

- ❍ Press the assigned **Soft** key, or set the **TOGGLE** switch to a different position.
- ❍ Operation will revert to the channel to which the **CH** knob is set.

High/Low Power

Press the assigned **Soft** key or switch the **Toggle** switch to the assigned position to set the radio's transmitter to the "Low Power" mode, thus extending battery life. Press the assigned **Soft** key again or switch the **TOGGLE** switch to the other Position to return to "High Power" operation when in difficult terrain.

Talk Around

Press the assigned **Soft** key or switch the **TOGGLE** switch to the assigned position to activate the Talk Around feature when you are operating on duplex channel systems (separate receive and transmit frequencies, utilizing a "repeater" station). The Talk Around feature allows you to bypass the repeater station and talk directly to a station that is nearby. This feature has no effect when you are operating on "simplex" channels, where the receive and transmit frequencies are already the same.

Note that your dealer may have made provision for "Talk Around" channels by programming "repeater" and "Talk Around" frequencies on two adjacent channels. If so, the key may be used for one of the other Pre-Programmed Functions.

TX Save Disable

Press the assigned **Soft** key or switch the **TOGGLE** Switch to the assigned position to disable the Transmit Battery Saver, if you are operating in a location where high power is almost always needed.

The Transmit Battery Saver helps extend battery life by reducing transmit power when a very strong signal from an apparently nearby station is being received. Under some circumstances, though, your hand-held radio may not be heard well at the other end of the communication path, and high power may be necessary at all times.

LCD Invert

Press the assigned **Soft** key or switch the **TOGGLE** switch to the assigned position inverts the LCD display to backward-facing readout (the backward display is convenient for viewing when wearing the transceiver on your belt). Press the assigned **Soft** key again or switch the **TOGGLE** switch to the other Position-return the LCD display to frontward-facing readout.

Encryption Disable

Press the assigned **Soft** key or switch the **TOGGLE** switch to the assigned position to turn off the optional voice encryption unit temporarily, for use when an incorrect setting of (or failure in) the encryption system at one end of the communication path has made it im-

possible to talk to the other station.

Remember that disabling the encryption will mean that your transmissions are no longer secure. Return to the encrypted mode as soon as possible, and do not discuss any critical or confidential information while in the non-encrypted mode of operation.

Lock

Switch the **TOGGLE** switch to lock the top-panel keys; this can be enabled to prevent radio settings from being disturbed.

Follow-Me Scan

"Follow-Me" Scan feature checks a User-assigned Priority Channel regularly as you scan the other channels. Thus, if only Channels 1, 3, and 5 (of the 8 available channels) are designated for "Scanning," the user may nonetheless assign Channel 2 as the "User-assigned" Priority Channel via the "Follow-Me" feature.

To activate "Follow-Me" scanning, first select the channel you want to designate as the "User-Assigned Priority Channel" and Switch the **TOGGLE** switch to the assigned position. Then turn the **CH** selector knob to the "Scanning Start" channel which has been programmed by your dealer to activate the scanner. When the scanner stops on an "Active" channel, the User-assigned Priority Channel will automatically be checked every few seconds; if activity is found on the User-assigned Priority Channel, the radio will switch between it and the Dealer-Assigned Priority Channel, if any.

Follow-Me DW

To set up a "Dual Watch" frequency pair using the "Follow-Me" feature, select a channel using the **CH** selector knob. Now press the assigned **Soft** key; pressing the assigned **Soft** key locks the current channel as the User-assigned Priority Channel. Now rotate the **CH** selector knob to another channel (not the "Scanning Start" channel). Your radio will now switch back-and-forth between the currently-selected channel (shown on the **CH** selector knob) and the User-assigned Priority Channel.

During "Follow-Me" scanning (after you have pressed the key), you can set up the "Dual Watch" feature by rotating the **CH** selector knob to another channel. The radio will then scan back and forth between the original User-assigned Priority Channel and the newly-selected channel.

The Priority Channel you have assigned (before pressing the key) will be retained in memory until you change it.

Channel Group Selection

The **VX-900** is capable of separating its 512 memory channels into any of 20 Groups. There is no limit as to the number of channels which may be assigned to each Group. The Dealer will have made the Group assignment at the time of channel programming. At the same time, one of the **Soft** Keys will be assigned as the Channel Group Selection key.

To change Channel Groups, press the assigned **soft** key to step through the available Groups. Once the desired Group is reached, rotate the **CH** selector knob to select the desired channel within the selected Group.

You may wish to have the Scanner (described previously) pass through more than one Group during the scanning process (normally, scanning is performed within the current group only). To include the current Group in the scanning loop, ***press and hold in*** the assigned **Soft** key for one second.

To remove a Group from Group Scan, press and hold in the assigned **Soft** key again for one second.

Multi-Group Scanning is only possible if you are using the "User Scan" list.

The **VX-900** has two scanning "lists:" the "Dealer Scan" list and the "User Scan" list. The "Dealer Scan" list is a fixed group of stations which will be included when scanning is activated. The "User Scan" list is a different list, initially arranged by the Dealer, which may be modified by the User (if, for example, you want to delete one or more of these channels from the scanning list).

To edit the User Scan list, press and hold the soft key (assigned to the Group Up/Down function) to delete the current Memory Group from the Scanning. Alternatively, press and hold the "Scan" **Soft** key for one second to delete the Current Memory channel from the Scanning.

When you delete a Group or channel, "-SKIP-" will appear on the LCD for one second after press ing the **Soft** key. To restore a particular channel to your scanning list, press and hold in the **Soft** key again for one second; "-STOP-" will appear on the LCD for one second after pressing the **Soft** key.

Call/Reset

This feature, if enabled, allows the user to change the 3-digit Page Call code, used to call other similarly-equipped stations. Press the Dealer-assigned **soft** key, followed by the three digits representing the Page Call code of the station you wish to call. Three tones will

be heard after the last key is pressed (the new code will now be transmitted).

The receiver squelch of the other station will be opened, and you can begin communication.

Speed Dial

Your Dealer may have pre-programmed Auto-Dial telephone number memories into your radio.

To dial a number, press the Dealer-assigned **Soft** key for Speed Dialing, then press the numbered key corresponding to the Auto-Dial memory number list provided by your Dealer. The DTMF tones sent during the dialing sequence will be heard in the speaker.

Emergency

The **VX-900** includes an “Emergency” feature which may be useful if you have someone monitoring on the same frequency as your transceiver’s channel. For further details contact your nearest **VERTEX STANDARD** dealer.

ARTS (Auto Range Transpond System)

This system is designed to inform you when you and another ARTS-equipped station are within communication range.

During ARTS operation, your radio automatically transmits for about 1 second every 25 seconds (the interval is programmed by the Dealer) in an attempt to shake hands with the other station.

If you move out of range for more than two minutes, your radio senses that no signal has been received, a ringing beeper will sound, and "OUT OF SERVICE" will scroll on the LCD. If you subsequently move back into range, as soon as the other station transmits, your beeper will sound, and "IN SERVICE" will scroll on the LCD.

DTMF Paging System

This system allows paging and selective calling, using DTMF tone sequences.

When your radio is paged by a station bearing a tone sequence which matches yours, your radio's squelch will open and the alert ringer will sound (unless you have disabled it, as described previously).

The three-digit code of the station which paged you will be displayed on your radio's LCD.

ACCESSORIES & OPTIONS

FVP-25	Encryption/DTMF Pager Unit	**VH-130**	2-wire Earpiece, Palm Mic/PTT Combo
F2D-8	2-Tone Decode Unit	**VH-140**	DSP VOX Earpiece Microphone
F5D-14	5-Tone ENC/DEC Unit	**VH-150**	DSP VOX Bone-vibration Headset
FNB-V68LI	7.4 V 1800 mAh Lithium-Ion Battery	**VH-170**	Bone-vibration Headset
FNB-V69LI	7.4 V 2400 mAh Lithium-Ion Battery	**CE39**	Programing Software
FBA-27	Alkaline Battery Case (6 x AA)	**CT-70**	Radio Programing Cable (Requires VPL-1)
VAC-900	Rapid Desktop Charger	**CT-71**	PC Programing Cable
VAC-6900	6-Unit Multi Charger	**CT-72**	Radio to Radio Programming Cable
VCM-1	Mobile Mounting Bracket	**LCC-900**	Leather Case
VTP-50	VX-Trunk Unit	**ATV-6A**	VHF Antenna, 134 ~ 151 MHz (Stubby)
MH-50$_{A7A}$	Speaker/Microphone (Noise Canceling)	**ATV-6B**	VHF Antenna, 150 ~ 163 MHz (Stubby)
VH-110	Over the Head, Heavy Duty Headset	**ATV-6C**	VHF Antenna, 161 ~ 174 MHz (Stubby)
VH-120	3-wire Earpiece, Mic, Palm PTT Switch	**ATV-6XL**	VHF Antenna, 134 ~ 174 MHz (Untuned)

Availability of accessories may vary; some accessories are supplied standard per local requirements, others may be unavailable in some regions. Check with your **VERTEX STANDARD** *Dealer for changes to the this list.*

Set (Menu) Mode Functions

One or more of the radio's "Soft Keys" may be enabled for a function associated with the "Set" (Menu) mode. This feature, when activated, allows the user to customize certain performance aspects of the VX-900. Note that some of these items may also appear as available "Soft Keys," described below.

The operating procedure for the Menu mode is quite simple, requiring only a few easily- remembered actions on the user's part.

The VX-900 Soft Keys include the [**TOP SEL**], [**SIDE SEL**], [**MON**], and [**LAMP**] Keys, plus the [**A**], [**B**], [**C**], and [**D**] keys on the 16-key version. The Soft Key functions can be assigned either as a "Menu" function or an "operating" function at the time of programming.

Basic Menu Mode Operation

1. Press the appropriate Soft Key to activate a Menu function. The available keys include the [**TOP SEL**], [**SIDE SEL**], [**MON**], and [**LAMP**] Keys, plus the [**A**], [**B**], [**C**], and [**D**] keys on the 16-key version.
2. Rotate the top panel's **CH** selector knob to select the feature you wish to view and/or modify.
3. Press the [**TOP SEL**] and/or [**SIDE SEL**] keys to modify or adjust the current setting of this Menu item ("On" to "Off," etc.)
4. Rotate the **CH** selector to save the new setting.
5. Press the **PTT** switch to exit the Set (Menu) mode.

Available Soft Key Menu Functions

No.1 SQL (Squelch Level)

After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to find the point where the background noise is just silenced. This is the point of best receiver sensitivity consistent with quiet monitoring. The scale for the Squelch Level adjustment is 0 ~ 11 and 12 (RSSI SQL), The default value is 8.
When the Squelch Level set to "12," this activates the RSSI (Received Signal Strength Indicator) Squelch feature, which allows you to set the squelch so that only signals exceeding a prescribed RX signal input level will open the squelch. The RX signal input level is determined via the Alignment Program SVC39. See page 22 for details regarding the RSSI level setting.

No.2 LIST (Scanning List)

The VX-900 has two scanning "lists:" the "Dealer Scan" list and the "User Scan" list. The "Dealer scan" list is a fixed group of stations which will be included when scanning is activated. The "User Scan" list is a different list, initially arranged by the dealer, which may be changed by the User.
This Menu item allows you to select the desired scanning list: "Dealer Scan" or "User Scan".
After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to select the Scan List in which you wish to scan ("LIST DLR: Dealer List" or "LIST USR: User List"). Rotate the CH selector knob to save the new setting, then press the PTT switch to exit the Set (Menu) mode.

No.3 BEEP (Keypad Beeper On/Off)

After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to enable (ON) or disable (OFF) the keypad beep tones. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.4 BELL (CTCSS/DCS/Paging Alert Bell On/Off)

After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to enable (ON) or disable (OFF) the alert bell which sounds when your radio is called using either CTCSS or DCS calling tones. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.5 LGT (TX/BUSY LED On/Off)

After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to enable (ON) or disable (OFF) the LED which serves as the Busy Channel and Transmitter On indicator. Turning this LED off will extend battery life somewhat. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.6 LOCK (Keypad, PTT, or Knob Disabling)

In some situations, you may wish to disable the keypad's keys, the **CH** selector knob, and/or the **PTT** switch (so as to prevent transmission by unauthorized users of the radio). The LOCK Menu item determines which features will be disabled when the LOCK function is engaged.
After selecting this Menu, press the [**TOP SEL**] or

[**SIDE SEL**] key to select "P" (PTT Lock), "D" (Dial-Knob-Lock), "K" (Keypad Lock), or various combinations of these. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.7 GROUP (Group Select)

This Menu item allows you to change Channel Groups, in the event that a Soft Key has not been designated for this purpose. After selecting this Menu, press the [**TOP SEL**] or [**SIDE SEL**] key to select the Channel Group in which you wish to operate. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.8 SCAN (Scan Mode On/Off)

This Menu item allows you to start the scanner, in the event that a **Soft** Key has not been designated for this purpose.
After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to start ("SCAN ON") or stop ("SCAN OFF") the scanner. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.9 DW (Dual Watch On/Off)

This Menu item allows you to activate the Dual Watch feature, in the event that a **Soft** Key has not been designated for this purpose.
After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to enable ("DW ON") or disable ("DW OFF") the Dual Watch feature. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.10 TA (Talk Around)

This Menu Item allows you to activate the Talk Around feature, in the event that a **Soft** Key has not been designated for this purpose. Talk-Around allows direct simplex communications between portables and/or mobiles, utilizing the repeater's downlink frequency.
After selecting this Menu item, press the [**TOP SEL**] or [**SIDE SEL**] key to enable ("TA ON") or disable ("TA OFF") the Talk Around feature. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.11 ENCR (Encryption)

On channels where scrambling is used, an incorrect setting of (or failure in) the encryption system at one end of the communication path will make it impossible to talk to the other station. To change the current status of encryption on your radio, after selecting this item, press the [**TOP SEL**] or [**SIDE SEL**] key to enable (ENCR EN) or disable (ENCR DI) encryption. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.
Remember that disabling encryption will mean that your transmissions are no longer secure.

Return to the encrypted mode as soon as possible, and do not discuss any critical or confidential information while in the non- encrypted mode of operation.

No.12 AF VR

This Menu item determines the audio volume level when the top panel's **VOL** knob is set to its fully counterclockwise position (but not into the click stop). This permits the programming of a certain minimum audio output level, in applications where the radio should never go totally silent.

After selecting this item, press the [**TOP SEL**] or [**SIDE SEL**] key to select the desired (minimum) volume level. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

No.13 BP VR (Beep VR)

This Menu item determines the beep volume level.

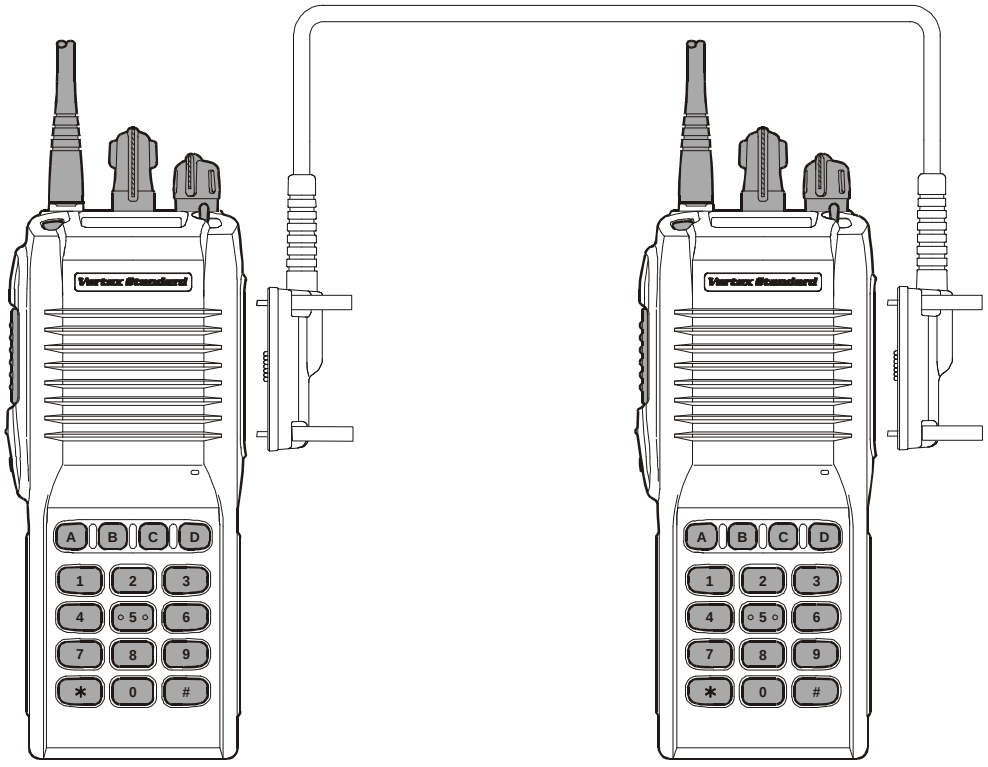
After selecting this item, press the [**TOP SEL**] or [**SIDE SEL**] key to select the desired level. Rotate the **CH** selector knob to save the new setting, then press the **PTT** switch to exit the Set (Menu) mode.

Cloning

The **VX-900** includes a convenient "Clone" feature, which allows the programming data from one transceiver to be transferred to another **VX-900**. Here is the procedure for Cloning one radio's data to another.

1. Turn both transceivers off.
2. Remove the plastic cap and its two mounting screws from the **MIC/SP** jack on the right side of the transceiver. Do this for both transceivers.
3. Connect the optional **CT-72** cloning cable between the **MIC/SP** jacks of the two transceivers.
4. Press and hold the **PTT** and **Monitor** (just below the **PTT**) switches while turning the transceiver on. Do this for both transceivers (the order of the switch-on does not matter). "**CLONE**" will appear on the displays of both transceivers when Clone mode is successfully activated in this step.
5. On the ***Destination*** transceiver, press the **Monitor** switch ("**LOADING**" will appear on the LCD).
6. Press the **PTT** switch on the Source transceiver; "**SENDING**" will appear on the Source transceiver, and the data transferred.
7. If there is a problem during the cloning process, "**ERR**" will be displayed. Check your cable connections and battery voltage, and try again.
8. If the data transfer is successful, the display return to "**CLONE**". Turn both transceivers off and disconnect the **CT-72**. You can then turn the transceivers back on, and begin normal operation.
9. Replace the plastic cap and its two mounting screws.

Optional Cloning Cable **CT-72**



Specifications

GENERAL

Number of Channels:	512 channels
Frequency Range:	134 - 160 MHz (A), 148 - 174 MHz (C)
Channel Spacing:	12.5 / 20 / 25 kHz
PLL Steps:	5 / 6.25 kHz
Power Supply Voltage:	7.4 VDC ± 20 %
Battery Life (5-5-90 duty):	w/ FNB-V68LI (1800 mAh): 13 hrs. (17 hrs. w/ saver) @5 W
	w/ FNB-V69LI (2400 mAh): 16 hrs. (21 hrs. w/ saver) @5 W
Temperature Range:	–22°F to +140°F (–30°C to +60°C)
Frequency Stability:	EIA: ±2.5 ppm
	ETS: ±1.5 kHz
Case Size:	2.3" (w) x 6.1" (H)x 1.3" (D) (59 x 155 x 34 mm) w/ FNB-V68LI
Weight (approx.):	0.93 lb. (420 g) w/Antenna, FNB-V68LI and Belt clip
Battery:	Lithium-Ion 7.4 V 1800 mAh / Lithium-Ion 7.4 V 2400 mAh (optional)

RECEIVER

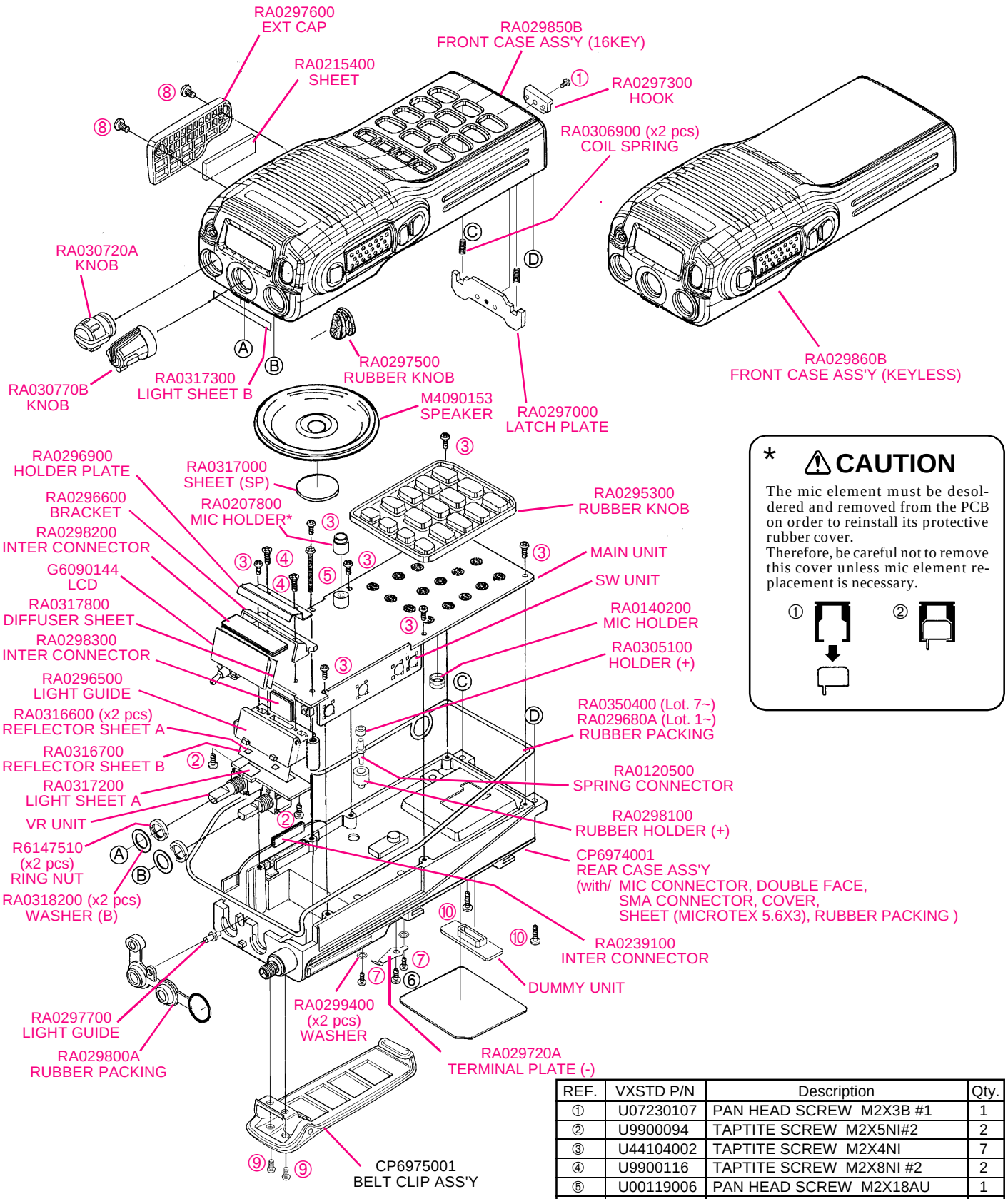
Circuit Type:	Double-conversion Super-heterodyne
Sensitivity:	EIA12-dB SINAD: 0.25 µV
	20 dB Quieting: 0.7 µV (emf)
	ETS (20 dB SINAD: 0.5 µV (emf)
Adjacent Channel Selectivity:	EIA: 75 dB (25 kHz) / 70 dB (12.5 kHz)
	ETS: 70 dB (25 kHz) / 60 dB (12.5 kHz)
Intermodulation:	EIA: 75 dB (25 kHz) / 68 dB (12.5 kHz)
	ETS: 65 dB (25 kHz / 12.5 kHz)
Spurious and Image Rejection:	EIA: 75 dB
	ETS: 70 dB
Hum & Noise:	EIA: 45 dB
	ETS: 45 dB
AF Output:	700 mW @ 16 Ohms, 5% THD

TRANSMITTER

Power Output:	5.0 / 2.5 / 1.0 / 0.25 W (selectable)
Modulation System:	EIA: Direct FM16K0F3E, 11K0F3E
	ETS: 16K0G3E, 8K50G3E
Conducted Spurious Emissions:	EIA: 70 dB Below Carrier
	ETS: 73 dB Below Carrier
FM Hum & Noise:	45 dB (25 kHz) / 40 dB (12.5 kHz)
Audio Distortion (@ 1 kHz):	< 3 %

Measuremente per EIA/ETS standards unless noted adove.
Specifications are subject to change without notice or obligation.

Exploded View & Miscellaneous Parts



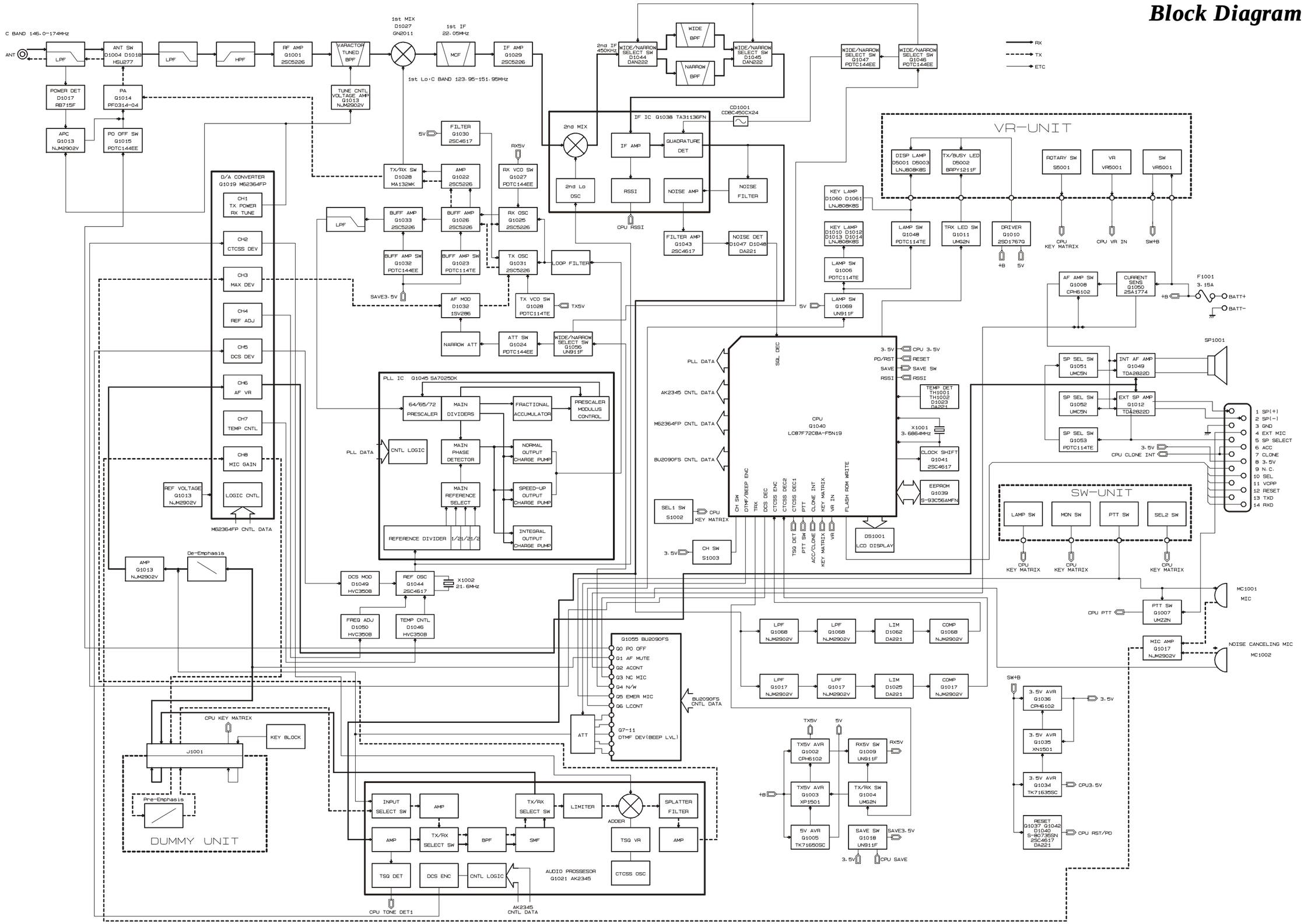
* **⚠ CAUTION**

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.

REF.	VXSTD P/N	Description	Qty.
①	U07230107	PAN HEAD SCREW M2X3B #1	1
②	U9900094	TAPTITE SCREW M2X5NI#2	2
③	U44104002	TAPTITE SCREW M2X4NI	7
④	U9900116	TAPTITE SCREW M2X8NI #2	2
⑤	U00119006	PAN HEAD SCREW M2X18AU	1
⑥	U9900117	TAPTITE SCREW M2X4NI #2	1
⑦	U07240202	PAN HEAD SCREW M2X4NI#2	2
⑧	U20305007	BINDING HEAD SCREW M3X5B	2
⑨	U02206007	SEMS SCREW SM2.6X6B	2
⑩	U24208002	BINDING HEAD SCREW M2.6X8NI	2

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

Block Diagram



Block Diagram

Note:

Overview

The **VX-900** is a VHF FM hand-held transceiver designed to operate in the frequency range of 134 to 174 MHz.

Circuit Configuration by Frequency

The receiver is a double-conversion superheterodyne with a first intermediate frequency (IF) of 22.05 MHz and a second IF of 450 kHz. Incoming signals from the antenna are mixed with the local signal from PLL to produce the first IF of 22.05 MHz.

This is then mixed with the 21.6 MHz second local oscillator (using the 21.6 MHz reference crystal) output to produce the 450 kHz second IF. This is subsequently detected to produce the demodulated signal.

The transmit signal frequency is directly generated by the PLL VCO, and modulated by the signal from the microphone. It is then amplified and sent to the antenna.

Receive Signal Path

Front-end RF Amplifier

Incoming RF from the antenna jack is delivered to the RF Unit and passes through a low-pass filter and high-pass filter consisting of coils **L1004**, **L1005**, **L1006**, **L1001**, **L1012**, **L1002**, and **L1003**, capacitors **C1013**, **C1014**, **C1015**, **C1017**, **C1019**, **C1020**, **C1001**, **C1005**, **C1298**, **C1006**, **C1007**, **C1008**, and **C1009**, and antenna switching diode **D1016** (**HSU277**).

Signals within the frequency range of the transceiver are then amplified by **Q1001** (**2SC5226-4/5**) and enter a varactor-tuned band-pass filter consisting of coils **L1008**, **L1010**, and **L1011**, capacitors **C1040**, **C1041**, **C1042**, **C1043**, **C1044**, **C1045**, **C1064**, **C1065**, **C1066**, **C1067**, **C1068**, **C1069**, and **C1070**, resisters **R1050**, **R1297** and **R1298**, and diodes **D1016**, **D1024**, **D1020**, **D1056**, **D1021**, and **D1057** (all **HVC350**) before delivery of the RF signal to the first mixer.

First Mixer

Buffered output from the VCO is amplified by **Q1022** (**2SC5226-4/5**) to provide a pure first local signal between 112.3 and 152.3 MHz for injection to the first mixer **D1027** (**GN2011-Q**). The 22.05 MHz first mixer product then passes through monolithic crystal filters **XF1001** and **XF1002** (**MDF0029**, ±5.5 kHz BW) to strip away all undesired mixer products.

IF Amplifier

The first IF signal is amplified by **Q1029** (**2SC5226-4/5**).

The amplified first IF signal is applied to FM IF subsystem IC **Q1038** (**TA31136FN**), which contains the second mixer, second local oscillator, limiter amplifier, noise amplifier, and S-meter amplifier.

The IF signal is then mixed with the second local/PLL reference oscillator **Q1022** (**2SC5226-4/5**), derived from 21.6 MHz crystal **X1002**, to produce the 450 kHz second IF when mixed with the first IF signal within **Q1038**.

The second IF then passes through the ceramic filter **CF1001** (**PBFC450R15D**: wide channels), **CF1002** (**PBFC450R9DR**: narrow channels) to strip away all but the desired signal, and is applied to the limiter amplifier in **Q1038**, which removes amplitude variations in the 450kHz IF, before detection of the speech by the ceramic discriminator **CD1001** (**CDBC450CX24**).

Audio Amplifier

Detected audio from **Q1048** is applied to **Q1021**(**AK2345**) and the audio low-pass filter, and then through the volume control (**Q1021**:**M62364FP**) to the audio amplifier **Q1012** (**TDA2822D**;external speaker) or **Q1049** (**TDA2822D**;internal speaker), providing up to 0.5 Watt to the optional headphone jack or 16-ohm loudspeaker.

Attention: Audio output is BTL output. Both sides of the audio output are above ground, and this line must not be connected to a speaker line which uses a grounded shield.

Squelch Control

The squelch circuitry consists of a noise amplifier and band-pass filter within **Q1038**, and noise detector **D1047**/**D1048** (**DA221**).

When no carrier received, noise at the output of the detector stage in **Q1038** is amplified and band-pass filtered by the noise amplifier section of **Q1038** and the network between pins 7 and 8, and then rectified by **D1047**.

Circuit Description

The resulting DC squelch control voltage is passed to pin 19 of the microprocessor **Q1040**. If no carrier is received, this signal causes pin 6 of **Q1055** (**BU2090FS**) to go low and pin 89 of **Q1040** to go high. Pin 6 of **Q1055** signals **Q1008** (**CPH6102**), **Q1051** (**UMC5N**) and **Q1052** (**UMC5N**) to disable the supply voltage to audio amplifiers **Q1012** and **Q1049**, while pin 89 makes **Q1011** (**UMG2N**) hold the green (Busy) half of the LED off, when pin 6 of **Q1055** is low and pin 89 of **Q1040** is high.

Thus, the microprocessor blocks output from the audio amplifier, and silences the receiver while no signal is being received, and also during transmission.

When a carrier appears at the discriminator, noise is removed from the output, causing pin 19 of **Q1040** to go low and the microprocessor to blink the busy LED via **Q1040**.

The microprocessor then checks the DTMF decoder chip on the Optional Unit, the CTCSS and the CDCSS code for DTMF or CTCSS or CDCSS code squelch information, if enabled, respectively. If not transmitting and CTCSS or CDCSS is not activated, or if the received tone or code matches that programmed, the microprocessor stops scanning, if active, and allows audio to pass through the audio amplifier **Q1012** and **Q1049** (**TDA2822D**) to the loudspeaker by enabling the supply voltage to it via **Q1008**, **Q1051** and **Q1052**.

Transmit Signal Path

Microphone Amplifier

Speech input from the microphone is amplified in **Q1017** (**NJM2902V**), is filtered, and is sent to **Q1019** (**M62364FP**) and sent to the Dummy Unit (or Optional Unit). The audio which returned from the Dummy Unit passes through **Q1021** (**AK2345**) to be pre-emphasized.

The processed audio is then mixed with a CTCSS tone generated by microprocessor **Q1040** and delivered to **D1032** (**1SV286**) for frequency modulating the PLL carrier up to ±5 kHz from the unmodulated carrier at the transmitting frequency.

If an external microphone is used, PTT switching is controlled by **Q1007** (**UMZ2N**), which signals the microprocessor when the impedance at the microphone jack drops.

If a CDCSS code is enabled for transmission, the code is generated by **Q1021** and delivered to **D1049** (**HVC350**) for CDCSS modulation.

If DTMF is enabled for transmission, the tone is generated by the microprocessor **Q1040** and applied to the splatter filter (**Q1021**) in place of speech audio. Also, the tone is amplified for monitoring in the loudspeaker.

Noise Canceling Microphone Circuit

Two signals from separate internal microphones (main and sub) are fed to the positive input (sub) and to the negative input (main) and of **Q1017** (**NJM2902V**). If the same signal level is present at both main and sub, the main signal will be canceled at the output of Pin 1 of **Q1017**. In other words, noise from nearby sources not directly connected to the transceiver enters the main and sub input at the same signal and, in the absence of (stronger) voice input, is therefore canceled out.
When a signal is only input to the main microphone, and there is no signal at the sub microphone, the main signal is passed as-is from **Q1017**.

Drivers and Final Amplifiers

The modulated signal from the VCO, **Q1031** (**2SC5226-4/5**), is buffered by **Q1026** (**2SC5226-4/5**) and amplified by **Q1022** (**2SC5226-4/5**) . The low-level transmit signal is then applied to the Power Module **Q1014** (**PF0314**) for final amplification up to a maximum of 5 Watts of output power.

The transmit signal then passes through the antenna switch **D1018** (**HSU277**), and is low-pass filtered to suppress harmonic spurious radiation before delivery to the antenna.

Automatic Transmit Power Control

RF power output from the final amplifier is sampled by **C1016** and **C1018**, and is rectified by **D1017** (**RB715F**). The resulting DC is fed back through **Q1013** (**NJM2902V**) to the Power Module, providing control of the power output.

The microprocessor selects either "High" or one of three "Low" power levels.

Transmit Inhibit

When the Transmit PLL is unlocked, pin 18 of PLL chip **Q1045** goes to logic "low." The resulting DC "unlock" control voltage is passed to pin 20 of microprocessor **Q1040**. While the transmit PLL is unlocked, pin 85 of **Q1040** remains low, which then turns off the Automatic Power Controller **Q1015** (**PDTC144EE**) and **Q1013** (**NJM2902V**) to disable the supply voltage to the Power Module **Q1014**, disabling the transmitter.

Spurious Suppression

Generation of spurious products by the transmitter is minimized by the fundamental carrier frequency being equal to final transmitting frequency, modulated directly in the transmit VCO. Additional harmonic suppression is provided by a low-pass filter consisting of **L1004**, **L1005**, and **L1006** and **C1003**, **C1014**, **C1015**, **C1017**, **C1019**, and **C1020**, resulting in more than 60 dB of harmonic suppression prior to delivery of the signal to the antenna.

PLL Frequency Synthesizer

The PLL frequency synthesizer consists of the VCO, **Q1025** (**2SC5226-4/5**:RX) or **Q1031** (**22SC5226-4/5**:TX); VCO buffers **Q1026** (**2SC5226-4/5**), **Q1022** (**2SC5225-4/5**) ; PLL subsystem IC **Q1045** (**SA7025DK**) and 21.6 MHz reference crystal **X1002**.

The frequency stability is ±2.5 ppm within the temperature range of -30° to +60°C. The output of the 21.6 MHz reference is applied to pin 8 of the PLL IC.

While receiving, VCO **Q1025** oscillates between 111.94 and 151.94 MHz according to the transceiver version and the programmed receiving frequency. The VCO generates at 111.94 to 151.94 MHz for providing to the first local signal. In the transmit mode, the VCO generates 134 to 174 MHz.

The output of the VCO is amplified by **Q1033**, and is routed to pin 5 of the PLL IC. Also the output of the VCO is amplified by the **Q1022** and routed to the first local and the drive chain according toinstructions from **D1028**.

The PLL IC consists of a prescaler, fractional divider, reference divider, phase comparator, and a charge pump. This PLL IC is a fractional-N type synthesizer utilizing a 40 or 50 kHz reference signal which is eighth multiple of the channel step size (5, 6.25 or 7.5 kHz). The input signal from pins 5 and 8 of the PLL IC is divided down to 40 or 50 kHz and compared at the phase comparator. The pulsed output signal of the phase comparator is applied to the charge pump and transformed into a DC signal in the loop filter. The DC signal is applied to the pin 1 of the VCO and locks to keep the VCO frequency constant.

PLL data is delivered from DTA (pin 100), CLK (pin 2) and PSTB (pin 98) of the microprocessor **Q1040**. The data are applied to the PLL IC when the channel is changed or when transmission switches is changed to reception (and vice versa). A PLL lock condition is always monitored by the pin 20 of **Q1040**. When the PLL is unlocked, the "UL" line goes low.

Miscellaneous Circuits

Push-To-Talk Transmit Activation

The PTT switch on the microphone is connected to pin 32 of microprocessor

Q1040, so that when the PTT switch is closed, pin 85 of **Q1040** goes high. This signals the microprocessor to activate the TX/RX controller **Q1004** (**UMG2N**), which then disables the receiver by interrupting the 5 V supply bus at **Q1009** (**UN911F**) to the front-end, FM IF subsystem IC **Q1038**, and the receivers VCO circuitry.

At the same time, **Q1003** (**XP1501**) and **Q1002** (**CPH6102**) activate the TX 5V supply line to enable the transmitter.

Alignment

Introduction

The **VX-900** is carefully aligned at the factory for the specified performance across the frequency range specified for each version. Realignment should therefore not be necessary except in the event of a component failure, or when altering the version type. All component replacement and service should be performed only by an authorized **VERTEX STANDARD** representative, or the warranty policy may be voided.

The following procedures cover the sometimes critical and tedious adjustments that are not normally required once the transceiver has left the factory. However, if damage occurs and some parts subsequently are placed, 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 **VERTEX STANDARD** service technicians who are experienced with the circuitry and fully equipped for repair and alignment. Those who do undertake any of the following alignments are cautioned to proceed at their own risk. Problems caused by unauthorized attempts at realignment are not covered by the warranty policy. Also, **VERTEX STANDARD** reserves the right to change circuits and alignment procedures, in the interest of improved performance, without notifying owners.

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.

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.

The following test equipment (and thorough familiarity with its correct use) is necessary for complete realignment. Correction of problems caused by misalignment resulting from use of improper test equipment is not covered under the warranty policy. 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.

Required Test Equipment

- ❒ RF Signal Generator with calibrated output level at 200 MHz
- ❒ Deviation Meter (linear detector)
- ❒ In-line Wattmeter with 5% accuracy at 200 MHz
- ❒ 50-Ohm RF Dummy Load with power rating 10W at 200 MHz
- ❒ 16-Ohm AF Dummy Load
  (***Attention :*** *Audio output is BTL output; do not short "shield" to ground!)*
- ❒ Regulated DC Power Supply (standard 7.5V DC, 3A)
- ❒ Frequency Counter with 0.2 ppm accuracy at 200 MHz
- ❒ AC Voltmeter
- ❒ DC Voltmeter
- ❒ UHF Sampling Coupler
- ❒ IBM PC / compatible Computer with Microsoft DOS v3.0 or later operating system
- ❒ Vertex Standard **CT-71** Connection Cable and SVC39 Alignment program

Alignment Preparation and Precautions

A 50-Ohm RF Dummy 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 following step to determine whether the same test equipment will be required. If not, remove the test equipment (except dummy load and wattmeter, in 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° and 30° C (68 ° ~ 86 ° F). When the transceiver is brought into the shop from hot or cold air, it should be allowed time to come to room temperature before alignment.

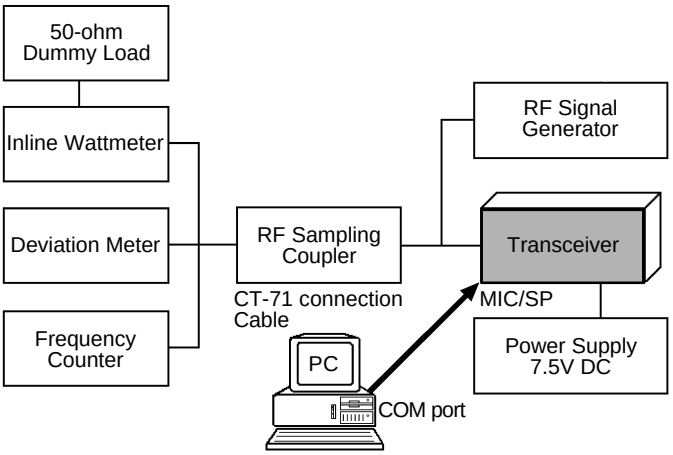
Whenever possible, alignments should be made with oscillator shields and circuit boards firmly affixed in place. Also, the test equipment must be thoroughly warmed up before beginning.

Note: *Signal levels in dB referred to in the alignment procedure are based on 0 dBμ EMF = 0.5 μV (Closed circuit).*

Important Note

When connecting the **CT-71** plug into the **MIC/SP** jack of the **VX-900**, you must remove the plastic cap and its mounting screws prior to programming. Please remember to re-attach the cap and screws when the programming is complete.

Set up the test equipment as shown for transceiver alignment, and apply 7.5V DC power to the transceiver.



The transceiver must be programmed for use in the intended system before alignment is attempted. The RF parameters are loaded from the file during the alignment process.

In order to facilitate alignment over the complete operating range of the equipment, it is recommended that the channel data in the transceiver be preset as per the chart below.

Channels	Frequency (Simplex)
Band-LOW	146.000
Band-MID	160.000
Band-HIGH	174.000

The alignment tool outline

Installation of the Alignment Tool

The "alignment mode" is a software-based protocol, accessed by an "Alignment Mode" command from the computer while switching the transceiver on. It is operated by the alignment tool automatically. During use of the alignment mode, normal operation is suspended. The alignment tool program provides all needed operation capability.

The alignment tool consists of an executable file “SVC39.exe” and an accompanying configuration file “SVC39.cfg” which should be loaded per standard DOS procedures. Create a suitable directory, then copy these files from the distribution diskette into the new directory. For example, if copying the file from Drive A, use the following DOS command sequence:

c:\ mkdir align900 [enter]
c:\ cd align900 [enter]
c:\align900\ copy a:SVC39.*

No further installation steps are required. If you wish to utilize a different name for the alignment directory, it will not matter to the executable file.

Booting the Alignment Tool

Change to the “align900” directory (or the directory name you utilized in the previous section). Now type on the command line: SVC39 [**ENTER**] to boot the alignment tool.

Entering the Alignment Mode

To enter the alignment mode, turn the transceiver off, then press [**0**] on the computer keyboard. Now, turn the transceiver back on. When the command has been successful, a message on the computer screen will confirm that the transceiver is now in the “Alignment” mode.

Action of the Switches

When the transceiver is in alignment mode, the [**PTT**], [**MON**], and [**DIAL**] switches, as well as the Dial, are disabled. In the Alignment mode, all of the transceiver’s operation is remotely controlled by the PC.

Alignment Sequence

Although the data displayed on the computer’s screen during alignment is temporary data, it is im-

portant that you follow the basic alignment sequence precisely, so that the displayed data and the data loaded into the transceiver are identical.

Basic Alignment Sequence

1. Enter the alignment mode
2. Upload data from transceiver
3. Align data
4. Download data to transceiver

Alignment Tool Menu

Common Data

The parameters in this section represent "common" data for all channels. Once these "Common Data" parameters are correctly aligned, the "TX POWER," "MAX DEV," and "SUB AUDIO DEV," can be trimmed for each channel, if needed.

During alignment, each parameter is adjusted for a higher or lower value via the computer's [▲] and [▼] keys. When the desired value is reached, type [**ENTER**] to lock in the new value.

(0) Common Tx :

The first alignment section adjusts transmit-mode parameters which are common to all channels.

- [0] FREQUENCY

  This parameter is used to adjust the PLL reference frequency. From the "**(0) Common Tx**" section, press [**0**] to activate this alignment sequence.

  - Press the [**space**] key on the keyboard to activate the transmitter.
  - Press the [▲] or [▼] key, as needed, so the counter frequency is within 100 Hz of the channel center frequency for the MID channel.
  - When the precise frequency is attained, press [**ENTER**] to lock in the new data.
  - Now verify that the HIGH and LOW channels are also within tolerance.

- [1] HIGH

  This parameter is used to align Tx High power (5W). From the "**(0) Common Tx**" section, press [**1**] to activate this alignment sequence.

  - Use the [◀] or [▶] key to select the "MID" frequency channel in the alignment range.
  - Press the [**space**] key on the keyboard to activate the transmitter.
  - Press the [▲] or [▼] key, as needed, to set the power output to 5 Watts, as indicated on the external wattmeter.
  - When the 5 Watt level is attained, press [**ENTER**] to lock in the new data.

- [2] L1

  This parameter aligns the L1 power (0.25 W) level. From the "**(0) Common Tx**" section, press [**2**] to activate this alignment sequence.

  - Press the [**space**] key on the keyboard to activate the transmitter.
  - Press the [▲] or [▼] key, as needed, to set the power output to 0.25 W, as indicated on the external wattmeter.
  - When the 0.25 W level is attained, press [**ENTER**] to lock in the new data.

- [3] L2

  This parameter aligns the L2 power (1 W) level. From the "**(0) Common Tx**" section, press [**3**] to activate this alignment sequence.

  - Press the [**space**] key on the keyboard to activate the transmitter.
  - Press the [▲] or [▼] key, as needed, to set the power output to 1 Watt, as indicated on the external wattmeter.
  - When the 1 Watt level is attained, press [**ENTER**] to lock in the new data.

- [4] L3

  This parameter aligns the L3 power (2.5 W) level. From the "**(0) Common Tx**" section, press [**4**] to activate this alignment sequence.

  - Press the [**space**] key on the keyboard to activate the transmitter.
  - Press the [▲] or [▼] key, as needed, to set the power output to 2.5 W, as indicated on the external wattmeter.
  - When the 2.5 W level is attained, press [**ENTER**] to lock in the new data.

- [5] MAXIMUM DEVIATION

  This section adjusts the transmitter's voice deviation level. From the "**(0) Common Tx**" section, select [**5**] to enter this alignment sequence.

- Use the [◀] or [▶] key to select the "MID" frequency channel in the alignment range.
- Disable any subaudible tone signaling on this channel, if present.
- Press the [**space**] key on the computer keyboard to start alignment. This activates the transmitter, and injects a 1 kHz test tone.
- Press the [▲] or [▼] key, as needed, to set the deviation to the desired value (typically 3.9 ~ 4.2 kHz, or 2.0 ~ 2.3 kHz for "narrow band" channels).
- When the desired deviation level is attained, press [**ENTER**] to lock in the new value.

- [6] MIC GAIN

This parameter is used to align MIC Gain level. From the "**(0) Common Tx**" section, press [**6**] to activate this alignment sequence.

- Use the [t] or [u] key to select the channel on which you wish to adjust the MIC Gain.
- Press the [**space**] key on the computer keyboard to start alignment. This activates the transmitter, and injects a subaudible test tone.
- Use the [▲] or [▼] key to find the desired MIC Gain level is achieved.
- Press the [**ENTER**] key on the computer keyboard to lock in the new MIC Gain level.

- [7] SUB AUDIO DEVIATION

This section adjusts the transmitter's subaudible tone deviation level. From the "**(0) Common Tx**" section, select [**7**] to enter this alignment sequence.

- After setting the Maximum Deviation in the previous section, it is now time to align the subaudible signaling deviation level.
- Use the [◀] or [▶] key to select the channel on which you wish to adjust the Subaudible Deviation.
- Press the [**space**] key on the computer keyboard to start alignment. This activates the transmitter, and injects a subaudible test tone.
- Press the [▲] or [▼] key, as needed, to set the deviation to the desired value (typically 0.6±0.1 kHz, or 0.4±0.1 kHz for "narrow band" channels).
- When the desired deviation level is attained, press [**ENTER**] to lock in the new value.

(1) Common RX :

- [0] TIGHT NOISE SQUELCH

This parameter is used to align the "Tight Noise Squelch" level. From the "**(1) Common Rx**" section, select [**0**] to enter this alignment sequence.

- Set the signal generator output level to –0dBµ EMF (0.5 µV).
- Press the [**ENTER**] key on your computer keyboard to set the "Tight" squelch level.

- [1] THRESHOLD NOISE SQUELCH

This parameter is used to align the squelch threshold level. From the "**(1) Common Rx**" select [**1**] to enter this alignment sequence.

- Set the signal generator output level to –10 dBµ EMF (0.16 µV).
- Press the [**ENTER**] key on your computer keyboard to set the squelch "Threshold" level.

- [2] RSSI (RECEIVED SIGNAL STRENGTH INDICATOR) SQUELCH

This section allows adjustment of the RSSI level. From the "**(1) Common Rx**" section, press [**2**] to enter this alignment sequence.

- Set the signal generator output level to +3.0 dBµ EMF (0.7 µV).
- Press the [**ENTER**] key on the computer keyboard to set the RSSI squelch level.

- [3] TX SAVE

This section allows adjustment of the Tx Save activation threshold (reducing the transmitter power in strong-signal environments). From the "**(1) Common Rx**" section, press [**3**] to enter this alignment sequence.

- Set the Signal Generator output level to +15 dBµ EMF (2.8 µV).
- Press the [**ENTER**] key on the computer keyboard to lock in the TX Battery Saver threshold level.

Alignment

Channels

The following parameters may be adjusted individually for each channel. For example, minor variations in the power output across the operating band may be equalized by following this section's instructions.

(2) Channels TX :

- [0] TX HI POWER TRIM

This parameter is used to trim Tx power on the displayed channel. From the "**(2) Channels Tx**" section, select [**0**] to adjust the "Tx Hi Power Trim" setting(s).

- Use the [◀] or [▶] key to select the channel to be adjusted.
- Press the [**space**] key on the keyboard to activate the transmitter.
- Press the [▲] or [▼] key, as needed, to trim the power output to the power that is programmed by CE39 channel editor, as indicated on the external wattmeter.
- Press [**ENTER**] to lock in the new data.

- [1] TX LOW POWER TRIM (L1, L2 or L3)

This parameter is used to trim Tx power on the displayed channel. From the "**(2) Channels Tx**" section, select [**1**] to adjust the "Tx Low Power Trim" setting(s).

- Use the [◀] or [▶] key to select the channel to be adjusted.
- Press the [**space**] key on the keyboard to activate the transmitter.
- Press the [▲] or [▼] key, as needed, to trim the power output to the power that is programmed by CE39 channel editor, as indicated on the external wattmeter.
- Press [**ENTER**] to lock in the new data.

- [2] MAXIMUM DEVIATION TRIM

This parameter is to trim maximum deviation on the displayed channel. From the "**(2) Channels Tx**" section, select [**2**] to adjust the deviation level.

- Use the [◀] or [▶] key to select the channel on which you wish to adjust the deviation.
- Press the [**space**] key on the computer keyboard to start alignment. This activates the transmitter, and injects a 1 kHz test tone.
- Press the [▲] or [▼] key, as needed, to set the deviation to the desired value (typically 3.9~4.2 kHz, or 2.0~2.3 kHz for "narrow band" channels).
- When the desired deviation level is attained, press [**ENTER**] to lock in the new value.

- [2] SUB AUDIO DEVIATION TRIM

This parameter used to is to trim Subaudible deviation on the displayed Sub-audio channel. From the "**(2) Channels Tx**" section, select [**2**] to adjust the Subaudible Deviation level.

- Use the [◀] or [▶] key to select the channel on which you wish to adjust the Subaudible Deviation.
- Press the [**space**] key on the computer keyboard to start alignment. This activates the transmitter, and injects a subaudible test tone.
- Press the [▲] or [▼] key, as needed, to set the deviation to the desired value (typically 0.6±0.1 kHz, or 0.4±0.1 kHz for "narrow band" channels).
- When the desired deviation level is attained, press [**ENTER**] to lock in the new value.

(3) Channels Rx :

- [0] MANUAL TUNING

This parameter is used to tune the RF front-end components for the current channel manually. From the "**(3) Channels Rx**" section, select [**0**] to peak the receiver performance.

- Use the [◀] or [▶] key to select the channel on which you wish to adjust the front end alignment.
- Connect the signal generator to the Antenna jack, and set its level to +20 dBµ EMF (5 µV).
- Press [**ENTER**] to lock in the new data.

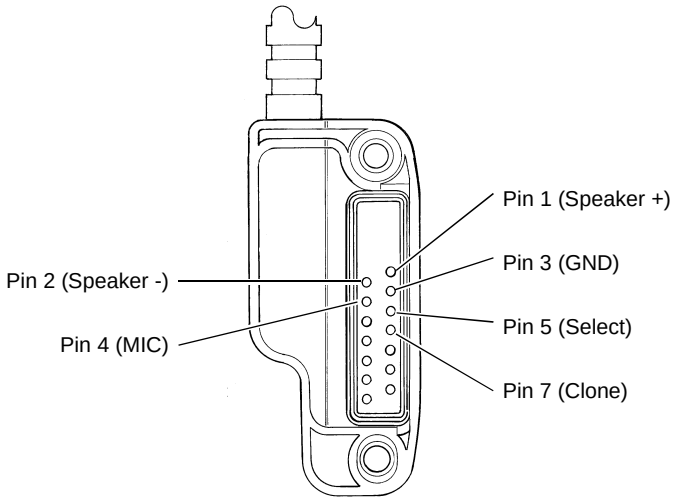
(4) Other :

- [0] BATTERY WARNING LEVEL

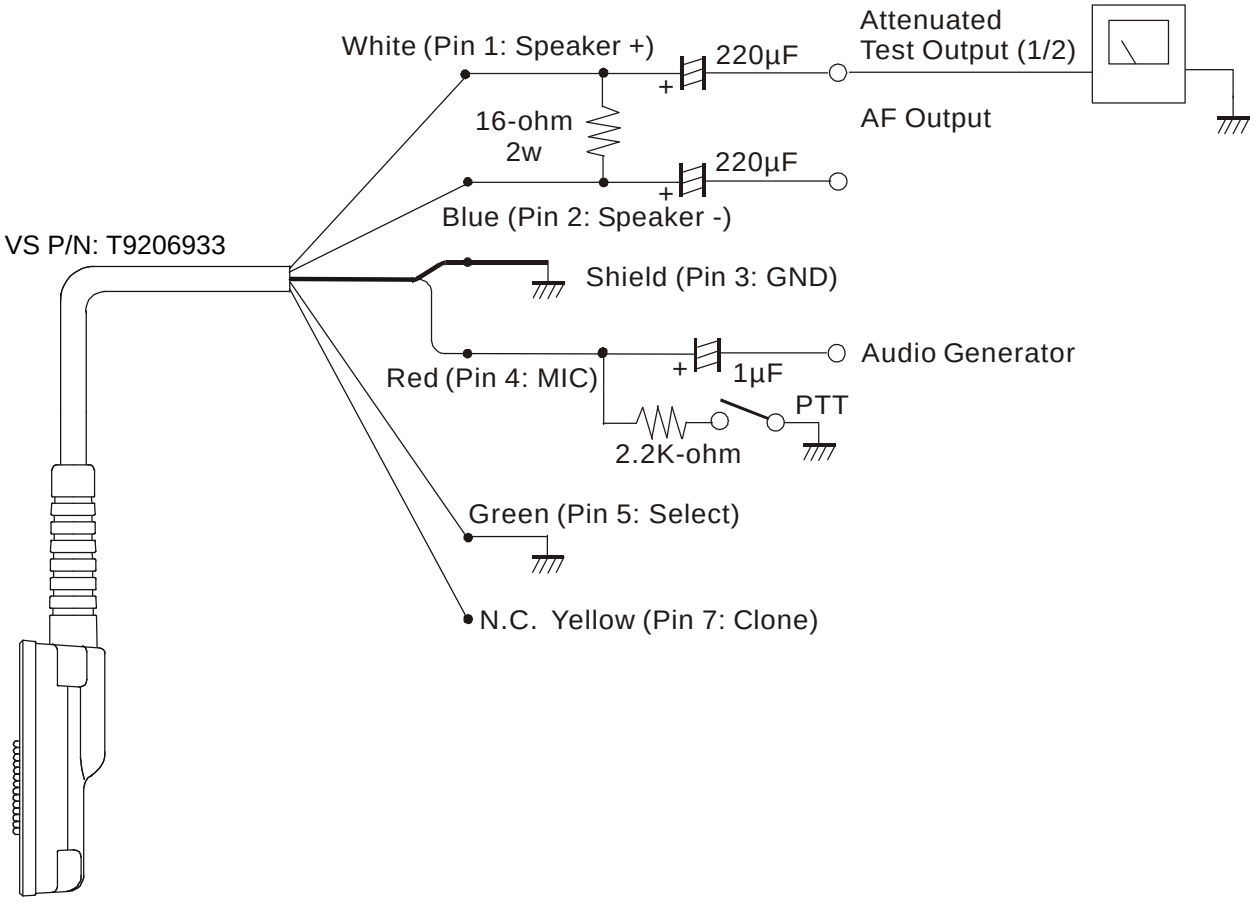
This parameter sets the battery warning level. From the "**(4) Other**" section, select [**0**] to align the battery warning voltage sensor.

- Set the DC supply voltage to 6.5 Volts.
- Press [**ENTER**] to lock in the new data.
- Set the DC supply voltage to 7.5 volts.

Connector Pinout Diagram



AF Test Adapter Schematic

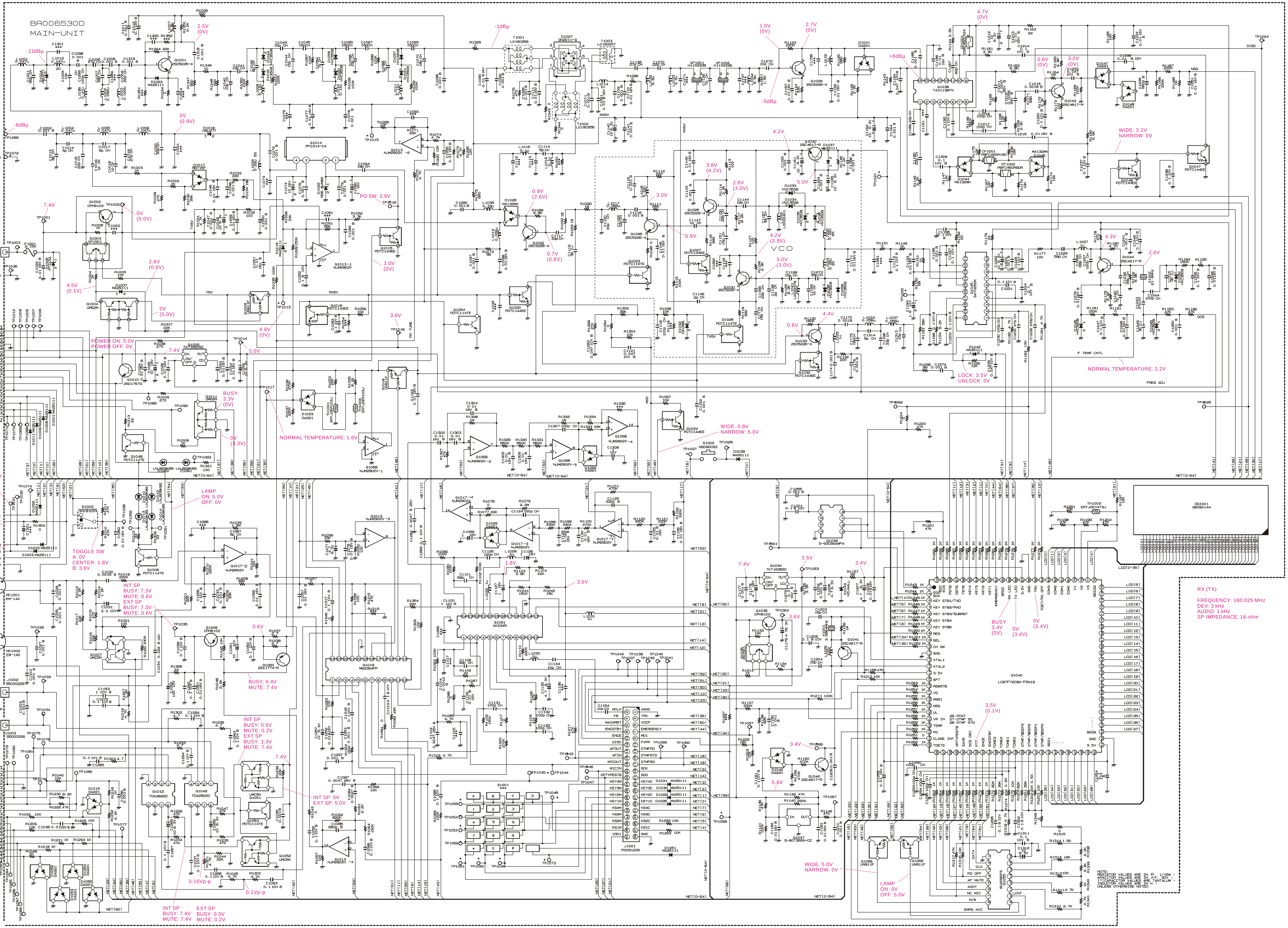


Note!

Because of the bridge audio amplifier circuit used in the **VX-900**, it is necessry to construct and use a simple audio load test adapter as shown in the schematic diagram above, when conducting receiver alignment steps.

Do not connect either side of the speaker leads to chassis "ground."

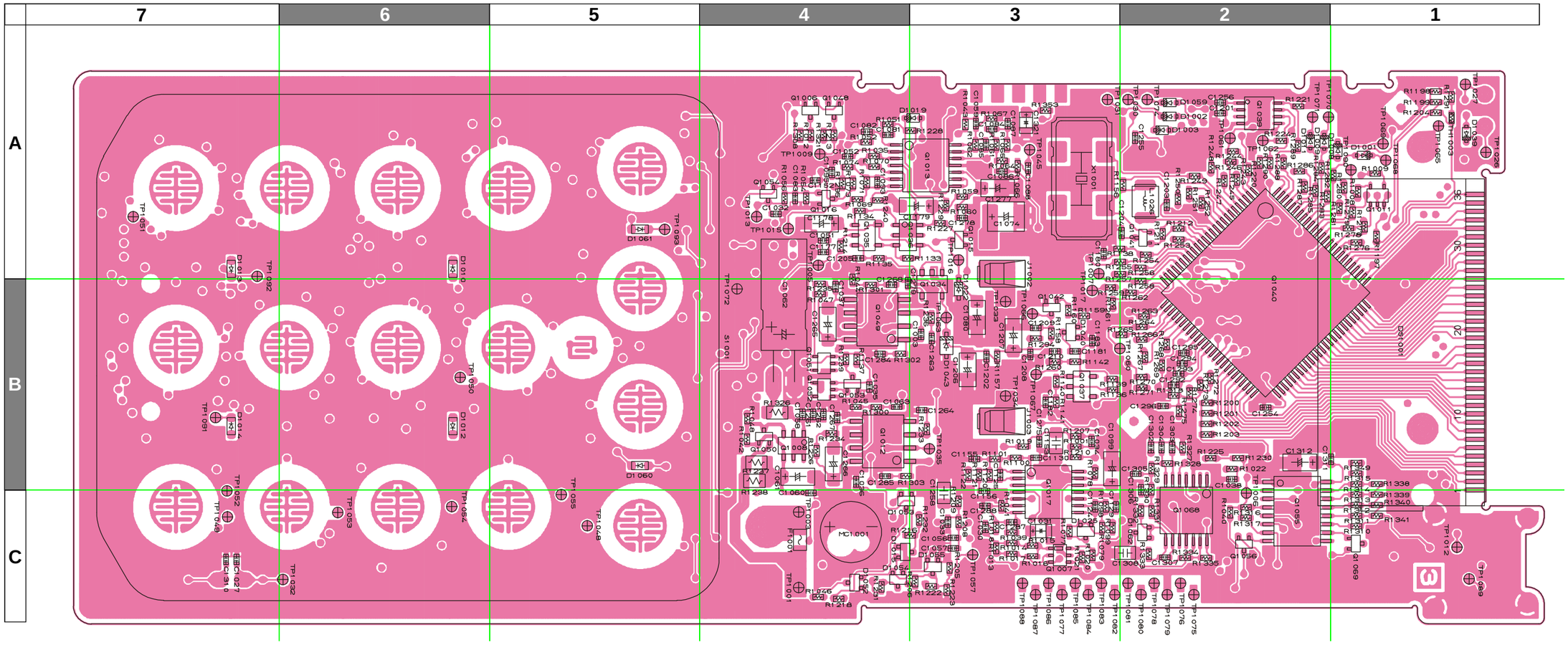
Note:


BR006530D
MAIN-UNIT
VCO
RX (TX)
FREQUENCY: 160.025 MHz
DEV: 3 kHz
AUDIO: 1 kHz
SP IMPEDANCE: 16-ohm
NORMAL TEMPERATURE: 2.2V
NORMAL TEMPERATURE: 1.6V
WIDE: 3.2V
NARROW: 0V
WIDE: 0.8V
NARROW: 5.0V
WIDE: 5.0V
NARROW: 0V
LOCK: 3.5V
UNLOCK: 0V
POWER ON: 5.0V
POWER OFF: 0V
LAMP KEY
ON: 2.6V
OFF: 3.2V
MON KEY
ON: 2.3V
OFF: 3.1V
TOGGLE SW
A: 0V
CENTER: 1.8V
B: 3.6V
LAMP
ON: 5.0V
OFF: 0V
INT SP: 1.9V
EXT SP: 0V
INT SP: 0V
EXT SP: 5.0V

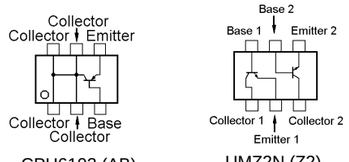
Main Unit

Note:

Parts Layout

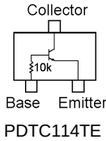


Side A

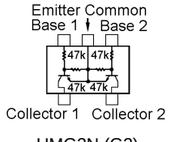


CPH6102 (AB)
(Q1008, 1036)

UMZ2N (Z2)
(Q1007)



PDTC114TE
(Q1006, 1048, 1053, 1054)



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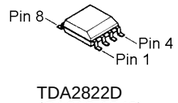
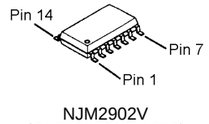
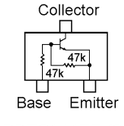
(Q1011)



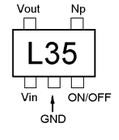
TDA2822D
(Q1012,1049)



NJM2902V
(Q1013, 1017, 1068)



PDTC144EE (26)
(Q1015, 1016)



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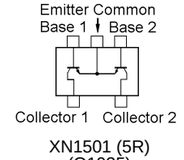
(Q1034)



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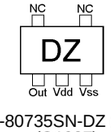

S-80735SN-DZ (DZ)
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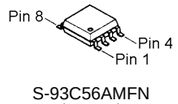

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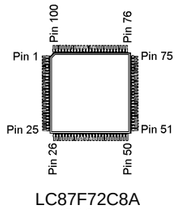

LC87F72C8A
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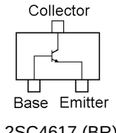

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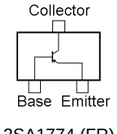
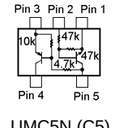
(Q1041, 1042)



2SA1774 (FR)
(Q1050)



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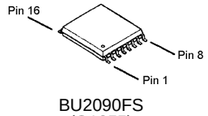
(Q1051, 1052)



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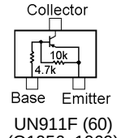
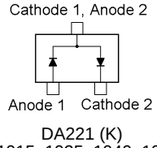
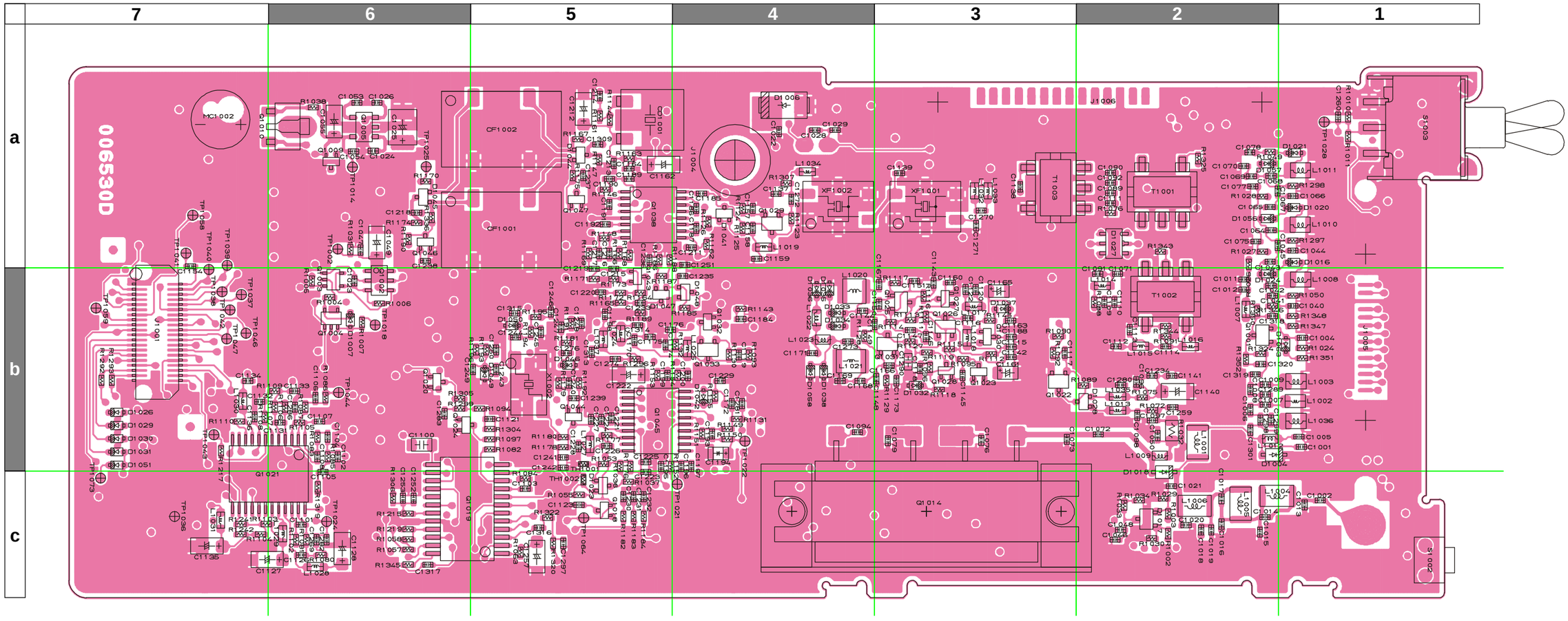


UN911F (60)
(Q1056, 1069)

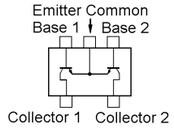


DA221 (K)
(D1015, 1025, 1040, 1052, 1053, 1054, 1055, 1062)

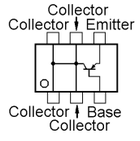
Main Unit



Side B



XP1501 (5R)
(Q1003)



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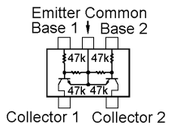
(Q1002)



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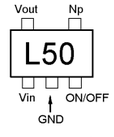

TK71650SCL (L50)
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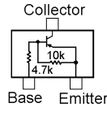
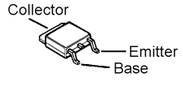


UN911F (60)
(Q1009, 1018)



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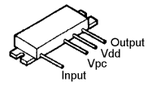

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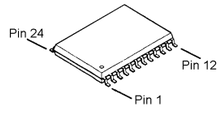

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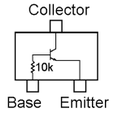
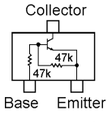
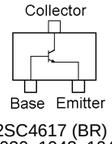
AK2345
(Q1021)



PDTC114TE
(Q1023, 1028)



PDTC144EE (26)
(Q1020, 1024, 1027, 1032, 1046, 1047)



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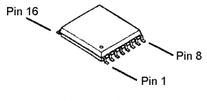
(Q1030, 1043, 1044)

2SC5226 (R22)
(Q1001, 1022, 1025, 1026, 1029, 1031, 1033)



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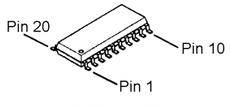

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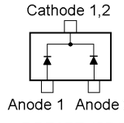
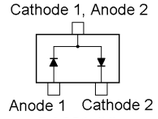
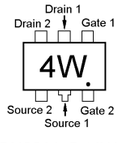


RB715F (3D)
(D1017)

MA132WK (MU)
(D1028, 1044, 1045)

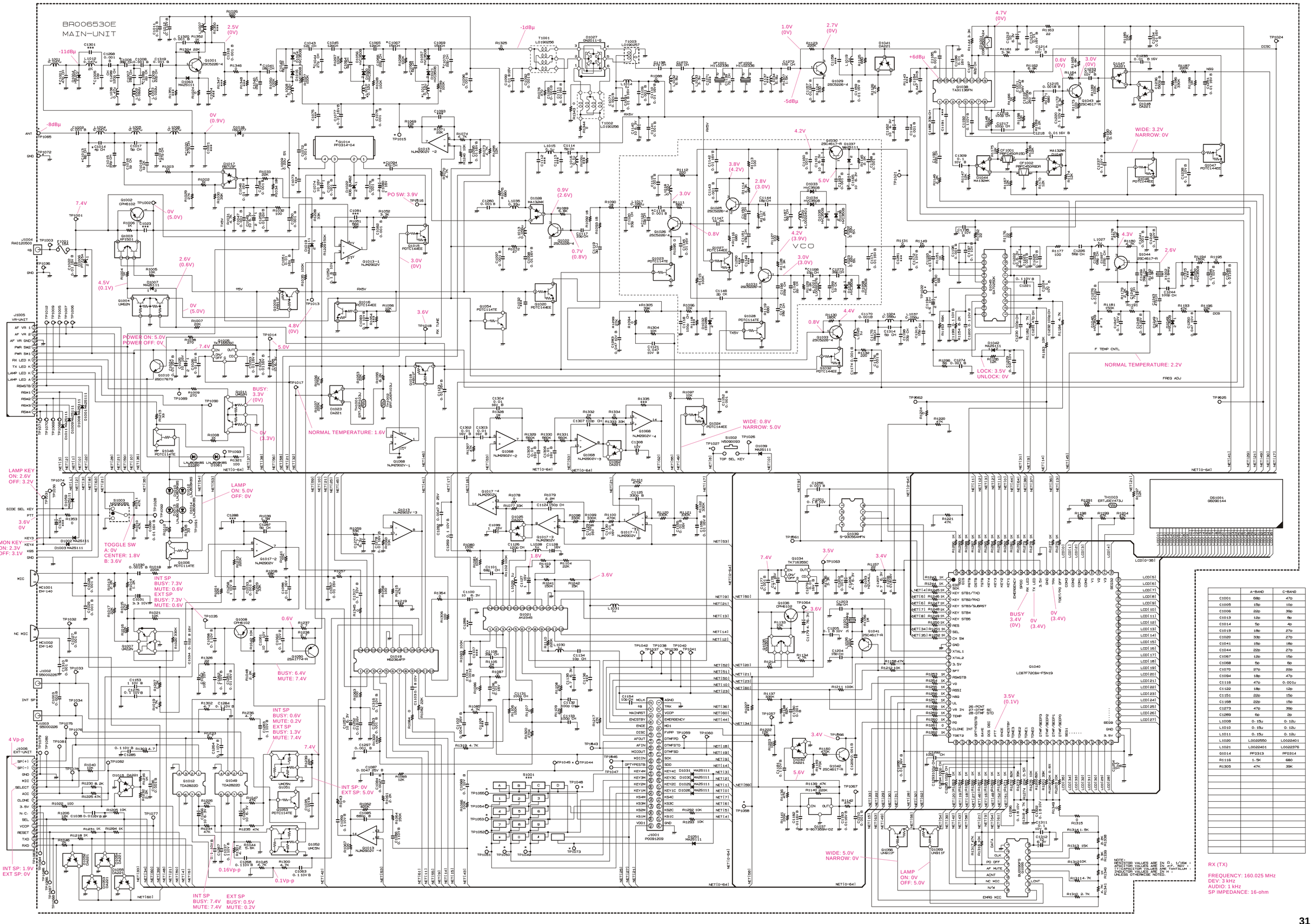


DA221 (K)
(D 1023, 1041, 1047, 1048)



GN2011-Q (4W)
(D1027)

Circuit Diagram

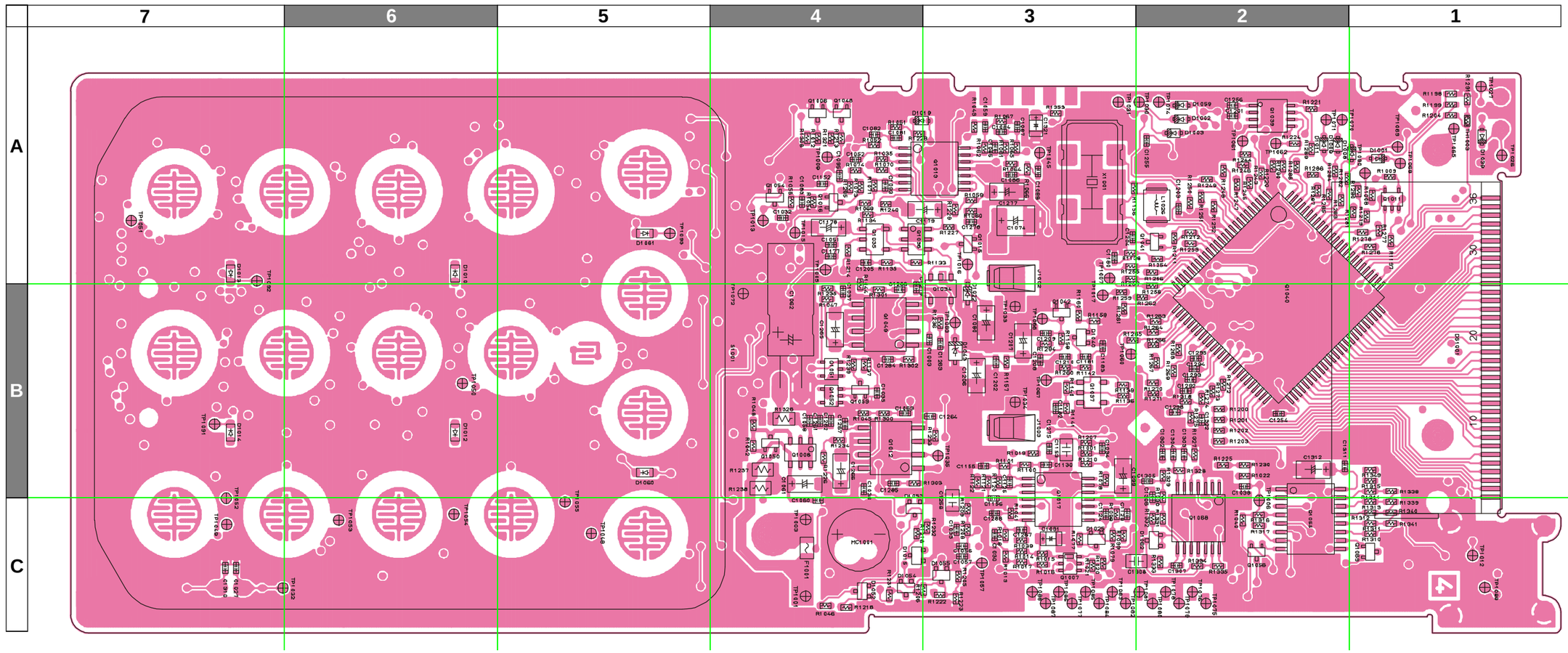


	A-BAND	C-BAND
C1001	68p	47p
C1005	15p	10p
C1006	22p	39p
C1013	12p	8p
C1014	5p	4p
C1019	18p	27p
C1020	33p	27p
C1041	15p	18p
C1044	22p	27p
C1067	12p	15p
C1068	5p	5p
C1070	27p	22p
C1094	18p	47p
C1116	47p	0.001u
C1122	18p	12p
C1151	22p	15p
C1168	22p	15p
C1273	47p	39p
C1289	5p	2p
L1008	0.15u	0.12u
L1010	0.15u	0.12u
L1011	0.15u	0.12u
L1020	L0220550	L0222401
L1021	L0222401	L0222376
Q1014	PF0313	PF0314
R1116	1.5K	680
R1305	47K	39K

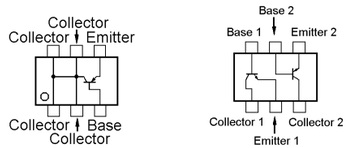
Main Unit (Lot. 6~)

Note:

Parts Layout

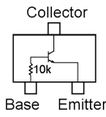


Side A

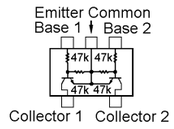


CPH6102 (AB)
(Q1008, 1036)

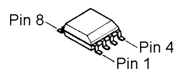
UMZ2N (Z2)
(Q1007)



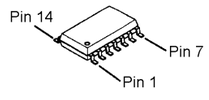
PDTC114TE
(Q1006, 1048, 1053, 1054)



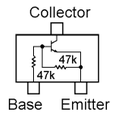
UMG2N (G2)
(Q1011)



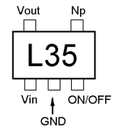
TDA2822D
(Q1012,1049)



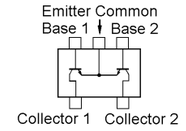
NJM2902V
(Q1013, 1017, 1068)



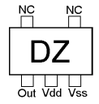
PDTC144EE (26)
(Q1015, 1016)



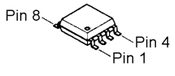
TK71635SCL (L35)
(Q1034)



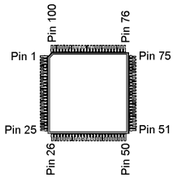
XN1501 (5R)
(Q1035)



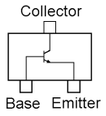
S-80735SN-DZ (DZ)
(Q1037)



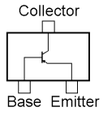
S-93C56AMFN
(Q1039)



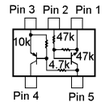
LC87F72C8A
(Q1040)



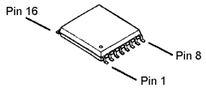
2SC4617 (BR)
(Q1041, 1042)



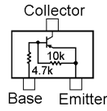
2SA1774 (FR)
(Q1050)



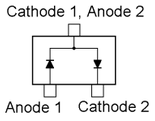
UMC5N (C5)
(Q1051, 1052)



BU2090FS
(Q1055)

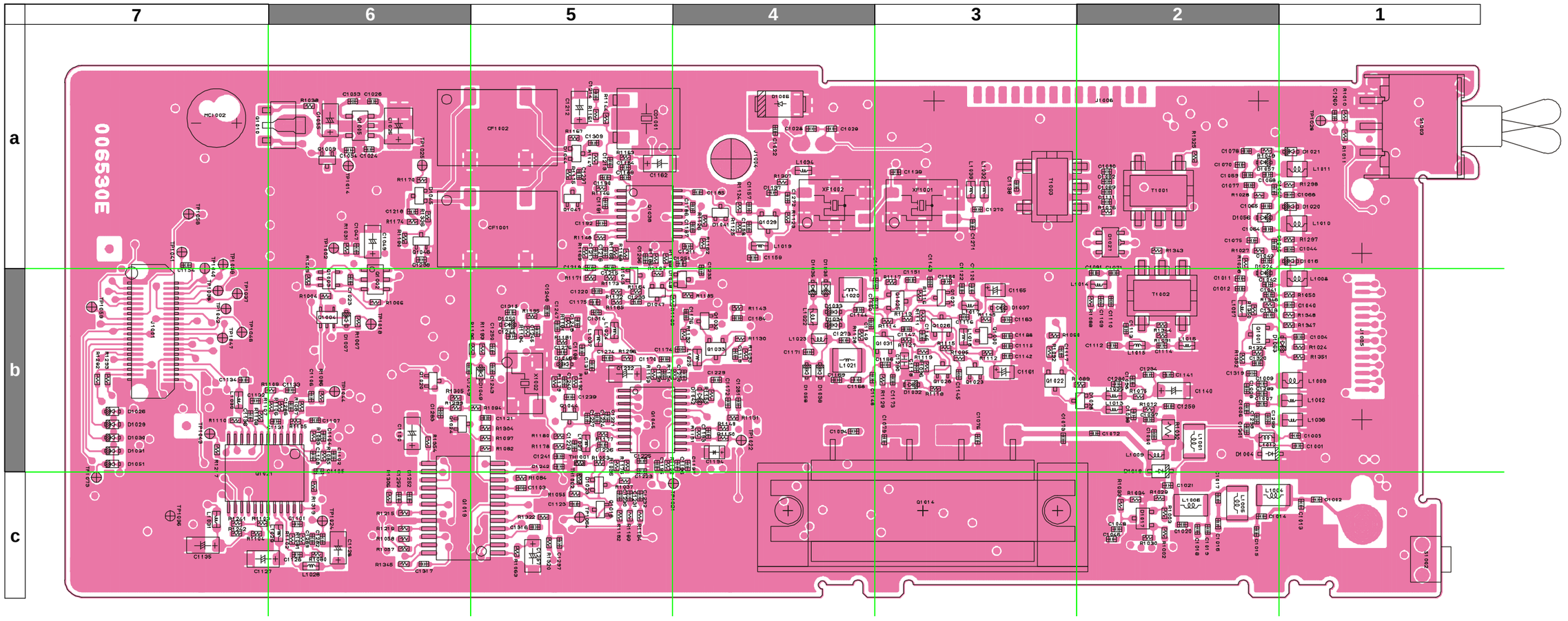


UN911F (60)
(Q1056, 1069)

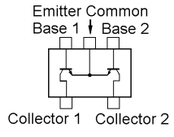


DA221 (K)
(D1015, 1025, 1040, 1052, 1053, 1054, 1055, 1062)

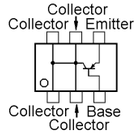
Main Unit (Lot. 6~)



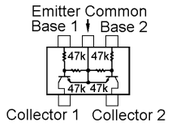
Side B



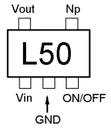
XP1501 (5R)
(Q1003)



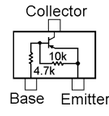
CPH6102 (AB)
(Q1002)



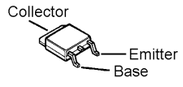
UMG2N (G2)
(Q1004)



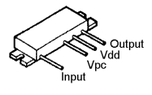
TK71650SCL (L50)
(Q1005)



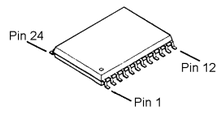
UN911F (60)
(Q1009, 1018)



2SD1767 (DC)
(Q1010)

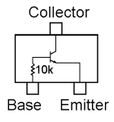


PF0314-04
(Q1014)

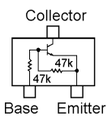


M62364FP
(Q1019)

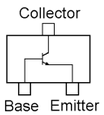
AK2345
(Q1021)



PDTC114TE
(Q1023, 1028)

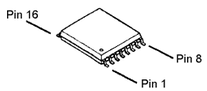


PDTC144EE (26)
(Q1020, 1024, 1027, 1032, 1046, 1047)

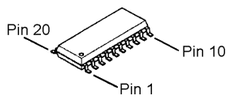


2SC4617 (BR)
(Q1030, 1043, 1044)

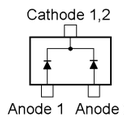
2SC5226 (R22)
(Q1001, 1022, 1025, 1026, 1029, 1031, 1033)



TA31136FN
(Q1038)

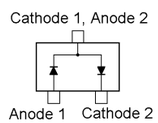


SA7025DK
(Q1045)

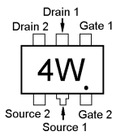


RB715F (3D)
(D1017)

MA132WK (MU)
(D1028, 1044, 1045)

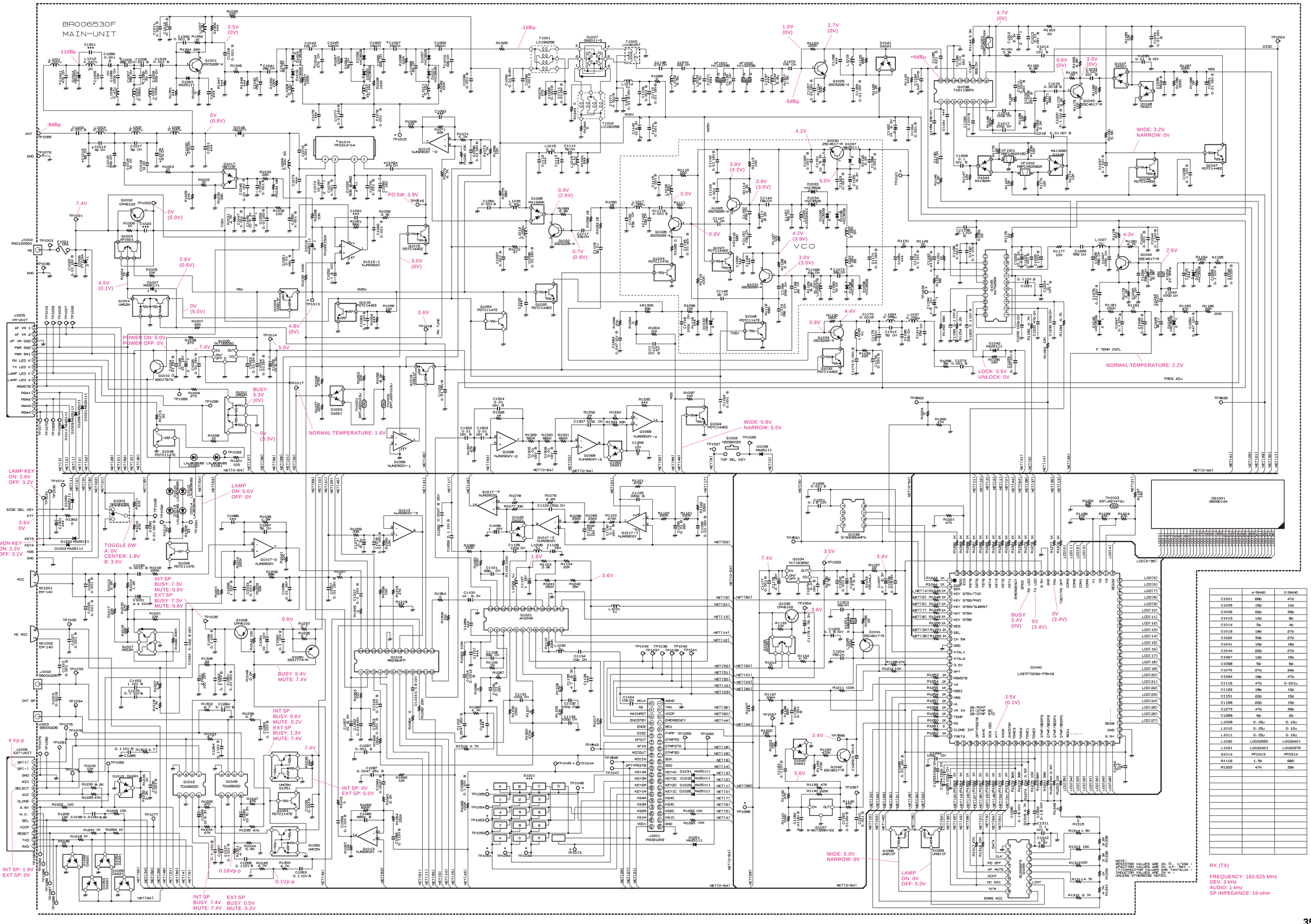


DA221 (K)
(D 1023, 1041, 1047, 1048)



GN2011-Q (4W)
(D1027)

Circuit Diagram



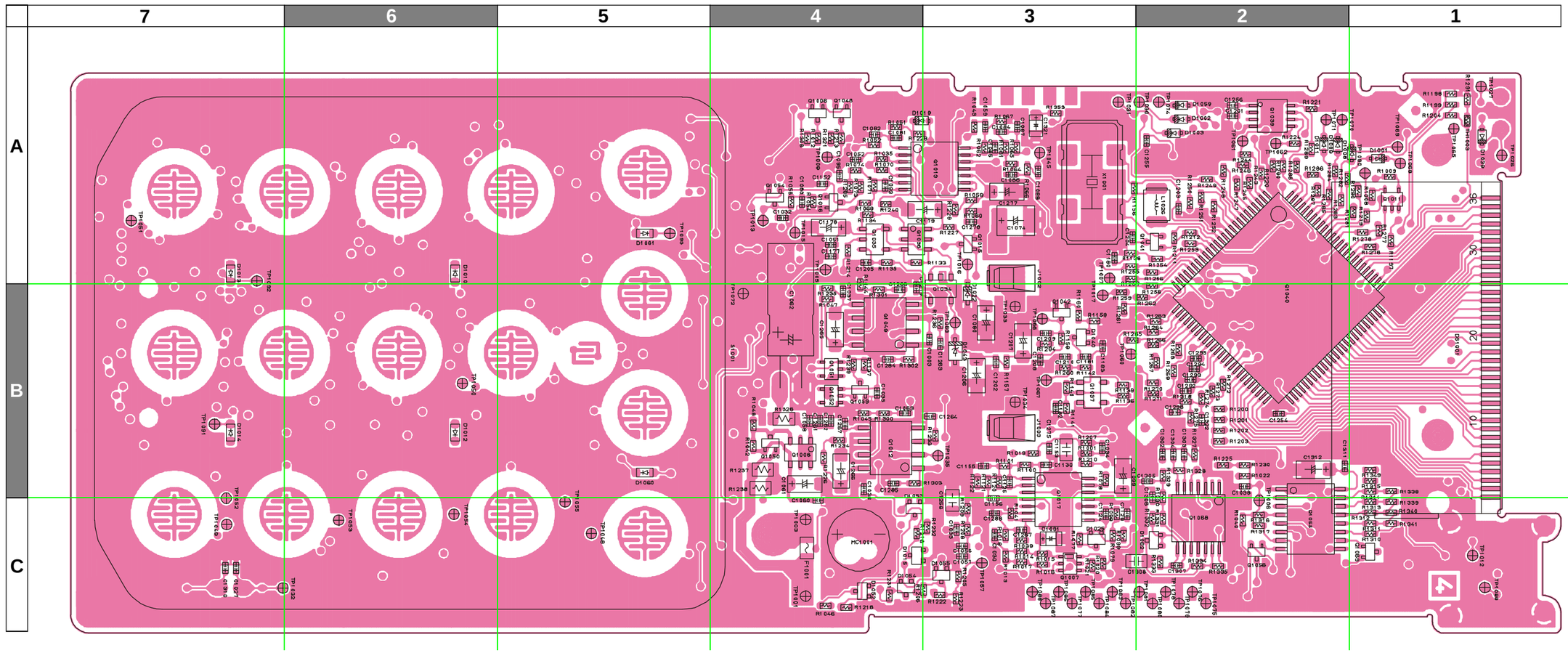
	A~BAND	C~BAND
C1001	68p	47p
C1005	15p	10p
C1006	22p	39p
C1013	12p	6p
C1014	5p	4p
C1019	18p	27p
C1020	33p	27p
C1041	15p	18p
C1044	22p	27p
C1067	12p	15p
C1068	5p	6p
C1070	27p	22p
C1094	18p	47p
C1116	47p	0.005u
C1122	18p	12p
C1151	22p	15p
C1168	22p	15p
C1273	47p	39p
C1289	6p	2p
L1008	0.15u	0.12u
L1010	0.15u	0.12u
L1011	0.15u	0.12u
L1020	L0020550	L0020401
L1021	L0022401	L0022376
Q1014	PF0313	PF0314
R1116	1.5K	680
R1305	47K	39K

NOTE:
RESISTOR VALUES ARE IN Ω, 1/16W (
CAPACITOR VALUES ARE IN F, 50V (
INDUCTOR VALUES ARE IN H (
UNLESS OTHERWISE NOTED.

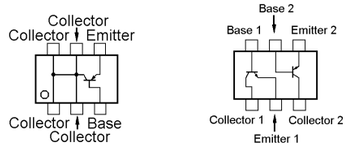
Main Unit (Lot. 10~)

Note:

Parts Layout

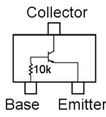


Side A



CPH6102 (AB)
(Q1008, 1036)

UMZ2N (Z2)
(Q1007)



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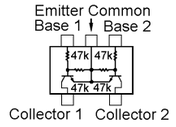
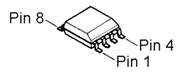
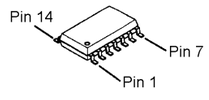
(Q1006, 1048, 1053, 1054)



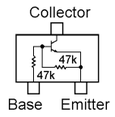
UMG2N (G2)
(Q1011)



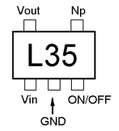
TDA2822D
(Q1012,1049)



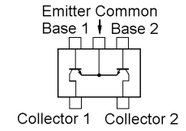
NJM2902V
(Q1013, 1017, 1068)



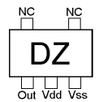
PDTC144EE (26)
(Q1015, 1016)



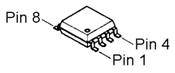
TK71635SCL (L35)
(Q1034)



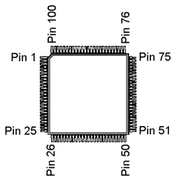
XN1501 (5R)
(Q1035)



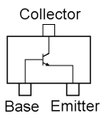
S-80735SN-DZ (DZ)
(Q1037)



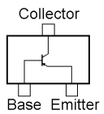
S-93C56AMFN
(Q1039)



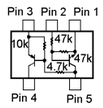
LC87F72C8A
(Q1040)



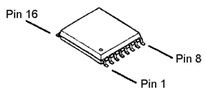
2SC4617 (BR)
(Q1041, 1042)



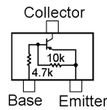
2SA1774 (FR)
(Q1050)



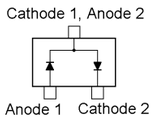
UMC5N (C5)
(Q1051, 1052)



BU2090FS
(Q1055)

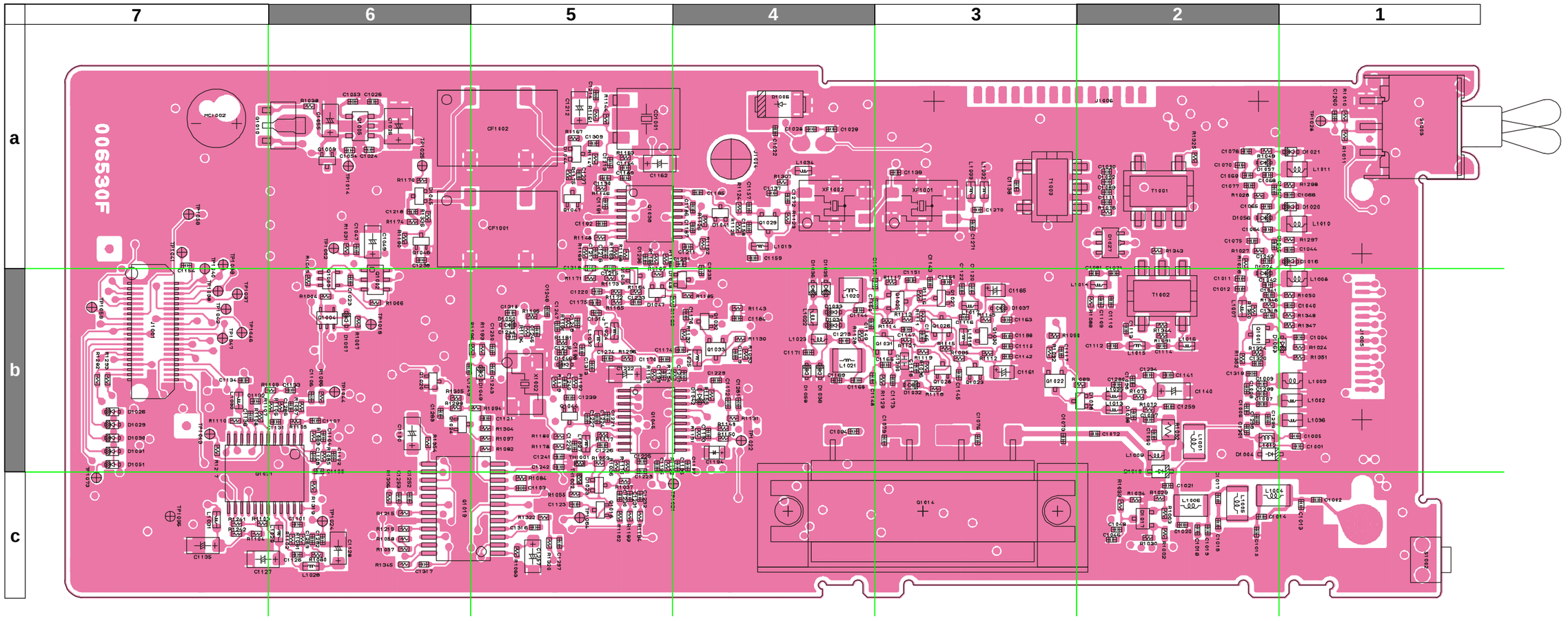


UN911F (60)
(Q1056, 1069)

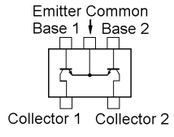


DA221 (K)
(D1015, 1025, 1040, 1052, 1053, 1054, 1055, 1062)

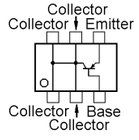
Main Unit (Lot. 10~)



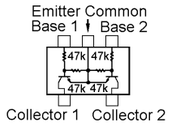
Side B



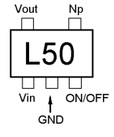
XP1501 (5R)
(Q1003)



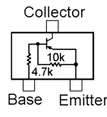
CPH6102 (AB)
(Q1002)



UMG2N (G2)
(Q1004)



TK71650SCL (L50)
(Q1005)



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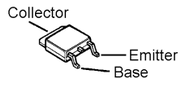
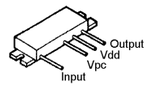
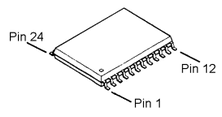
(Q1009, 1018)



2SD1767 (DC)
(Q1010)

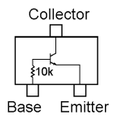


PF0314-04
(Q1014)

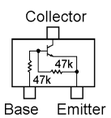


M62364FP
(Q1019)

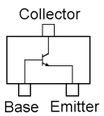
AK2345
(Q1021)



PDTC114TE
(Q1023, 1028)

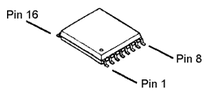


PDTC144EE (26)
(Q1020, 1024, 1027, 1032, 1046, 1047)



2SC4617 (BR)
(Q1030, 1043, 1044)

2SC5226 (R22)
(Q1001, 1022, 1025, 1026, 1029, 1031, 1033)



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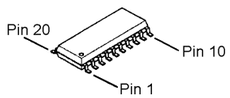
(Q1038)



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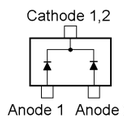
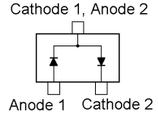
(Q1045)

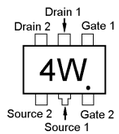


RB715F (3D)
(D1017)

MA132WK (MU)
(D1028, 1044, 1045)



DA221 (K)
(D 1023, 1041, 1047, 1048)



GN2011-Q (4W)
(D1027)

Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** MAIN-UNIT ***					
	PCB with Components (W/ VR-UNIT)					CP6966001	VERSION C			
	PCB with Components (W/ VR-UNIT)					CP6966003	VERSION A			
	Printed Circuit Board					FR006530D		1-		
	Printed Circuit Board					FR006530E		6-		
	Printed Circuit Board					FR006530F		10-		
C 1001	CHIP CAP.	56pF	50V	CH	GRM36CH560J50PT	K22178230		1	B	b1
C 1001	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		2-5	B	b1
C 1001	CHIP CAP.	68pF	50V	CH	GRM36CH680J50PT	K22178232	VERSION A	6-	B	b1
C 1001	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228	VERSION C	6-	B	b1
C 1002	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c1
C 1003	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	B3
C 1005	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-5	B	b1
C 1005	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216	VERSION A	6-	B	b1
C 1005	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212	VERSION C	6-	B	b1
C 1006	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1	B	b2
C 1006	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		2-5	B	b2
C 1006	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION A	6-	B	b2
C 1006	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226	VERSION C	6-	B	b2
C 1007	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	B	b2
C 1008	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1009	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	b2
C 1011	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1012	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b2
C 1013	CHIP CAP.	8pF	50V	CH	GRM36CH080D50PT	K22178210		1-5	B	c1
C 1013	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214	VERSION A	6-	B	c1
C 1013	CHIP CAP.	8pF	50V	CH	GRM36CH080D50PT	K22178210	VERSION C	6-	B	c1
C 1014	CHIP CAP.	4pF	50V	CH	GRM36CH040C50PT	K22178206		1-5	B	c2
C 1014	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207	VERSION A	6-	B	c2
C 1014	CHIP CAP.	4pF	50V	CH	GRM36CH040C50PT	K22178206	VERSION C	6-	B	c2
C 1015	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	c2
C 1016	CHIP CAP.	1pF	50V	CK	GRM36CK010C50PT	K22178202		1-	B	c2
C 1017	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	B	c2
C 1018	CHIP CAP.	1pF	50V	CK	GRM36CK010C50PT	K22178202		1-	B	c2
C 1019	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1-5	B	c2
C 1019	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION A	6-	B	c2
C 1019	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222	VERSION C	6-	B	c2
C 1020	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	c2
C 1020	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		5	B	c2
C 1020	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224	VERSION A	6-	B	c2
C 1020	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222	VERSION C	6-	B	c2
C 1022	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a4
C 1024	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a6
C 1025	CHIP TA.CAP.	10uF	16V		TEMSVB21C106M-8R	K78120025		1-	B	a6
C 1026	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a6
C 1027	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	C7
C 1028	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a4
C 1029	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a4
C 1030	CHIP CAP.	0.0015uF	50V	B	GRM36B152K50PT	K22178811		1-	A	C3
C 1031	CHIP TA.CAP.	3.3uF	10V		SKF-1A335M-RP	K78100051		1-	A	C3
C 1033	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	C3
C 1034	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	A	B3
C 1035	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	B4
C 1036	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	B4
C 1037	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1038	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B2
C 1040	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1	B	b1
C 1040	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		2-	B	b1
C 1041	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1	B	b2
C 1041	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		2-5	B	b2

Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
C 1041	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216	VERSION A	6-	B	b2
C 1041	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218	VERSION C	6-	B	b2
C 1042	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208		1	B	b2
C 1042	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208		2-	B	b2
C 1043	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1	B	a2
C 1043	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		2-	B	a2
C 1044	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1	B	a1
C 1044	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		2-5	B	a1
C 1044	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION A	6-	B	a1
C 1044	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222	VERSION C	6-	B	a1
C 1045	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1	B	a2
C 1045	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		2-	B	a2
C 1046	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c2
C 1047	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a6
C 1048	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c2
C 1049	CHIP TA.CAP.	10uF	6.3V		TEMSVA20J106M-8R	K78080046		1-	B	a6
C 1050	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1051	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A4
C 1052	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A4
C 1053	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a6
C 1054	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a6
C 1055	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	a6
C 1056	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	C3
C 1057	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	C3
C 1058	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1059	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A3
C 1060	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	C4
C 1061	CHIP TA.CAP.	10uF	10V		TEMSVA1A106M-8R	K78100028		1-	A	B4
C 1062	AL.ELECTRO.CAP.	100uF	10V		UVR1A101MDA6 100UF	K40109028		1-	A	B4
C 1063	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1064	CHIP CAP.	7pF	50V	CH	GRM36CH070D50PT	K22178209		1	B	a2
C 1064	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208		2-	B	a2
C 1065	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1	B	a2
C 1065	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		2-	B	a2
C 1066	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1	B	a1
C 1066	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		2-	B	a1
C 1067	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-5	B	a2
C 1067	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214	VERSION A	6-	B	a2
C 1067	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216	VERSION C	6-	B	a2
C 1068	CHIP CAP.	7pF	50V	CH	GRM36CH070D50PT	K22178209		1	B	a2
C 1068	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208		2-5	B	a2
C 1068	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207	VERSION A	6-	B	a2
C 1068	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208	VERSION C	6-	B	a2
C 1069	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	B	a2
C 1070	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1	B	a2
C 1070	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		2-5	B	a2
C 1070	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222	VERSION A	6-	B	a2
C 1070	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION C	6-	B	a2
C 1071	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1072	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1074	CHIP TA.CAP.	10uF	16V		TEMSVB21C106M-8R	K78120025		1-	A	A3
C 1076	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1077	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a2
C 1078	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a2
C 1079	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1080	CHIP TA.CAP.	1uF	16V		TMCSA1C105MTR	K78120023		1-	A	B3
C 1082	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	A4
C 1083	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A4
C 1084	CHIP CAP.	0.0027uF	50V	B	GRM36B272K50PT	K22178814		1-	A	A3
C 1085	CHIP CAP.	680pF	50V	B	GRM36B681K50PT	K22178807		1-	A	A3

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
C 1086	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A3
C 1087	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	A	A3
C 1088	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A3
C 1089	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a2
C 1090	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a2
C 1091	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b2
C 1092	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a2
C 1094	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-5	B	b4
C 1094	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION A	6-	B	b4
C 1094	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228	VERSION C	6-	B	b4
C 1095	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A4
C 1096	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1097	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1098	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b2
C 1099	CHIP TA.CAP.	1uF	16V		TMCSA1C105MTR	K78120023		1-	A	B3
C 1100	CHIP CAP.	1uF	10V	B	GRM40B105K10PT	K22100802		1-	B	b6
C 1100	CHIP TA.CAP.	10uF	6.3V		TESVSP0J106M-8R	K78080055		3-	B	b6
C 1100	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		7	B	b6
C 1100	CHIP TA.CAP.	10uF	6.3V		TEMSVA20J106M-8R	K78080046		8-	B	b6
C 1101	CHIP CAP.	68pF	50V	CH	GRM36CH680J50PT	K22178232		1-	B	c6
C 1102	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	b6
C 1103	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c5
C 1104	CHIP CAP.	0.0012uF	50V	B	GRM36B122K50PT	K22178810		1-	B	b6
C 1106	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b6
C 1108	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	b6
C 1109	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1110	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b2
C 1111	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a2
C 1114	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	B	b2
C 1115	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1116	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-5	B	b3
C 1116	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228	VERSION A	6-	B	b3
C 1116	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809	VERSION C	6-	B	b3
C 1117	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	b3
C 1118	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	b3
C 1119	CHIP CAP.	3pF	50V	CJ	GRM36CJ030C50PT	K22178205		1-	B	b4
C 1120	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	b3
C 1121	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	b5
C 1122	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214		1-5	B	b3
C 1122	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218	VERSION A	6-	B	b3
C 1122	CHIP CAP.	12pF	50V	CH	GRM36CH120J50PT	K22178214	VERSION C	6-	B	b3
C 1123	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c5
C 1124	CHIP CAP.	150pF	50V	CH	GRM36CH151J50PT	K22178240		1-	A	C3
C 1125	CHIP CAP.	330pF	50V	B	GRM36B331K50PT	K22178803		1-	A	B3
C 1126	CHIP CAP.	120pF	50V	CH	GRM36CH121J50PT	K22178238		1-	B	c6
C 1127	CHIP TA.CAP.	1uF	16V		TMCSA1C105MTR	K78120023		1-	B	c6
C 1128	CHIP TA.CAP.	1uF	16V		TMCSA1C105MTR	K78120023		1-	B	c6
C 1129	CHIP CAP.	0.022uF	16V	B	GRM36B223K16PT	K22128806		1-	A	C3
C 1130	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B3
C 1131	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	b6
C 1132	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	b7
C 1133	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	b6
C 1134	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	b7
C 1135	CHIP TA.CAP.	4.7uF	6.3V		TMCMA0J475MTR	K78080026		1-	B	c7
C 1138	CHIP CAP.	27pF	50V	CH	GRM36CH270J50PT	K22178222		1-	B	a3
C 1139	CHIP CAP.	7pF	50V	CH	GRM36CH070D50PT	K22178209		1-	B	a3
C 1140	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	b2
C 1141	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1142	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b3
C 1143	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3

Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
C 1144	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	B	b4
C 1145	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b3
C 1146	CHIP CAP.	2pF	50V	CK	GRM36CK020C50PT	K22178204		1-	B	b3
C 1147	CHIP CAP.	1pF	50V	CK	GRM36CK010C50PT	K22178202		1-	B	b3
C 1148	CHIP CAP.	2pF	50V	CK	GRM36CK020C50PT	K22178204		1-	B	b3
C 1150	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	b3
C 1151	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-5	B	b3
C 1151	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION A	6-	B	b3
C 1151	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216	VERSION C	6-	B	b3
C 1152	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	A4
C 1153	CHIP CAP.	1uF	10V	B	GRM40B105K10PT	K22100802		1-	A	B3
C 1154	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	a7
C 1155	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B3
C 1156	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B3
C 1157	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a4
C 1159	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a4
C 1160	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1161	CHIP TA.CAP.	10uF	6.3V		EEJK0JS106R	K78080079		1-	B	b3
C 1161	CHIP TA.CAP.	10uF	6.3V		EEJK0JS106R	K78080079		13-	B	b3
C 1162	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	a5
C 1163	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1164	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a5
C 1165	CHIP TA.CAP.	10uF	6.3V		EEJK0JS106R	K78080079		1-	B	b3
C 1165	CHIP TA.CAP.	10uF	6.3V		EEJK0JS106R	K78080079		13-	B	b3
C 1166	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	b3
C 1167	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208		1-	B	b3
C 1168	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-5	B	b4
C 1168	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220	VERSION A	6-	B	b4
C 1168	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216	VERSION C	6-	B	b4
C 1169	CHIP CAP.	1pF	50V	CK	GRM36CK010C50PT	K22178202		1-	B	b4
C 1170	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b5
C 1171	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b4
C 1172	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b4
C 1173	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	B	b3
C 1174	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b4
C 1175	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	B	b5
C 1176	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b4
C 1177	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	A4
C 1178	CHIP TA.CAP.	4.7uF	16V		TEMSVA1C475M-8R	K78120031		1-	A	A4
C 1179	CHIP TA.CAP.	4.7uF	6.3V		TMCMA0J475MTR	K78080026		1-	A	A3
C 1180	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	A3
C 1181	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B3
C 1182	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B3
C 1183	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B3
C 1184	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	b4
C 1185	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	a4
C 1186	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a4
C 1187	CHIP CAP.	82pF	50V	CH	GRM36CH820J50PT	K22178234		1-	B	a4
C 1188	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b3
C 1189	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	a5
C 1190	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	a5
C 1192	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a5
C 1193	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b4
C 1194	CHIP TA.CAP.	1.5uF	10V		TESVSP1A155M-8R	K78100050		1-	B	b4
C 1195	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1196	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b4
C 1197	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b4
C 1198	CHIP CAP.	33pF	50V	CH	GRM36CH330J50PT	K22178224		1-	B	b5
C 1199	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1200	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b4

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
C 1201	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A2
C 1202	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	B3
C 1203	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	A	A2
C 1204	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	A	A3
C 1205	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	A4
C 1206	CHIP TA.CAP.	4.7uF	6.3V		TMCMA0J475MTR	K78080026		1-	A	B3
C 1207	CHIP TA.CAP.	4.7uF	6.3V		TMCMA0J475MTR	K78080026		1-	A	B3
C 1208	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B3
C 1209	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	B3
C 1210	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	B3
C 1211	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	a4
C 1212	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	a5
C 1213	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a5
C 1214	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a5
C 1215	CHIP CAP.	0.0018uF	50V	B	GRM36B182K50PT	K22178812		1-	B	a5
C 1216	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	a5
C 1217	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	a5
C 1218	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a6
C 1219	CHIP CAP.	0.0056uF	25V	B	GRM36B562K50PT	K22148802		1-	B	a5
C 1220	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1221	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1222	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	b5
C 1223	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c5
C 1224	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1225	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1226	CHIP CAP.	56pF	50V	CH	GRM36CH560J50PT	K22178230		1-	B	b5
C 1227	CHIP CAP.	120pF	50V	CH	GRM36CH121J50PT	K22178238		1-	B	b5
C 1228	CHIP CAP.	68pF	50V	CH	GRM36CH680J50PT	K22178232		1-	B	b5
C 1229	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	b4
C 1230	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	c5
C 1231	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	c5
C 1232	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	c5
C 1233	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	b5
C 1234	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b2
C 1235	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b4
C 1236	CHIP CAP.	560pF	50V	B	GRM36B561K50PT	K22178806		1-	B	a5
C 1237	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a5
C 1238	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a6
C 1239	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-	B	b5
C 1240	CHIP CAP.	7pF	50V	CH	GRM36CH070D50PT	K22178209		1-	B	b5
C 1241	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b5
C 1242	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1243	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228		1-	B	b5
C 1244	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	B	b5
C 1245	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1246	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b5
C 1247	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	b5
C 1248	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b5
C 1249	CHIP CAP.	3pF	50V	CJ	GRM36CJ030C50PT	K22178205		1-	B	b5
C 1250	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b5
C 1250	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		3-	B	b5
C 1251	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a4
C 1252	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	c6
C 1253	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c6
C 1254	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B2
C 1255	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A2
C 1256	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	A2
C 1257	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	B	c5
C 1258	CHIP CAP.	1uF	10V	B	GRM40B105K10PT	K22100802		1-	A	C3
C 1259	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b2

Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
C 1260	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	a1
C 1261	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B4
C 1262	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1263	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B3
C 1264	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B3
C 1265	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	A	B4
C 1266	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	A	B4
C 1267	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1268	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1269	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c6
C 1270	CHIP CAP.	22pF	50V	CH	GRM36CH220J50PT	K22178220		1-	B	a3
C 1272	CHIP CAP.	10pF	50V	CH	GRM36CH100D50PT	K22178212		1-	B	a4
C 1273	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226		1-5	B	b4
C 1273	CHIP CAP.	47pF	50V	CH	GRM36CH470J50PT	K22178228	VERSION A	6-	B	b4
C 1273	CHIP CAP.	39pF	50V	CH	GRM36CH390J50PT	K22178226	VERSION C	6-	B	b4
C 1274	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b5
C 1275	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B3
C 1276	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	B	b5
C 1277	CHIP TA.CAP.	4.7uF	6.3V		TMCMA0J475MTR	K78080026		1-	A	A3
C 1278	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	A3
C 1279	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B4
C 1280	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1282	CHIP CAP.	0.0047uF	25V	B	GRM36B472K25PT	K22148830		1-	B	c6
C 1283	CHIP CAP.	0.047uF	10V	B	GRM36B473K10PT	K22108801		1-	B	b6
C 1284	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1285	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B4
C 1287	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	A	C3
C 1289	CHIP CAP.	2pF	50V	CK	GRM36CK020C50PT	K22178204		2-5	B	b2
C 1289	CHIP CAP.	6pF	50V	CH	GRM36CH060D50PT	K22178208	VERSION A	6-	B	b2
C 1289	CHIP CAP.	2pF	50V	CK	GRM36CK020C50PT	K22178204	VERSION C	6-	B	b2
C 1292	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	B2
C 1293	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	B2
C 1294	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	B2
C 1295	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	B2
C 1296	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B2
C 1297	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	c5
C 1298	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1299	CHIP CAP.	120pF	50V	CH	GRM36CH121J50PT	K22178238		1-	B	b2
C 1302	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B2
C 1303	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B2
C 1304	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B2
C 1305	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B2
C 1306	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	B2
C 1307	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	C2
C 1308	CHIP CAP.	1uF	10V	B	GRM40B105K10PT	K22100802		1-	A	C2
C 1309	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	a5
C 1310	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	C7
C 1311	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B2
C 1312	CHIP TA.CAP.	10uF	6.3V		TEMSVA0J106M-8R	K78080027		1-	A	B2
C 1313	CHIP CAP.	15pF	50V	CH	GRM36CH150J50PT	K22178216		1-	B	b5
C 1314	CHIP CAP.	5pF	50V	CH	GRM36CH050C50PT	K22178207		1-	B	b5
C 1315	CHIP CAP.	3pF	50V	CJ	GRM36CJ030C50PT	K22178205		1	B	b5
C 1316	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c5
C 1317	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	B	c6
C 1318	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1319	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1320	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	B	b2
C 1322	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	B2
CD1001	CERAMIC DISC				CDBC450CX24-TC	H7901340		1-	B	a5
CF1001	CERAMIC FILTER				PBFC450R15DR	H3900527		1-	B	a5

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
CF1002	CERAMIC FILTER				PBFC450R9DR	H3900528		1-	B	a5
D 1001	DIODE				MA2S111-(TX)	G2070614		1-	A	A1
D 1002	DIODE				MA2S111-(TX)	G2070614		1-	A	A2
D 1003	DIODE				MA2S111-(TX)	G2070614		1-	A	A2
D 1004	DIODE				HSU277TRF	G2070118		1-	B	b2
D 1006	DIODE				PTZ TE25 15A	G2070692		1-	B	a4
D 1007	DIODE				MA2S111-(TX)	G2070614		1-	B	b6
D 1008	DIODE				MA2S111-(TX)	G2070614		1-	A	A1
D 1009	DIODE				MA2S111-(TX)	G2070614		1-	A	A2
D 1010	LED				LNJ808K8SRA	G2070790		1-	A	A6
D 1011	DIODE				MA2S111-(TX)	G2070614		1-	A	A2
D 1012	LED				LNJ808K8SRA	G2070790		1-	A	B6
D 1013	LED				LNJ808K8SRA	G2070790		1-	A	A7
D 1014	LED				LNJ808K8SRA	G2070790		1-	A	B7
D 1015	DIODE				DA221 TL	G2070178		1-	A	C4
D 1016	DIODE				HVC350B-TRF	G2070596		1-	B	a1
D 1017	DIODE				RB715F T106	G2070752		1-	B	c2
D 1018	DIODE				HSU277TRF	G2070118		1-	B	c2
D 1019	DIODE				MA2S111-(TX)	G2070614		1-	A	A3
D 1020	DIODE				HVC350B-TRF	G2070596		1-	B	a1
D 1021	DIODE				HVC350B-TRF	G2070596		1-	B	a1
D 1022	DIODE				RD6.8UMB2-T1B	G2070438		1-	A	B3
D 1023	DIODE				DA221 TL	G2070178		1-	B	c5
D 1024	DIODE				HVC350B-TRF	G2070596		1-	B	b2
D 1025	DIODE				DA221 TL	G2070178		1-	A	C3
D 1026	DIODE				MA2S111-(TX)	G2070614		1-	B	b7
D 1027	IC				GN2011-Q(TX)	G1092183		1-	B	a2
D 1028	DIODE				MA132WK-(TX)	G2070776		1-	B	b2
D 1029	DIODE				MA2S111-(TX)	G2070614		1-	B	b7
D 1030	DIODE				MA2S111-(TX)	G2070614		1-	B	b7
D 1031	DIODE				MA2S111-(TX)	G2070614		1-	B	b7
D 1032	DIODE				1SV286(TPL3)	G2070610		1-	B	b3
D 1033	DIODE				HVC350B-TRF	G2070596		1-	B	b4
D 1034	DIODE				HVC350B-TRF	G2070596		1-	B	b4
D 1035	DIODE				HVC350B-TRF	G2070596		1-	B	b4
D 1036	DIODE				HVC350B-TRF	G2070596		1-	B	b4
D 1037	DIODE				MA2S111-(TX)	G2070614		1-	B	b3
D 1038	DIODE				HVC350B-TRF	G2070596		1-	B	b4
D 1039	DIODE				MA2S111-(TX)	G2070614		1-	A	A1
D 1040	DIODE				DA221 TL	G2070178		1-	A	B3
D 1041	DIODE				DA221 TL	G2070178		1-	B	a4
D 1042	DIODE				MA2S111-(TX)	G2070614		1-	B	b4
D 1043	DIODE				HZU4ALL-TR	G2070428		1-	A	B3
D 1044	DIODE				MA132WK-(TX)	G2070776		1-	B	a5
D 1045	DIODE				MA132WK-(TX)	G2070776		1-	B	a6
D 1046	DIODE				HVC350B-TRF	G2070596		1-	B	b5
D 1047	DIODE				DA221 TL	G2070178		1-	B	b5
D 1048	DIODE				DA221 TL	G2070178		1-	B	b4
D 1049	DIODE				HVC350B-TRF	G2070596		1-	B	b5
D 1050	DIODE				HVC350B-TRF	G2070596		1-	B	b5
D 1051	DIODE				MA2S111-(TX)	G2070614		1-	B	b7
D 1052	DIODE				DA221 TL	G2070178		1-	A	C4
D 1053	DIODE				DA221 TL	G2070178		1-	A	C4
D 1054	DIODE				DA221 TL	G2070178		1-	A	C4
D 1055	DIODE				DA221 TL	G2070178		1-	A	C3
D 1056	DIODE				HVC350B-TRF	G2070596		1-	B	a2
D 1057	DIODE				HVC350B-TRF	G2070596		1-	B	a2
D 1058	DIODE				HVC350B-TRF	G2070596		1-	B	b4
D 1059	DIODE				MA2S111-(TX)	G2070614		1-	A	A2
D 1060	LED				LNJ808K8SRA	G2070790		1-	A	B5

Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
D 1061	LED				LNJ808K8SRA	G2070790		1-	A	A5
D 1062	DIODE				DA221 TL	G2070178		1-	A	C2
D 1063	DIODE				MA2S111-(TX)	G2070614		1-	B	b1
DS1001	LCD				TA00171	G6090144		1-	A	B1
F 1001	CHIP FUSE	3.15A			KAB-2402-322NA31	Q0000087		1-	A	C4
J 1001	CONNECTOR				AXK6S40535P	P0091209		1-	B	b7
J 1002	SHIELD FINGER				3525 3100103	S5000226		1-	A	A3
J 1003	SHIELD FINGER				3525 3100103	S5000226		1-	A	B3
J 1004	SPRING CONNECTOR					RA0120500		1-	B	a4
L 1001	COIL	0.047uH			AS030821-47NK	L0022588		1-	B	b2
L 1002	M.RFC	0.082uH			HK2125 82NK-T	L1690388		1-	B	b1
L 1003	CHIP COIL	0.022uH			LQN21A22NJ04	L1690613		1-	B	b1
L 1004	COIL	0.047uH			AS030821-47NK	L0022588		1-	B	c2
L 1005	COIL	0.047uH			AS030821-47NK	L0022588		1-	B	c2
L 1006	COIL	0.047uH			AS030821-47NK	L0022588		1-	B	c2
L 1007	M.RFC	6.8uH			LK1608 6R8K-T	L1690632		1-	B	b2
L 1008	CHIP COIL	0.12uH			LQN21AR12J04	L1690621		1-5	B	b1
L 1008	CHIP COIL	0.15uH			LQN21AR15J04	L1690622	VERSION A	6-	B	b1
L 1008	CHIP COIL	0.12uH			LQN21AR12J04	L1690621	VERSION C	6-	B	b1
L 1009	M.RFC	0.22uH		5%	C1608CA-R22J	L1691068		1-	B	b2
L 1010	CHIP COIL	0.12uH			LQN21AR12J04	L1690621		1-5	B	a1
L 1010	CHIP COIL	0.15uH			LQN21AR15J04	L1690622	VERSION A	6-	B	a1
L 1010	CHIP COIL	0.12uH			LQN21AR12J04	L1690621	VERSION C	6-	B	a1
L 1011	CHIP COIL	0.12uH			LQN21AR12J04	L1690621		1-5	B	a1
L 1011	CHIP COIL	0.15uH			LQN21AR15J04	L1690622	VERSION A	6-	B	a1
L 1011	CHIP COIL	0.12uH			LQN21AR12J04	L1690621	VERSION C	6-	B	a1
L 1012	M.RFC	0.047uH		2%	C1608CA-47NG	L1691040		1-	B	b2
L 1013	M.RFC	0.056uH			HK1608 56NJ-T	L1690525		1-	B	b2
L 1014	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	b2
L 1015	M.RFC	0.1uH			LK1608 R10K-T	L1690407		1-	B	b2
L 1016	M.RFC	0.1uH			LK1608 R10K-T	L1690407		1-	B	b2
L 1017	M.RFC	0.082uH			HK1608 82NJ-T	L1690527		1-	B	b3
L 1018	M.RFC	0.22uH			HK1608 R22J-T	L1690940		1-	B	b3
L 1019	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	a4
L 1020	COIL				E2 0.25-1.9-6.5T-L	L0022401		1-5	B	b4
L 1020	COIL				E2 0.25-1.9-8T-L	L0022550	VERSION A	6-	B	b4
L 1020	COIL				E2 0.25-1.9-6.5T-L	L0022401	VERSION C	6-	B	b4
L 1021	COIL				E2 0.3-1.7-8T-L	L0022376		1-5	B	b4
L 1021	COIL				E2 0.25-1.9-6.5T-L	L0022401	VERSION A	6-	B	b4
L 1021	COIL				E2 0.3-1.7-8T-L	L0022376	VERSION C	6-	B	b4
L 1022	M.RFC	0.22uH		5%	C1608CA-R22J	L1691068		1-	B	b4
L 1023	M.RFC	0.22uH		5%	C1608CA-R22J	L1691068		1-	B	b4
L 1024	M.RFC	0.056uH			HK1608 56NJ-T	L1690525		1-	B	b5
L 1025	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	b4
L 1026	M.RFC	100uH			FLC32T-101J	L1690227		1-	A	A2
L 1027	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	b5
L 1028	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	c6
L 1029	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	c6
L 1030	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	b7
L 1031	M.RFC	1uH			LK1608 1R0K-T	L1690687		1-	B	c7
L 1032	M.RFC	6.8uH			LK1608 6R8K-T	L1690632		1-	B	a3
L 1033	M.RFC	3.3uH			LK1608 3R3K-T	L1690686		1-	B	a3
L 1034	M.RFC	6.8uH			LK1608 6R8K-T	L1690632		1-	B	a4
L 1035	M.RFC	0.33uH			LK1608 R33K-T	L1690412		1-	B	b2
L 1036	M.RFC	0.47uH			LK2125 R47K-T	L1690315		1-	B	b1
L 1037	M.RFC	0.056uH			HK1608 56NJ-T	L1690525		1-	B	b5
MC1001	MIC. ELEMENT				EM-140	M3290032		1-	A	C4
MC1002	MIC. ELEMENT				EM-140	M3290032		1-	B	a7
Q 1001	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	b2
Q 1002	TRANSISTOR				CPH6102-TL	G3070223		1-	B	b6

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
Q 1003	TRANSISTOR				XP1501-(TX)	G3070143		1-	B	b6
Q 1004	TRANSISTOR				UMG2N TR	G3070088		1-	B	b6
Q 1005	IC				TK71650SCL	G1093136		1-	B	a6
Q 1006	TRANSISTOR				PDTC114TE	G3070238		1-	A	A4
Q 1007	TRANSISTOR				UMZ2N TR	G3070117		1-	A	C3
Q 1008	TRANSISTOR				CPH6102-TL	G3070223		1-	A	B4
Q 1009	TRANSISTOR				UN911F-(TX)	G3070150		1-	B	a6
Q 1010	TRANSISTOR				2SD1767 T100 Q	G3417677Q		1-	B	a6
Q 1011	TRANSISTOR				UMG2N TR	G3070088		1-	A	A1
Q 1012	IC				TDA2822D013TR	G1091542		1-	A	B4
Q 1013	IC				NJM2902V-TE1	G1091679		1-	A	A3
Q 1014	IC				PF0314-04	G1092850		1-5	B	c3
Q 1014	IC				PF0313-04	G1092949	VERSION A	6-	B	c3
Q 1014	IC				PF0314-04	G1092850	VERSION C	6-	B	c3
Q 1015	TRANSISTOR				PDTC144EE	G3070244		1-	A	A3
Q 1016	TRANSISTOR				PDTC144EE	G3070244		1-	A	A4
Q 1017	IC				NJM2902V-TE1	G1091679		1-	A	B3
Q 1018	TRANSISTOR				UN911F-(TX)	G3070150		1-	B	c5
Q 1019	IC				M62364FP 600D	G1093033		1-	B	c6
Q 1020	TRANSISTOR				PDTC144EE	G3070244		1-	B	b6
Q 1021	IC				AK2345(TAPE)	G1093184		1-	B	c6
Q 1022	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	b3
Q 1023	TRANSISTOR				PDTC114TE	G3070238		1-	B	b3
Q 1024	TRANSISTOR				PDTC144EE	G3070244		1-	B	b6
Q 1025	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	b3
Q 1026	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	b3
Q 1027	TRANSISTOR				PDTC144EE	G3070244		1-	B	b3
Q 1028	TRANSISTOR				PDTC114TE	G3070238		1-	B	b3
Q 1029	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	a4
Q 1030	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	b3
Q 1031	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	b3
Q 1032	TRANSISTOR				PDTC144EE	G3070244		1-	B	b4
Q 1033	TRANSISTOR				2SC5226-4-TL	G3352268D		1-	B	b4
Q 1034	IC				TK71635SCL	G1093135		1-	A	B3
Q 1035	TRANSISTOR				XN1501-(TX)	G3070149		1-	A	A4
Q 1036	TRANSISTOR				CPH6102-TL	G3070223		1-	A	A4
Q 1037	IC				S-80735SN-DZ-T1	G1091876		1-	A	B3
Q 1037	IC				S-80835CNMC-B8U-T2	G1093606		14-	A	B3
Q 1038	IC				TA31136FN(EL)	G1091605		1-	B	a5
Q 1039	IC				S-93C56AMFN-TB	G1093348		1-	A	A2
Q 1040	IC				LC87F72C8A-F5N19(FLASH)	G1093185		1-	A	B2
Q 1041	TRANSISTOR				2SC4617 TL R	G3346178R		1-	A	A2
Q 1042	TRANSISTOR				2SC4617 TL R	G3346178R		1-	A	B3
Q 1043	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	b5
Q 1044	TRANSISTOR				2SC4617 TL R	G3346178R		1-	B	b5
Q 1045	IC				SA7025DK	G1093014		1-	B	b5
Q 1046	TRANSISTOR				PDTC144EE	G3070244		1-	B	a6
Q 1047	TRANSISTOR				PDTC144EE	G3070244		1-	B	a5
Q 1048	TRANSISTOR				PDTC114TE	G3070238		1-	A	A4
Q 1049	IC				TDA2822D013TR	G1091542		1-	A	B4
Q 1050	TRANSISTOR				2SA1774 TL R	G3117748R		1-	A	B4
Q 1051	TRANSISTOR				UMC5N TR	G3070137		1-	A	B4
Q 1052	TRANSISTOR				UMC5N TR	G3070137		1-	A	B4
Q 1053	TRANSISTOR				PDTC114TE	G3070238		1-	A	B4
Q 1054	TRANSISTOR				PDTC114TE	G3070238		1-	A	A4
Q 1055	IC				BU2090FS-E1	G1092187		1-	A	C2
Q 1056	TRANSISTOR				UN911F-(TX)	G3070150		1-	A	C2
Q 1068	IC				NJM2902V-TE1	G1091679		1-	A	C2
Q 1069	TRANSISTOR				UN911F-(TX)	G3070150		1-	A	C1
R 1001	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	B3

Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
R 1002	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c2
R 1003	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	c2
R 1004	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b6
R 1005	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b6
R 1006	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b6
R 1007	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b6
R 1008	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1009	CHIP RES.	270	1/16W	5%	RMC1/16S 271JTH	J24189018		1-	A	A1
R 1010	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	a1
R 1011	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	a1
R 1012	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	A	A4
R 1013	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	C3
R 1014	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	A	C3
R 1015	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	A	C3
R 1016	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	C3
R 1017	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	C3
R 1018	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	C3
R 1019	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	B3
R 1020	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	C3
R 1021	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C3
R 1022	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	B2
R 1024	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b1
R 1026	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	a2
R 1027	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	a2
R 1028	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	a2
R 1029	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	c2
R 1030	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	B	c2
R 1031	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	a6
R 1032	CHIP RES.	100	1/10W	5%	RMC1/10T 101J	J24205101		1-	B	b2
R 1033	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	c2
R 1034	CHIP RES.	18k	1/16W	5%	RMC1/16S 183JTH	J24189040		1-	B	c2
R 1035	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A4
R 1036	CHIP RES.	270k	1/16W	5%	RMC1/16S 274JTH	J24189054		1-	B	b5
R 1037	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	c5
R 1038	CHIP RES.	270	1/16W	5%	RMC1/16S 271JTH	J24189018		1-	B	a6
R 1039	CHIP RES.	1.5M	1/16W	5%	RMC1/16S 155JTH	J24189063		1-	A	C3
R 1040	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C2
R 1041	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C3
R 1042	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	B4
R 1043	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A3
R 1044	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1	A	A4
R 1044	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		2-	A	A4
R 1045	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	B4
R 1046	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C4
R 1047	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B4
R 1048	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	B4
R 1049	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	a2
R 1050	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	b1
R 1051	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	A	A4
R 1052	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	A	A4
R 1053	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b5
R 1055	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1-	B	c5
R 1056	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A4
R 1057	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	c6
R 1058	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c6
R 1059	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	A3
R 1060	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A3
R 1061	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	A3
R 1062	CHIP RES.	820k	1/16W	5%	RMC1/16S 824JTH	J24189060		1-	A	A3
R 1063	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c5

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
R 1064	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	A	A3
R 1065	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	A3
R 1066	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A3
R 1067	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A3
R 1069	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A4
R 1070	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	A4
R 1071	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	A4
R 1072	CHIP RES.	47	1/16W	5%	RMC1/16S 470JTH	J24189009		1-	B	b2
R 1073	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	A4
R 1074	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	A4
R 1075	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	b2
R 1076	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	a2
R 1077	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	C3
R 1078	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	B3
R 1079	CHIP RES.	2.2M	1/16W	5%	RMC1/16S 225JTH	J24189065		1-	A	C3
R 1080	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	c6
R 1081	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	c6
R 1082	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b5
R 1083	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	b6
R 1084	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	c5
R 1085	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	b6
R 1086	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b6
R 1087	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b6
R 1088	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b2
R 1089	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	b2
R 1090	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	b3
R 1092	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	b3
R 1093	CHIP RES.	18	1/16W	5%	RMC1/16S 180JTH	J24189004		1-	B	b4
R 1094	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b5
R 1095	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b3
R 1096	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b3
R 1097	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b5
R 1098	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	C3
R 1099	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	C3
R 1100	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	B3
R 1101	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	B3
R 1102	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	c6
R 1103	CHIP RES.	3.9k	1/16W	5%	RMC1/16S 392JTH	J24189032		1-	B	c6
R 1104	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	c7
R 1105	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	b6
R 1106	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	b6
R 1107	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b6
R 1108	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b7
R 1109	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b6
R 1110	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	b7
R 1111	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	b3
R 1112	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	b3
R 1113	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b3
R 1114	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	b3
R 1115	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	b3
R 1116	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-5	B	b3
R 1116	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027	VERSION A	6-	B	b3
R 1116	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023	VERSION C	6-	B	b3
R 1117	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1-	B	b3
R 1119	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	b3
R 1120	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	B3
R 1121	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	B3
R 1122	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	B3
R 1123	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	a4
R 1124	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019		1-	B	a4

Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
R 1125	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	a4
R 1126	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	a4
R 1127	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b3
R 1128	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	b4
R 1129	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1-	B	b3
R 1130	CHIP RES.	180k	1/16W	5%	RMC1/16S 184JTH	J24189052		1-	B	b4
R 1131	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b4
R 1132	CHIP RES.	220	1/16W	5%	RMC1/16S 221JTH	J24189017		1-	B	b4
R 1133	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A4
R 1134	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	A4
R 1135	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	A	A4
R 1136	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B3
R 1137	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	B4
R 1138	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	A3
R 1139	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B3
R 1140	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	B3
R 1141	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	B3
R 1142	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B3
R 1144	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	a5
R 1145	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	b3
R 1146	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	a5
R 1147	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	a5
R 1148	CHIP RES.	560k	1/16W	5%	RMC1/16S 564JTH	J24189058		1-	B	a5
R 1149	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b4
R 1150	CHIP RES.	68	1/16W	5%	RMC1/16S 680JTH	J24189011		1-	B	b4
R 1151	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	b4
R 1152	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	b5
R 1153	CHIP RES.	56k	1/16W	5%	RMC1/16S 563JTH	J24189046		1-	B	b5
R 1154	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1-9	B	b4
R 1154	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038	VERSION A	10-	B	b4
R 1154	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034	VERSION C	10-	B	b4
R 1155	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	b4
R 1156	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	A	A2
R 1157	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	A	B3
R 1158	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B3
R 1159	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	B3
R 1160	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	B3
R 1161	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	a5
R 1162	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	a4
R 1163	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	a5
R 1164	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	b5
R 1165	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	b5
R 1166	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	B	a5
R 1167	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	a5
R 1168	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	a5
R 1169	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	a5
R 1170	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	a6
R 1171	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023		1-	B	b5
R 1172	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	B	b5
R 1173	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b5
R 1174	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	a6
R 1175	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	a5
R 1176	CHIP RES.	22	1/16W	5%	RMC1/16S 220JTH	J24189005		1-	B	b5
R 1177	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	b5
R 1178	CHIP RES.	470	1/16W	5%	RMC1/16S 471JTH	J24189021		1-	B	b5
R 1179	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	B	b5
R 1180	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	b5
R 1181	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	b5
R 1182	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c5
R 1183	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	c5

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
R 1184	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c5
R 1185	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b4
R 1186	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	B	a5
R 1187	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	B	b5
R 1188	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	B	a5
R 1189	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	b4
R 1190	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	B	a6
R 1191	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b5
R 1192	CHIP RES.	6.8k	1/16W	5%	RMC1/16S 682JTH	J24189035		1-	B	b5
R 1193	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b5
R 1194	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	b5
R 1195	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b5
R 1196	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b5
R 1196	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		3-	B	b5
R 1197	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	A1
R 1198	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A1
R 1199	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A1
R 1200	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	B2
R 1201	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	B2
R 1202	CHIP RES.	20k	1/16W	0.5%	RR0510R-203-D	J24189150		1-	A	B2
R 1203	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	B2
R 1204	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A1
R 1205	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C3
R 1206	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	C3
R 1207	CHIP RES.	1.2k	1/16W	5%	RMC1/16S 122JTH	J24189026		1-	A	B3
R 1208	CHIP RES.	68k	1/16W	5%	RMC1/16S 683JTH	J24189047		1-	A	C3
R 1209	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	C3
R 1210	CHIP RES.	220k	1/16W	5%	RMC1/16S 224JTH	J24189053		1-	A	B3
R 1211	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	A2
R 1212	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A2
R 1213	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	A	A4
R 1214	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A4
R 1215	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	c6
R 1216	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C4
R 1217	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	B	b7
R 1218	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C4
R 1220	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A2
R 1221	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	A2
R 1222	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	C3
R 1223	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C3
R 1224	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A2
R 1225	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B2
R 1226	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B4
R 1228	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	A4
R 1229	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	A	A3
R 1230	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1-	A	B2
R 1231	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C4
R 1232	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	C3
R 1233	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	A	B3
R 1234	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B4
R 1235	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B4
R 1236	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	A	B3
R 1237	CHIP RES.	2.7	1/10W	5%	RMC1/10T 2R7J	J24205279		1-	A	B4
R 1238	CHIP RES.	2.7	1/10W	5%	RMC1/10T 2R7J	J24205279		1-	A	B4
R 1239	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	B4
R 1240	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	A4
R 1241	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	c7
R 1242	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	B	c7
R 1243	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1244	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2

Main Unit

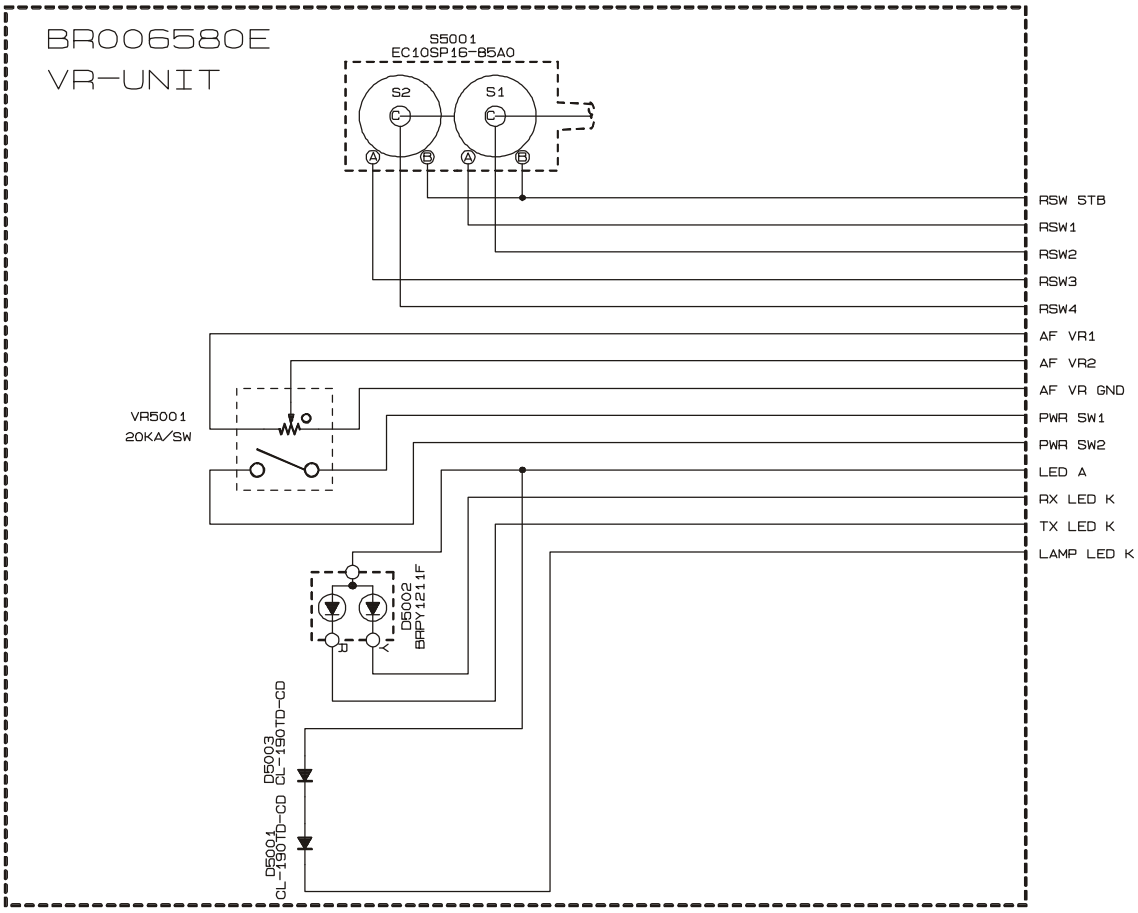
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
R 1245	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1246	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1247	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1248	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1249	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1250	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1251	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1252	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1253	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1254	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1255	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A3
R 1256	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1257	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A3
R 1258	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1259	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B3
R 1260	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B3
R 1261	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	B3
R 1262	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1263	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1264	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1265	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B3
R 1266	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1267	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1268	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1269	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1270	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1271	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B2
R 1272	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	B2
R 1273	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-	A	B2
R 1274	CHIP RES.	20k	1/16W	0.5%	RR0510R-203-D	J24189150		1-	A	B2
R 1275	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	B2
R 1276	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1277	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1278	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1279	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1280	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1281	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1282	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A1
R 1283	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1284	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1285	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1286	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1287	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1288	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1289	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1290	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	A2
R 1291	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	A1
R 1292	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b7
R 1293	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b7
R 1294	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	B3
R 1295	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	A	A4
R 1296	CHIP RES.	56	1/16W	5%	RMC1/16S 560JTH	J24189010		1-	B	b5
R 1297	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	a1
R 1298	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	B	a1
R 1299	CHIP RES.	27k	1/16W	5%	RMC1/16S 273JTH	J24189042		1-	B	b6
R 1300	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	B4
R 1301	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	B4
R 1302	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	A	B4
R 1303	CHIP RES.	4.7	1/16W	5%	RMC1/16S 4R7JTH	J24189066		1-	A	B4
R 1304	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	B	b5

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
R 1305	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044		1-5	B	b6
R 1305	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045	VERSION A	6-	B	b6
R 1305	CHIP RES.	39k	1/16W	5%	RMC1/16S 393JTH	J24189044	VERSION C	6-	B	b6
R 1306	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	B	c6
R 1307	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027		1-	B	a4
R 1308	CHIP RES.	33	1/16W	5%	RMC1/16S 330JTH	J24189007		1-	A	A4
R 1310	CHIP RES.	2.7k	1/16W	5%	RMC1/16S 272JTH	J24189030		1-	A	C1
R 1311	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	C1
R 1312	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C1
R 1313	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	C1
R 1314	CHIP RES.	1.5k	1/16W	5%	RMC1/16S 152JTH	J24189027		1-	A	B1
R 1315	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	B1
R 1316	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	C2
R 1317	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	C2
R 1318	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	B2
R 1319	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	B	c6
R 1320	CHIP RES.	270k	1/16W	5%	RMC1/16S 274JTH	J24189054		1-	B	c5
R 1321	CHIP RES.	100	1/16W	5%	RMC1/16S 101JTH	J24189013		1-	A	A4
R 1322	CHIP RES.	150k	1/16W	5%	RMC1/16S 154JTH	J24189051		1-	B	c5
R 1324	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	B	b2
R 1325	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	a2
R 1326	CHIP RES.	22	1/10W	5%	RMC1/10T 220J	J24205220		1-	A	B4
R 1327	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	B2
R 1328	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	A	B2
R 1329	CHIP RES.	560k	1/16W	5%	RMC1/16S 564JTH	J24189058		1-	A	B2
R 1330	CHIP RES.	560k	1/16W	5%	RMC1/16S 564JTH	J24189058		1-	A	B2
R 1331	CHIP RES.	560k	1/16W	5%	RMC1/16S 564JTH	J24189058		1-	A	C2
R 1332	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	A	C2
R 1333	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	C2
R 1334	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	C2
R 1336	CHIP RES.	12k	1/16W	5%	RMC1/16S 123JTH	J24189038		1-	B	a6
R 1338	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1-	A	B1
R 1339	CHIP RES.	3.3k	1/16W	5%	RMC1/16S 332JTH	J24189031		1-	A	C1
R 1340	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	C1
R 1341	CHIP RES.	4.7k	1/16W	5%	RMC1/16S 472JTH	J24189033		1-	A	C1
R 1343	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	a2
R 1344	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b2
R 1345	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	c6
R 1346	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	B	b2
R 1349	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	B1
R 1350	CHIP RES.	2.2k	1/16W	5%	RMC1/16S 222JTH	J24189029		1	B	b2
R 1352	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-9	B	b2
R 1352	CHIP RES.	330	1/16W	5%	RMC1/16S 331JTH	J24189019	VERSION A	10-	B	b2
R 1352	CHIP RES.	680	1/16W	5%	RMC1/16S 681JTH	J24189023	VERSION A	12-	B	b2
R 1352	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025	VERSION C	10-	B	b2
R 1353	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	A3
R 1354	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-2	B	b6
R 1354	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		6-	B	b6
R 1355	CHIP RES.	8.2k	1/16W	5%	RMC1/16S 822JTH	J24189036		1		
S 1002	TACT SWITCH				JPM1990-0302	N5090093		1-	B	c1
S 1003	TOGGLE SWITCH				ATE1E-6M3-14	N2090059		1-	B	a1
T 1001	BALUN TRANSFOMERS				B5F458DB-1414=P3	L0190256		1-	B	a2
T 1002	BALUN TRANSFOMERS				B5F458DB-1414=P3	L0190256		1-	B	b2
T 1003	BALUN TRANSFOMERS				B5F458PT-1415=P3	L0190257		1-	B	a3
TH1001	THERMISTOR				ERTJ0ER103J	G9090119		1-	B	b5
TH1002	THERMISTOR				ERTJ0ER103J	G9090119		1-	B	c5
TH1003	THERMISTOR				ERTJ0EV473J	G9090120		1-	A	A1
X 1001	XTAL SX-2204	3.6864MHz			3.6864MHZ	H0103249		1-	A	A3
X 1002	XTAL SX-2112	21.6MHz			21.6MHZ	H0103233		1-	B	b5
XF1001	XTAL FILTER				HDF0029 22.05MHZ	H1102336		1-	B	a3

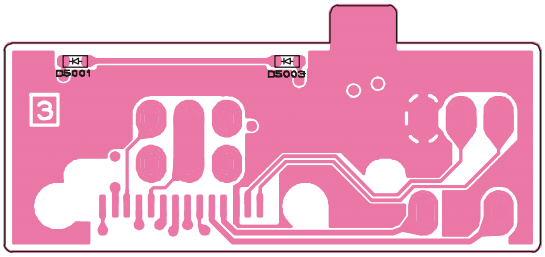
Main Unit

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
XF1002	XTAL FILTER				HDF0029 22.05MHZ	H1102336		1-	B	a4
XF1002	XTAL FILTER				HDF0029 22.05MHZ	H1102336		12-	B	a4
	HOLDER PLATE				(TGL)	RA0207700		1-		
	MIC HOLDER RUBBER					RA0140200		1-		
	SHIELD CASE VCO					RA0208100		1-		
	MIC HOLDER RUBBER				(F)	RA0207800		1-		
	HOLDER PLATE				(PM)	RA0106700		1-		
	LIGHT GUIDE					RA0296500		1-		
	BRACKET					RA0296600		1-		
	HOLDER PLATE				(LCD)	RA0296900		1-		
	RUBBER HOLDER				(+)	RA0298100		1-		
	HOLDER				(+)	RA0305100		1-		
	INTER CONNECTOR				(LCD)	RA0298200		1-		
	INTER CONNECTOR				(VOL)	RA0298300		1-		
	SHIELD CASE COVER				(MIXER)	RA0311400		1-		
	REFLECTOR SHEET				A	RA0316600		1-		
	REFLECTOR SHEET				B	RA0316700		1-		
	DIFFUSER SHEET					RA0317800		1-		

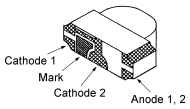
Circuit Diagram



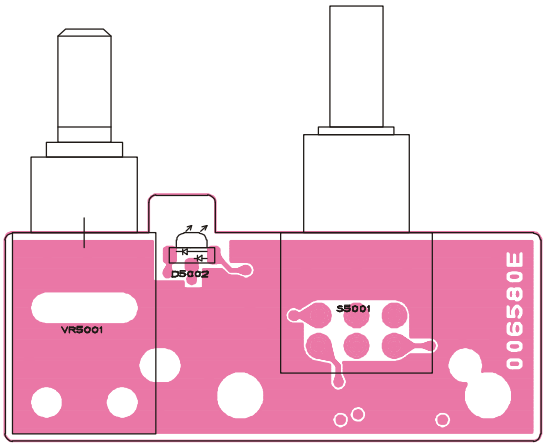
Parts Layout



Side A



BRPY1211F
(D5002)



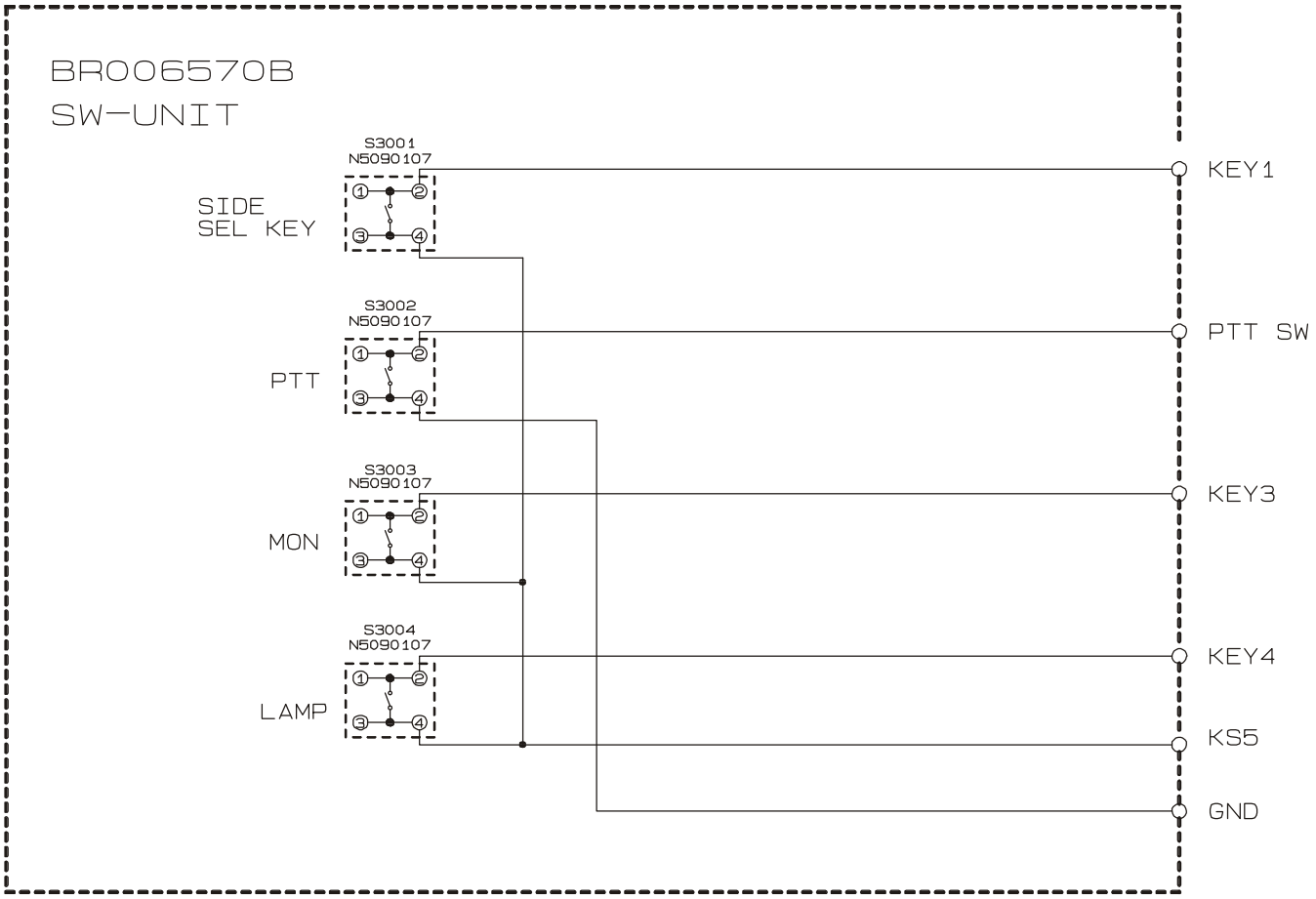
Side B

Parts List

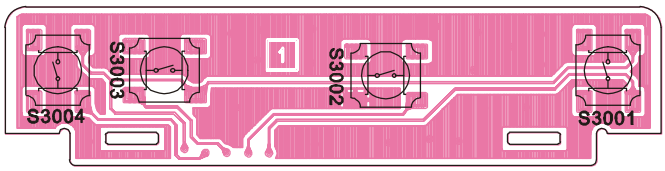
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** VR-UNIT ***					
	PCB with Components					CB1439001				
	Printed Circuit Board					FR006580E		1-		
D 5001	LED				FA1111C-TR	G2070836		1-	A	
D 5001	LED				CL-190TD-CD-T	G2070838		3-	A	
D 5002	LED				BRPY1211F-TR	G2070706		1-	B	
D 5003	LED				FA1111C-TR	G2070836		1-	A	
D 5003	LED				CL-190TD-CD-T	G2070838		3-	A	
S 5001	ROTARY SWITCH				EC10SP16-85A0	Q9000764		1-	B	
VR5001	POT.				TP96N989N 20KA/SW	J60800259		1-	B	

SW Unit

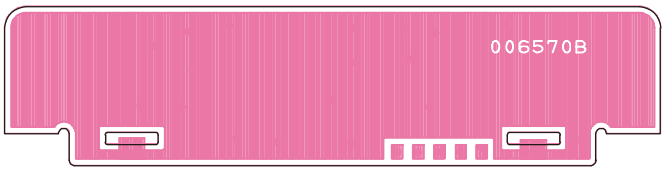
Circuit Diagram



Parts Layout



Side A

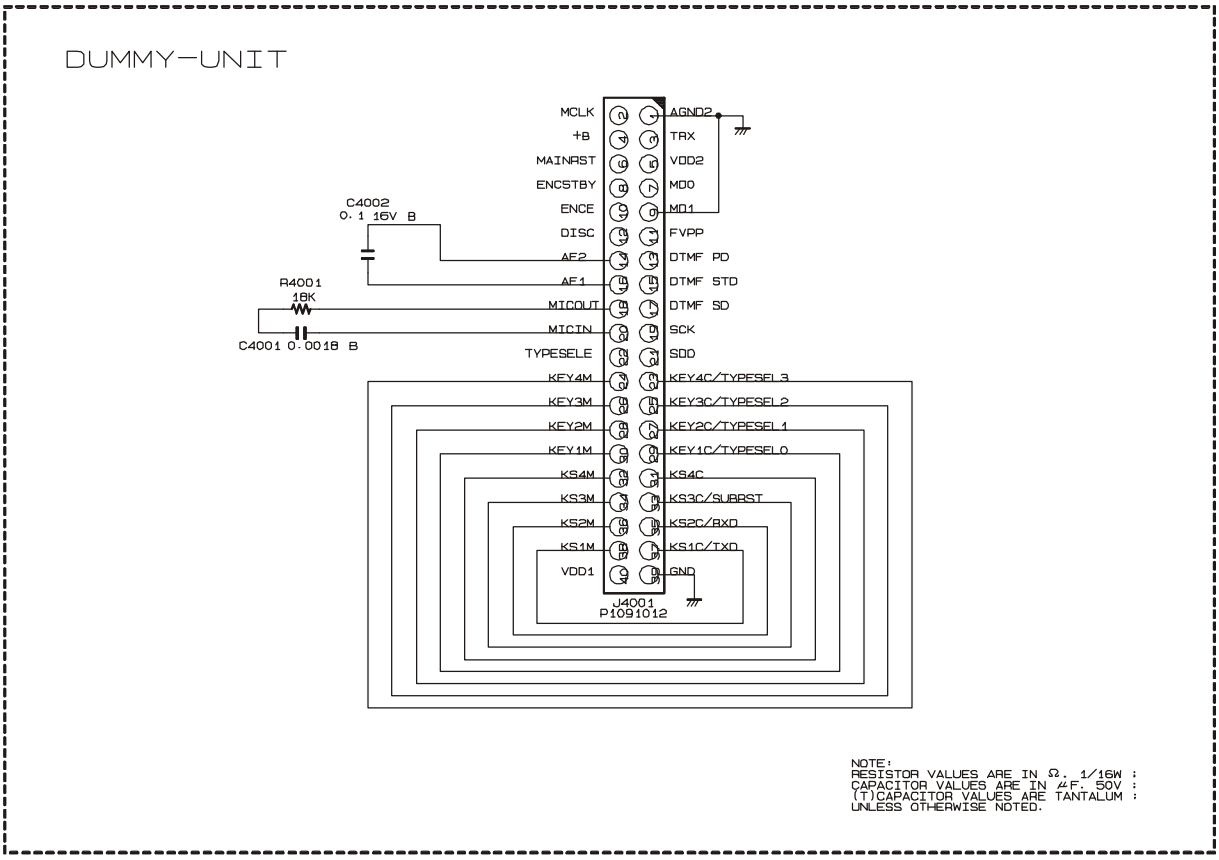


Side B

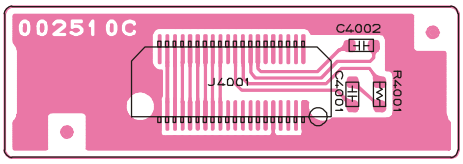
Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** SW-UNIT ***					
	PCB with Components					CB1437001				
	Printed Circuit Board					FR006570B		1-		
S 3001	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A	
S 3002	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A	
S 3003	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A	
S 3004	TACT SWITCH				SOP-114HST R66-5374	N5090107		1-	A	
	MYLAR SHEET				(PTT)	RA0316400		1-		

Circuit Diagram



Parts Layout



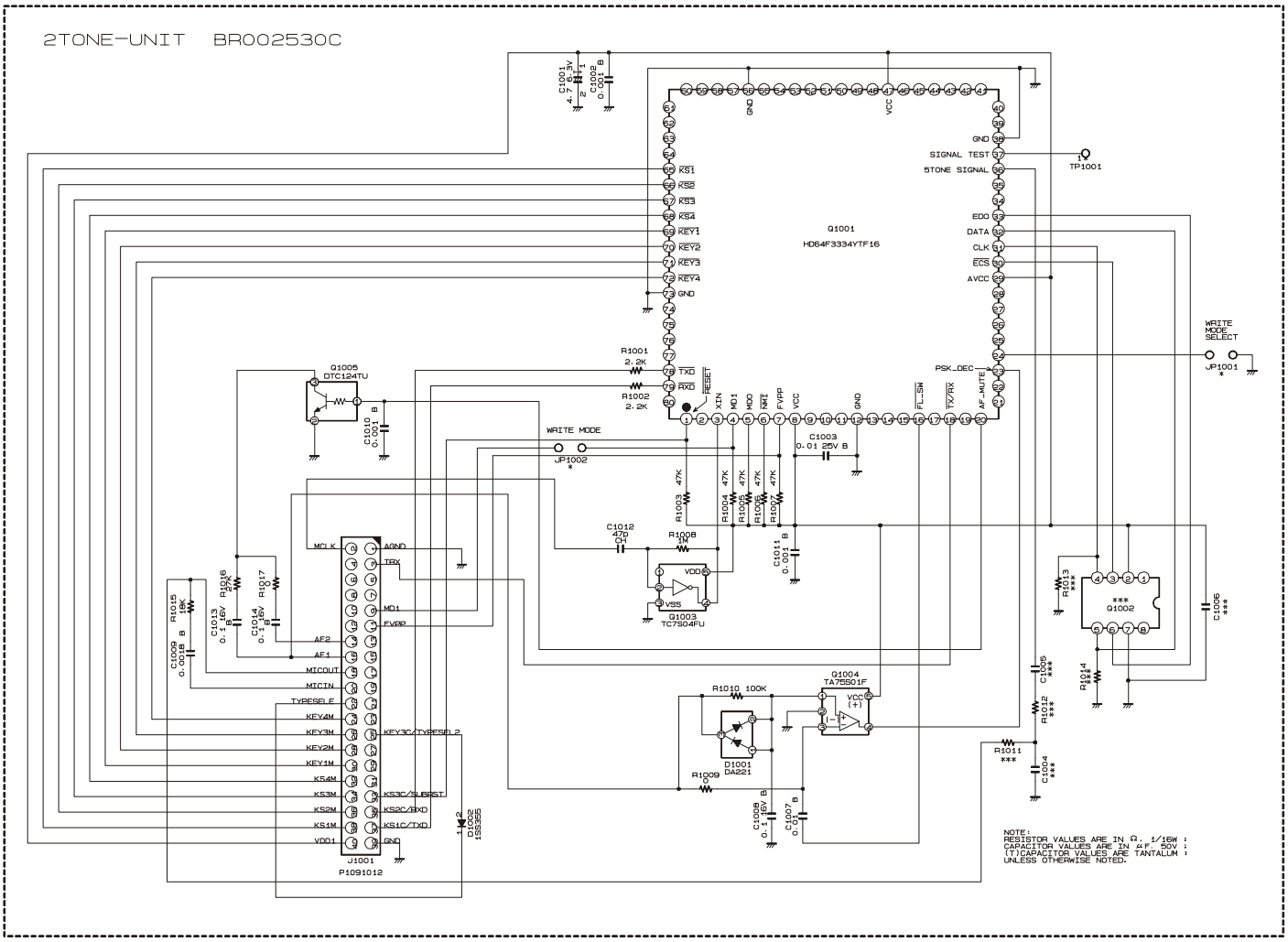
Component Side

Parts List

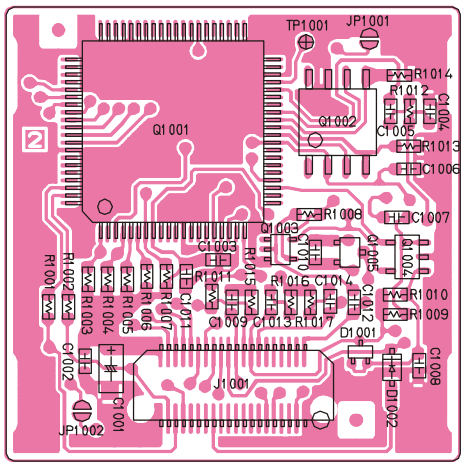
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
*** DUMMY-UNIT ***										
	PCB with Components					CB1438001				
	Printed Circuit Board					FR002510C		1-		
C 4001	CHIP CAP.	0.0018uF	50V	B	GRM39B182M50PT	K22174812		1-		
C 4002	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-		
J 4001	CONNECTOR				AXK5S40035P	P1091012		1-		
R 4001	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-		

F2D-8 2-Tone Decode Unit

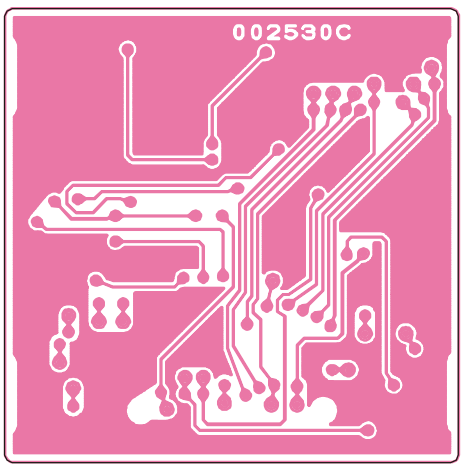
Circuit Diagram



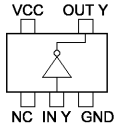
Parts Layout



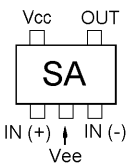
Side A



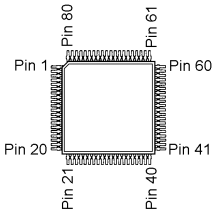
Side B



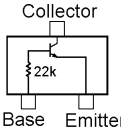
TC7S04FU (E5)
(Q1003)



TA75S01F (SA)
(Q1004)



HD64F3334YTF16
(Q1001)



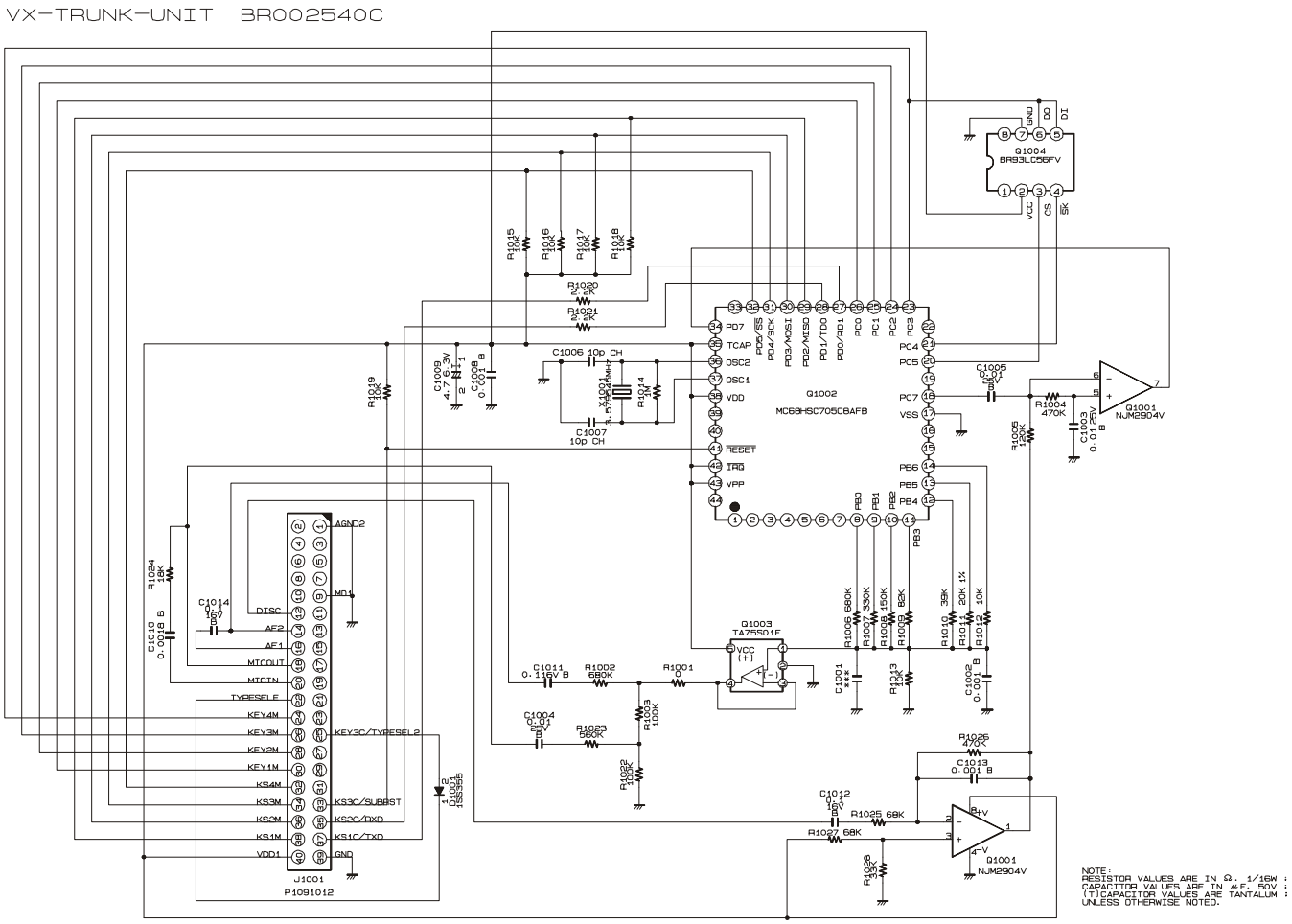
DTC124TU (05)
(Q1005)

Parts List

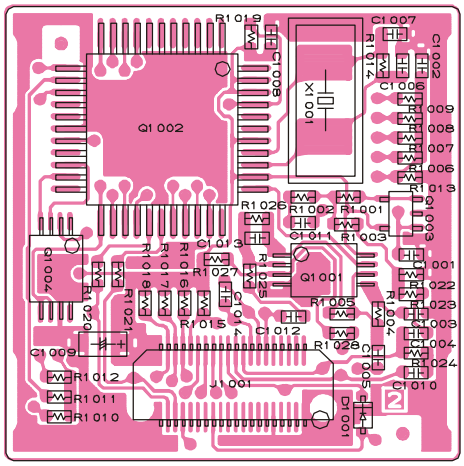
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** F2D-8 ***					
	Printed Circuit Board					FR002530C		1-		
C 1001	CHIP TA.CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-	A	
C 1002	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	
C 1003	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		1-	A	
C 1007	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
C 1007	CHIP CAP.	0.0015uF	50V	B	GRM39B152M50PT	K22174811		6-	A	
C 1007	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		18-	A	
C 1008	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
C 1009	CHIP CAP.	0.0018uF	50V	B	GRM39B182M50PT	K22174812		1-	A	
C 1010	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	
C 1011	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	
C 1012	CHIP CAP.	47pF	50V	CH	GRM39CH470J50PT	K22174227		1-	A	
C 1013	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
C 1014	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
D 1001	DIODE				DA221 TL	G2070178		1-	A	
D 1002	DIODE				1SS355 TE-17	G2070470		1-	A	
J 1001	CONNECTOR				AXK5S40035P	P1091012		1-	A	
Q 1001	IC				HD64F3334YTF16 R0226	G1092873		1-	A	
Q 1003	IC				TC7S04FU TE85R	G1091530		1-	A	
Q 1004	IC				TA75S01F TE85R	G1091593		1-	A	
Q 1005	TRANSISTOR				DTC124TU T106	G3070065		1-	A	
R 1001	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	
R 1002	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	
R 1003	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	
R 1004	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	
R 1005	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	
R 1006	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	
R 1007	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	
R 1008	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-	A	
R 1009	CHIP RES.	4.7k	1/16W	5%	RMC1/16 472JATP	J24185472		1-	A	
R 1009	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		6-	A	
R 1010	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	
R 1015	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-	A	
R 1016	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	
R 1016	CHIP RES.	27k	1/16W	5%	RMC1/16 273JATP	J24185273		6-	A	
R 1017	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	
	BLIND SHEET					RA0109300		1-		

VTP-50 VX-Trunk Unit

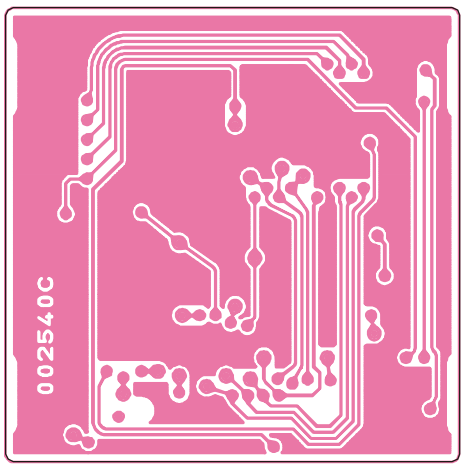
Circuit Diagram



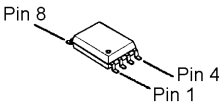
Parts Layout



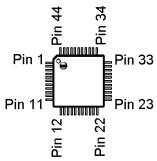
Side A



Side B



NJM2904V
(Q1001)



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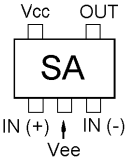
(Q1002)



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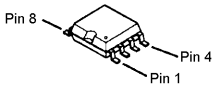
(Q1003)



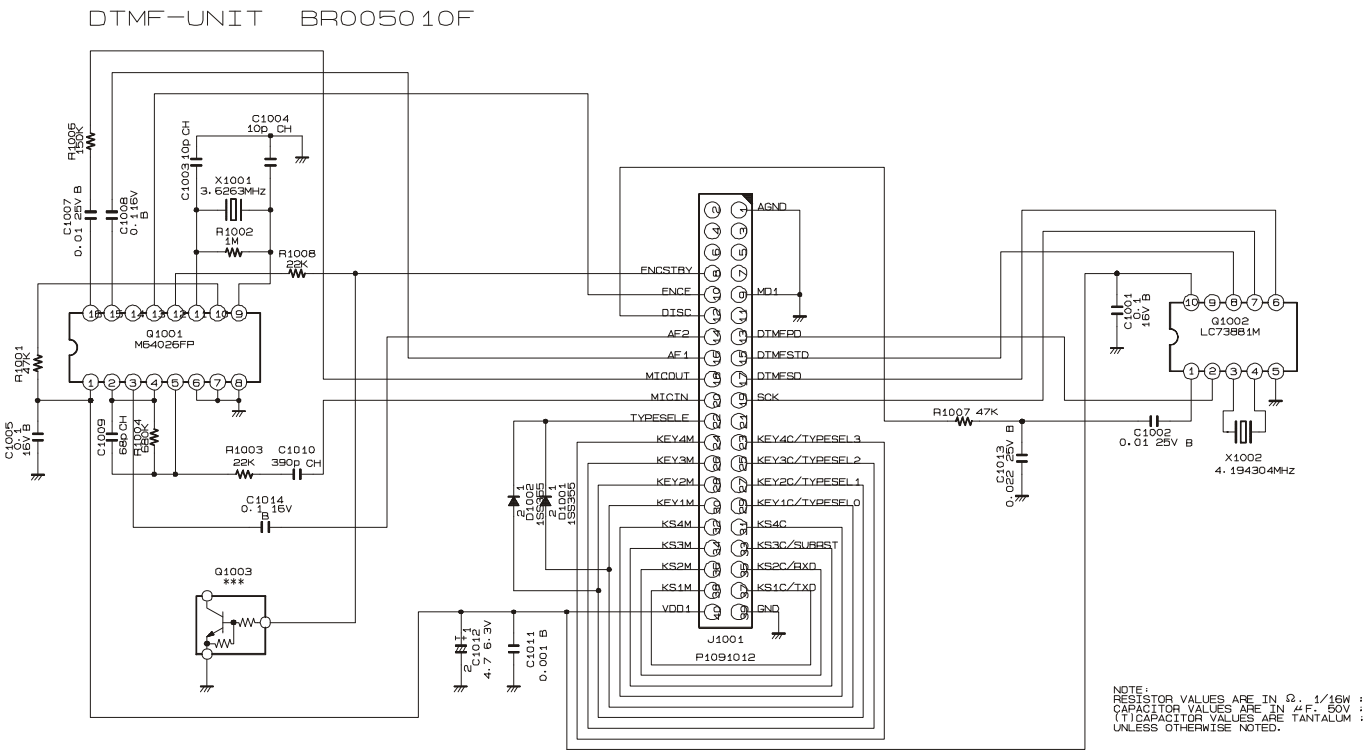
BR93LC56FV
(Q1004)

Parts List

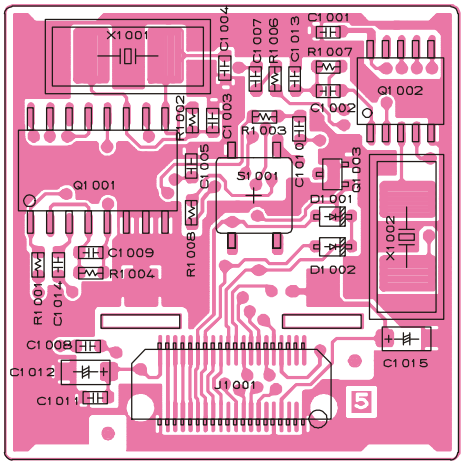
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** VTP-50 ***					
	Printed Circuit Board					FR002540C		1-		
C 1002	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	
C 1003	CHIP CAP.	0.01uF	25V	B	GRM39B103M25PT	K22144802		1-	A	
C 1003	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		9-	A	
C 1004	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
C 1004	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		9-	A	
C 1005	CHIP CAP.	0.01uF	25V	B	GRM39B103M25PT	K22144802		1-	A	
C 1005	CHIP CAP.	0.01uF	25V	B	GRM39B103K25PT	K22144803		9-	A	
C 1006	CHIP CAP.	10pF	50V	CH	GRM39CH100C50PT	K22174248		1-	A	
C 1007	CHIP CAP.	10pF	50V	CH	GRM39CH100C50PT	K22174248		1-	A	
C 1008	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	
C 1009	CHIP TA.CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-	A	
C 1010	CHIP CAP.	0.0018uF	50V	B	GRM39B182M50PT	K22174812		1-	A	
C 1011	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
C 1012	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
C 1013	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	
C 1014	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	
D 1001	DIODE				1SS355 TE-17	G2070470		1-	A	
J 1001	CONNECTOR				AXK5S40035P	P1091012		1-	A	
Q 1001	IC				NJM2904V-TE1	G1091677		1-	A	
Q 1002	IC				MC68HSC705C8A502-6030 130	G1092917		1-	A	
Q 1002	IC				MC68HSC705C8A502-6030 131	G1093326		6-	A	
Q 1003	IC				TA75S01F TE85R	G1091593		1-	A	
Q 1004	IC				BR93LC56FV-E2	G1092787		1-	A	
R 1001	CHIP RES.	0	1/16W	5%	RMC1/16 000JATP	J24185000		1-	A	
R 1002	CHIP RES.	680k	1/16W	5%	RMC1/16 684JATP	J24185684		1-	A	
R 1003	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	
R 1004	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	A	
R 1005	CHIP RES.	120k	1/16W	5%	RMC1/16 124JATP	J24185124		1-	A	
R 1006	CHIP RES.	680k	1/16W	5%	RMC1/16 684JATP	J24185684		1-	A	
R 1007	CHIP RES.	330k	1/16W	5%	RMC1/16 334JATP	J24185334		1-	A	
R 1008	CHIP RES.	150k	1/16W	5%	RMC1/16 154JATP	J24185154		1-	A	
R 1009	CHIP RES.	82k	1/16W	5%	RMC1/16 823JATP	J24185823		1-	A	
R 1010	CHIP RES.	39k	1/16W	5%	RMC1/16 393JATP	J24185393		1-	A	
R 1011	CHIP RES.	20k	1/16W	1%	RMC1/16 203FTP	J24183203		1-	A	
R 1012	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1013	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1014	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-	A	
R 1015	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1016	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1017	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1018	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1019	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	
R 1020	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	
R 1021	CHIP RES.	2.2k	1/16W	5%	RMC1/16 222JATP	J24185222		1-	A	
R 1022	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	
R 1023	CHIP RES.	560k	1/16W	5%	RMC1/16 564JATP	J24185564		1-	A	
R 1024	CHIP RES.	18k	1/16W	5%	RMC1/16 183JATP	J24185183		1-	A	
R 1025	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-	A	
R 1026	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	A	
R 1027	CHIP RES.	68k	1/16W	5%	RMC1/16 683JATP	J24185683		1-	A	
R 1028	CHIP RES.	33k	1/16W	5%	RMC1/16 333JATP	J24185333		1-	A	
X 1001	XTAL SX-1315	3.579545MHz			3.579545MHZ	H0103185		1-	A	
	BLIND SHEET					RA0109300		1-		

FVP-25 Encryption / DTMF Pager Unit

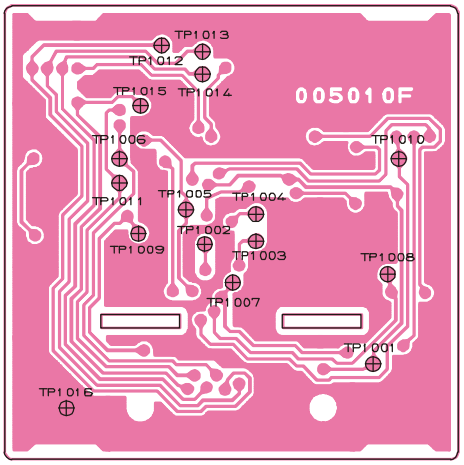
Circuit Diagram



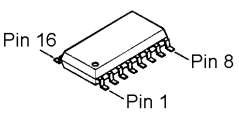
Parts Layout



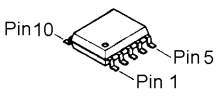
Side A



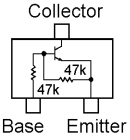
Side B



M64026FP
(Q1001)



LC73881
(Q1002)



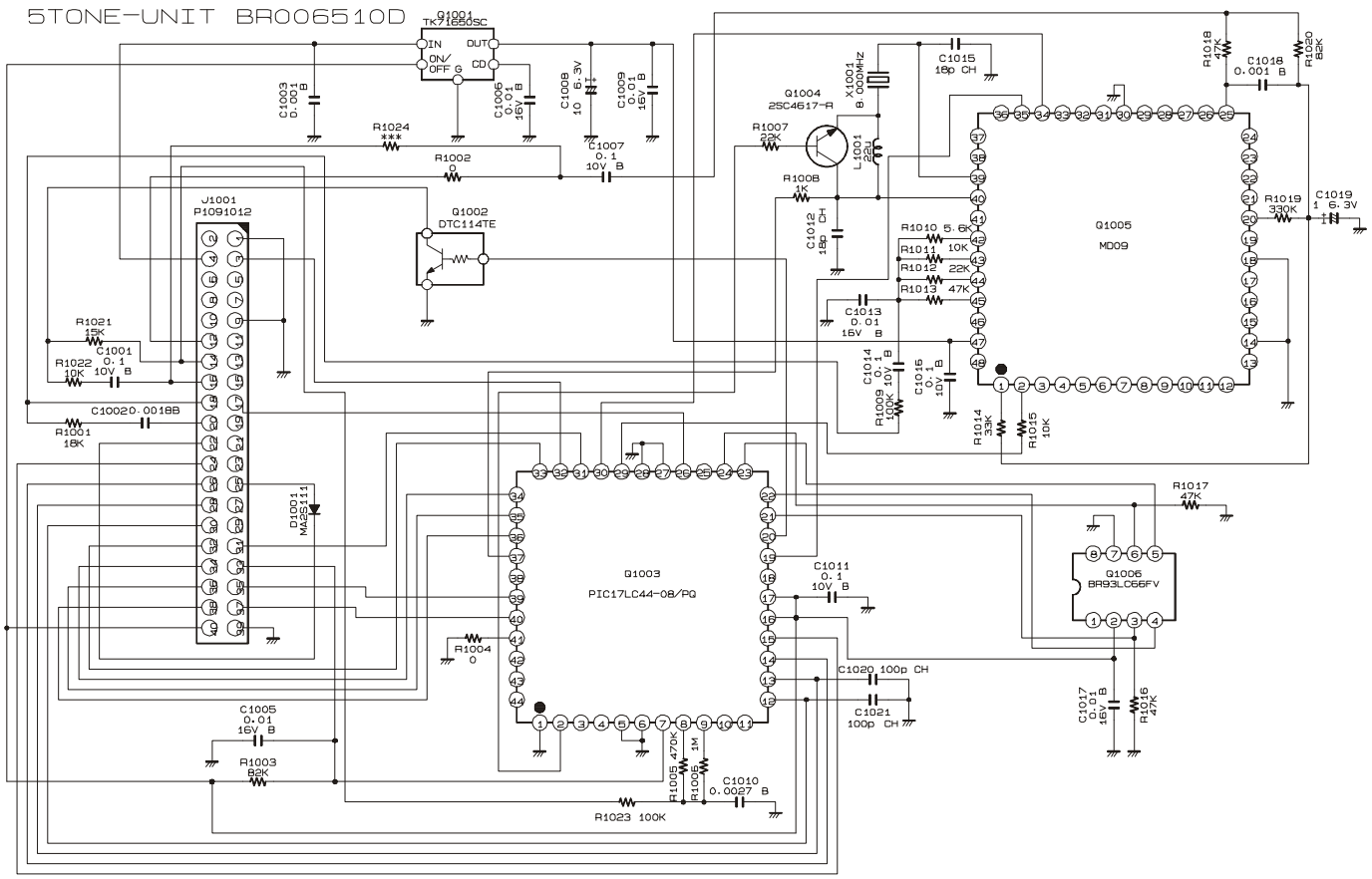
DTC144EU (26)
(Q1003)

Parts List

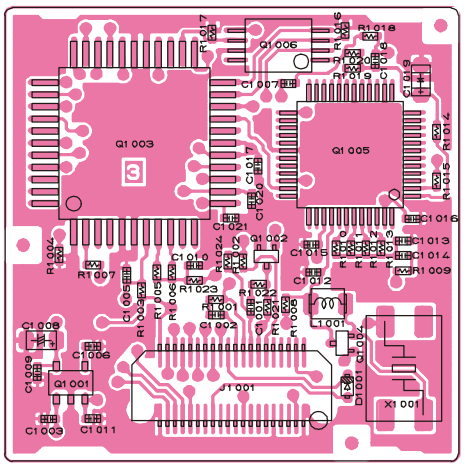
REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** FVP-25 ***					
	Printed Circuit Board					FR005010F		1-		
C 1001	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	B1
C 1002	CHIP CAP.	0.01uF	25V	B	GRM39B103M25PT	K22144802		1-	A	B1
C 1003	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-	A	A1
C 1004	CHIP CAP.	10pF	50V	CH	GRM39CH100D50PT	K22174211		1-	A	A1
C 1005	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	A1
C 1007	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	A1
C 1007	CHIP CAP.	0.01uF	25V	B	GRM39B103M25PT	K22144802		32-	A	A1
C 1008	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	A2
C 1009	CHIP CAP.	68pF	50V	CH	GRM39CH680J50PT	K22174231		1-	A	A1
C 1010	CHIP CAP.	390pF	50V	CH	GRM39CH391J50PT	K22174255		1-	A	A1
C 1011	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A2
C 1012	CHIP TA.CAP.	4.7uF	6.3V		TEMSVA0J475M-8R	K78080017		1-	A	A2
C 1013	CHIP CAP.	0.022uF	25V	B	GRM39B223K25PT	K22144807		1-	A	A1
C 1014	CHIP CAP.	0.1uF	16V	B	GRM39B104K16PT	K22124805		1-	A	A1
D 1001	DIODE				1SS355 TE-17	G2070470		1-	A	B1
D 1002	DIODE				1SS355 TE-17	G2070470		1-	A	B1
J 1001	CONNECTOR				AXK5S40035P	P1091012		1-	A	A2
Q 1001	IC				M64026FP-650C	G1092754		1-	A	A1
Q 1002	IC				LC73881M-TLM	G1092755		1-	A	B1
Q 1003	TRANSISTOR				DTC144EU T106	G3070041		1-	A	B1
R 1001	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	A1
R 1002	CHIP RES.	1M	1/16W	5%	RMC1/16 105JATP	J24185105		1-	A	A1
R 1003	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		1-	A	A1
R 1004	CHIP RES.	680k	1/16W	5%	RMC1/16 684JATP	J24185684		1-	A	A1
R 1006	CHIP RES.	150k	1/16W	5%	RMC1/16 154JATP	J24185154		1-	A	A1
R 1007	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	B1
R 1008	CHIP RES.	10k	1/16W	5%	RMC1/16 103JATP	J24185103		1-	A	A1
R 1008	CARBON FILM RES.	22k	1/8W	5%	RD18TJ223 22K	J01215223		14-	A	A1
R 1008	CHIP RES.	22k	1/16W	5%	RMC1/16 223JATP	J24185223		17-	A	A1
X 1001	XTAL SX-1315	3.6263MHz			3.6263MHZ	H0103183		1-	A	A1
X 1002	XTAL SX-1315	4.194304MHz			4.194304MHZ	H0103184		1-	A	B1
	BLIND SHEET					RA0109300		1-		

F5D-14 5-Tone Unit

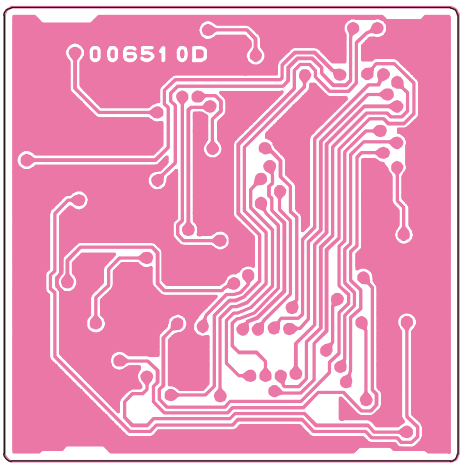
Circuit Diagram



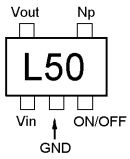
Parts Layout



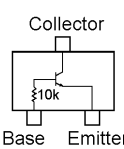
Side A



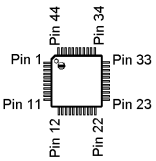
Side B



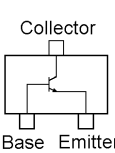
TK71650SC (L50)
(Q1001)



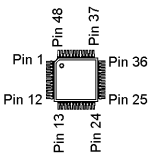
DTC114TE (04)
(Q1002)



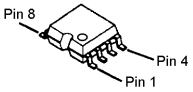
PIC17LC44-08/PQ
(Q1003)



2SC4617 (BR)
(Q1004)



MD09
(Q1005)



BR93LC66FV
(Q1006)

Parts List

REF.	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR
					*** F5D-14 ***					
	Printed Circuit Board					FR006510B		1-		
	Printed Circuit Board					FR006510D		3-		
C 1001	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	
C 1002	CHIP CAP.	0.0018uF	50V	B	GRM36B182K50PT	K22178812		1-	A	
C 1003	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	
C 1005	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	
C 1006	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	
C 1007	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	
C 1008	CHIP TA.CAP.	10uF	6.3V		EEJK0JS106R	K78080079		1-	A	
C 1008	CHIP TA.CAP.	10uF	6.3V		ECST0JZ106R	K78080078		8-	A	
C 1009	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	
C 1010	CHIP CAP.	0.0027uF	50V	B	GRM36B272K50PT	K22178814		1-	A	
C 1011	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	
C 1012	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	A	
C 1013	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	
C 1014	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	
C 1015	CHIP CAP.	18pF	50V	CH	GRM36CH180J50PT	K22178218		1-	A	
C 1016	CHIP CAP.	0.1uF	10V	B	GRM36B104K10PT	K22108802		1-	A	
C 1017	CHIP CAP.	0.01uF	16V	B	GRM36B103K16PT	K22128804		1-	A	
C 1018	CHIP CAP.	0.001uF	50V	B	GRM36B102K50PT	K22178809		1-	A	
C 1019	CHIP TA.CAP.	1uF	6.3V		TMCP0J105MTR	K78080071		1-	A	
C 1020	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	
C 1021	CHIP CAP.	100pF	50V	CH	GRM36CH101J50PT	K22178236		1-	A	
D 1001	DIODE				MA2S111-(TX)	G2070614		1-	A	
J 1001	CONNECTOR				AXK5S40035P	P1091012		1-	A	
L 1001	M.RFC	22uH			ELJ-FC220K	L1690201		1-	A	
Q 1001	IC				TK71650SCL	G1093136		1-	A	
Q 1002	TRANSISTOR				DTC114TE TL	G3070225		1-	A	
Q 1003	IC				PIC17LC44-08/PQ	S8100917		1-	A	
Q 1004	TRANSISTOR				2SC4617 TL R	G3346178R		1-	A	
Q 1005	IC				MD09	G1093276		1-	A	
Q 1006	IC				BR93LC66FV-E2	G1092853		1-	A	
R 1001	CHIP RES.	18k	1/16W	5%	RMC1/16S 183JTH	J24189040		1-	A	
R 1002	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	
R 1003	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	
R 1004	CHIP RES.	0	1/16W	5%	RMC1/16S JPTH	J24189070		1-	A	
R 1005	CHIP RES.	470k	1/16W	5%	RMC1/16S 474JTH	J24189057		1-	A	
R 1006	CHIP RES.	1M	1/16W	5%	RMC1/16S 105JTH	J24189061		1-	A	
R 1007	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	
R 1008	CHIP RES.	1k	1/16W	5%	RMC1/16S 102JTH	J24189025		1-	A	
R 1009	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	
R 1010	CHIP RES.	5.6k	1/16W	5%	RMC1/16S 562JTH	J24189034		1-	A	
R 1011	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	
R 1012	CHIP RES.	22k	1/16W	5%	RMC1/16S 223JTH	J24189041		1-	A	
R 1013	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	
R 1014	CHIP RES.	33k	1/16W	5%	RMC1/16S 333JTH	J24189043		1-	A	
R 1015	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	
R 1016	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	
R 1017	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	
R 1018	CHIP RES.	47k	1/16W	5%	RMC1/16S 473JTH	J24189045		1-	A	
R 1019	CHIP RES.	330k	1/16W	5%	RMC1/16S 334JTH	J24189055		1-	A	
R 1020	CHIP RES.	82k	1/16W	5%	RMC1/16S 823JTH	J24189048		1-	A	
R 1021	CHIP RES.	15k	1/16W	5%	RMC1/16S 153JTH	J24189039		1-	A	
R 1022	CHIP RES.	10k	1/16W	5%	RMC1/16S 103JTH	J24189037		1-	A	
R 1023	CHIP RES.	100k	1/16W	5%	RMC1/16S 104JTH	J24189049		1-	A	
X 1001	XTAL 94SMX	8MHz			8.000MHZ	H0103248		1-	A	
	BLIND SHEET					RA0109300		1-		

Printed in Japan.