DR-135 / DR-235 / DR-435

Service Manual

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ALINCO,INC.

SPECIFICATIONS

■ General

Frequency coverage	DR-135	DR-235	DR-435
T,TG (U.S amateur)	118.000 ~ 135.995MHz (AM RX) 136.000 ~ 173.995MHz (RX) 144.000 ~ 147.995MHz (TX)	216.000 ~ 279.995MHz (RX) 222.000 ~ 224.995MHz (TX)	350.000 ~ 511.995MHz (RX) 430.000 ~ 449.995MHz (TX)
E,EG (European amateur)	144.000 ~ 145.995MHz (RX.TX)		430.000 ~ 439.995MHz (RX.TX)
TA,TAG (Commercial)	118.000 ~ 135.995MHz (AM RX) 136.000 ~ 173.995MHz (RX.TX)		

Operating mode	FM 16K0F3E (Wide mode) 8K50F3E (Narrow mode)		
Frequency resolution	5,8.33,10,12.5,15,20,25,30,50 KHz		
Number of memory channels	100		
Antenna impedance	50Ω unbalanced		
Power requirement	13.8V DC ±15% (11.7 to 15.8V)		
Ground method	Negative ground		
Current drain Receive	0.6A(Max.) 0.4A(Squelched)		
Transmit	11.0A max.	8.0A max.	10.0A max.
Operating temperature	- 10˚C to 60˚C		
Frequency stability	±5ppm		
Dimensions	142(w)×40(h)×174(d) mm		
	(142×40×188mm for projection included)		
Weight	Approx. 1.0kg		

■ Transmitter

Output power	High:50W (144-148MHz) More than 33W (136-174MHz)	High:25W	High:35W
	Mid:10W	Mid:10W	Mid:10W
	Low:Approx.5W	Low:Approx.5W	Low:Approx.5W
Modulation system	Variable reactance frequency modulation		
Maximum frequency deviation	±5kHz (Wide mode) ±2.5kHz (Narrow mode)		
Spurious emission	-60dB		
Adjacent channel power	-60dB		
Noise and hum ratio	-40dB (Wide mode) -34dB (Narrow mode)		
Microphone impedance	2kΩ		

■ Receiver

Sensitivity	-16dBu for 12dB SINAD		
Receiver circuitry	Double conversion superheterodyne		
Intermediate frequency	1st 21.7MHz 2nd 450kHz	1st 30.85MHz 2nd 455kHz	1st 30.85MHz 2nd 455kHz
Squelch sensitivity	-18dBu		
Adjacent channel selectivity	-65dB(Wide mode) -55dB(Narrow mode)		
Intermoduration rejection ratio	60dB		
Spurious and image rejection ratio	70dB		
Audio output power	2.0W (8Ω,10%THD)		

! Note: All specifications are subject to change without notice or obligation.

CIRCUIT DESCRIPTION DR-135/DR-235/DR-435

1) Receiver System (DR-135)

The receiver system is a double superheterodyne system with a 21.7 MHz first IF and a 450 kHz second IF.

1. Front End

The received signal at any frequency in the 136.000MHz to 173.995MHz range is passed through the low-pass filter (L116, L115, L114, L113, C204, C203, C202, C216 and C215) and tuning circuit (L105, L104 and D105, D104), and amplified by the RF amplifier (Q107). The signal from Q107 is then passed through the tuning circuit (L103, L102, and varicaps D103 and D102) and converted into 21.7 MHz by the mixer (Q106). The tuning circuit, which consists of L105, L104, varicaps D105 and D104, L103, L102, varicaps D103 and D102, is controlled by the tracking voltage form the VCO. The local signal from the VCO is passed through the buffer (IC112), and supplied to the source of the mixer (Q106). The radio uses the lower side of the superheterodyne system.

2. IF Circuit

The mixer mixes the received signal with the local signal to obtain the sum of and difference between them. The crystal filter (XF102, XF101) selects 21.7 MHz frequency from the results and eliminates the signals of the unwanted frequencies. The first IF amplifier (Q105) then amplifies the signal of the selected frequency.

3. Demodulator Circuit

After the signal is amplified by the first IF amplifier (Q105), it is input to pin 24 of the demodulator IC (IC108). The second local signal of 21.25 MHz (shared with PLL IC reference oscillation), which is oscillated by the internal oscillation circuit in IC116 and crystal (X103), is input through pin 1 of IC108. Then, these two signals are mixed by the internal mixer in IC108 and the result is converted into the second IF signal with a frequency of 450 kHz. The second IF signal is output from pin 3 of IC108 to the ceramic filter (FL101 or FL102), where the unwanted frequency band of that signal is eliminated, and the resulting signal is sent back to the IC108 through pins 5.

The second IF signal input via pin 5 is demodulated by the internal limiter amplifier and quadrature detection circuit in IC108, and output as an audio signal through pin 12.

4. Audio Circuit

The audio signal from pin 12 of IC108 is amplified by the audio amplifier (IC104:A),and switched by the signal switch IC (IC111) and then input it to the de-emphasis circuit.

and is compensated to the audio frequency characteristics in the de-emphasis circuit (R203, R207, R213, R209, C191, C218, C217) and amplified by the AF amplifier (IC104:D). The signal is then input to volume (VR1) . The adjusted signal is sent to the audio power amplifier (IC117) through pin 1 to drive the speaker.

5. Squelch Circuit

The detected output which is outputted from the pin 12 of IC108 is inputted to pin 19 of IC108 after it was been amplified by IC104:A and it is outputted from pin 20 after the noise component was been eliminated from the composed band pass filter in the built in amplifier of the IC, then the signal is rectified by D106 to convert into DC component. The adjusted voltage level at VR101 is delivered to the comparator of the CPU.

The voltage is led to pin 2 of CPU and compared with the setting voltage. The squelch will open if the input voltage is lower than the setting voltage.

During open squelch, pin 30 (SQC) of the CPU becomes "L" level, AF control signal is being controlled and sounds is outputted from the speaker.)

6. AIR Band Reception(T only)

When the frequency is within 118~135.995MHz, Q110 automatically turns ON, pin 14 of IC108 becomes "L" level and the condition becomes in AM detection mode.

The receiver signal passed through the duplexer is let to the antenna switch (D107,D101). After passing through the band-pass filter, the signal is amplified by RF amplifier Q112. Secondly the signal is mixed with the signal from the first local oscillator in the first-mixer Q106,then converted into the first IF. Its unwanted signal is let to IC106, pin24. Then converted into the second IF. and is demodulated by AM decoder of IC106, and is output from pin13 as the AF signal.

7. WIDE/NARROW switching circuit

The 2nd IF 450 kHz signal which passes through filter FL101 (wide) and FL102 (narrow) during narrow, changes its width using the width control switching IC103 and IC102.

2) Transmitter System (DR-135)

1. Modulator Circuit

The audio signal is converted to an electrical signal by the microphone, and input it to the microphone amplifier (Q6). Amplified signal which passes through mic-mute control IC109 is adjusted to an appropriate mic-volume by means of mic-gain adjust VR106.

IC114:A and B consists of two operational amplifiers; one amplifier (pins 1, 2, and 3) is composed of pre-emphasis and IDC circuits and the other (pins 5, 6, and 7) is composed of a splatter filter. The maximum frequency deviation is obtained by VR107. and input to the signal switch (IC113) (9600 bps packet signal input switch) and input to the cathode of the varicap of the VCO, to change the electric capacity in the oscillation circuit. This produces the frequency modulation.

2. Power Amplifier Circuit

The transmitted signal is oscillated by the VCO, amplified by the drive amplifier (IC112) and younger amplifier (Q115), and input to the final power module (IC110). The signal is then amplified by the final power module (IC110) and led to the antenna switch (D110) and low-pass filter (L113, L114, L115, L116, C215, C216, C202, C203 and C204), where unwanted high harmonic waves are reduced as needed, and the resulting signal is supplied to the antenna.

3. APC Circuit

Part of the transmission power from the low-pass filter is detected by D111 and D112, converted to DC. The detection voltage is passed through the APC circuit (Q118, Q117, Q116), then it controls the APC voltage supplied to the younger amplifier Q115 and the final power module IC110 to fix the transmission power.

3) PLL Synthesizer Circuit (DR-135)

1. PLL

The dividing ratio is obtained by sending data from the CPU (IC1) to pin 2 and sending clock pulses to pin 3 of the PLL IC (IC116). The oscillated signal from the VCO is amplified by the buffer (Q134 and Q135) and input to pin 15 of IC116. Each programmable divider in IC116 divides the frequency of the input signal by N according to the frequency data, to generate a comparison frequency of 5 or 6.25 kHz.

2. Reference Frequency Circuit

The reference frequency appropriate for the channel steps is obtained by dividing the 21.25 MHz reference oscillation (X103) by 4250 or 3400, according to the data from the CPU (IC1). When the resulting frequency is 5 kHz, channel steps of 5, 10, 15, 20, 25, 30, and 50 kHz are used. When it is 6.25 kHz, the 12.5 kHz channel step is used.

3. Phase Comparator Circuit

The PLL (IC116) uses the reference frequency, 5 or 6.25kHz. The phase comparator in the IC116 compares the phase of the frequency from the VCO with that of the comparison frequency, 5 or 6.25kHz, which is obtained by the internal divider in IC116.

4. PLL Loop Filter Circuit

If a phase difference is found in the phase comparison between the reference frequency and VCO output frequency, the charge pump output (pin 13) of IC116 generates a pulse signal, which is converted to DC voltage by the PLL loop filter and input to the varicap of the VCO unit for oscillation frequency control.

5. VCO Circuit

A Colpitts oscillation circuit driven by Q131 directly oscillates the desired frequency. The frequency control voltage determined in the CPU (IC1) and PLL circuit is input to the varicaps (D122 and D123). This change the oscillation frequency, which is amplified by the VCO buffer (Q134) and output from the VCO area.

6. VCO Shift Circuit

During transmission or the AIR band Reception (118~136 MHz), the VCO shift circuit turns ON Q138, change control the capacitance of L123 and safely oscillates the VCO by means of H signal from pin 16 of IC116.)

4) Receiver System (DR-235)

The receiver system is a double superheterodyne system with a 30.85 MHz first IF and a 455 kHz second IF.

1. Front End

The received signal at any frequency in the 216.000MHz to 279.995MHz range is passed through the low-pass filter (L116, L115, L114, L113, C204, C203, C202, C216 and C215) and tuning circuit (L105, L104 and D105, D104), and amplified by the RF amplifier (Q107). The signal from Q107 is then passed through the tuning circuit (L103, L107, L102, and varicaps D103, D107 and D102) and converted into 30.85 MHz by the mixer (Q106). The tuning circuit, which consists of L105, L104, varicaps D105 and D104, L103, L107, L102, varicaps D103, D107 and D102, is controlled by the tracking voltage form the VCO. The local signal from the VCO is passed through the buffer (Q112), and supplied to the source of the mixer (Q106). The radio uses the lower side of the superheterodyne system.

2. IF Circuit

The mixer mixes the received signal with the local signal to obtain the sum of and difference between them. The crystal filter (XF102, XF101) selects 30.85 MHz frequency from the results and eliminates the signals of the unwanted frequencies. The first IF amplifier (Q105) then amplifies the signal of the selected frequency.

3. Demodulator Circuit

After the signal is amplified by the first IF amplifier (Q105), it is input to pin 24 of the demodulator IC (IC108). The second local signal of 30.395 MHz, which is oscillated by the internal oscillation circuit in IC108 and crystal (X104), is input through pin 1 of IC108. Then, these two signals are mixed by the internal mixer in IC108 and the result is converted into the second IF signal with a frequency of 455 kHz. The second IF signal is output from pin 3 of IC108 to the ceramic filter (FL101 or FL102), where the unwanted frequency band of that signal is eliminated, and the resulting signal is sent back to the IC108 through pins 5.
The second IF signal input via pin 5 is demodulated by the internal limiter amplifier and quadrature detection circuit in IC108, and output as an audio signal through pin 12.

4. Audio Circuit

The audio signal from pin 12 of IC108 is amplified by the audio amplifier (IC104:A), and switched by the signal switch IC (IC111) and then input it to the de-emphasis circuit.
and is compensated to the audio frequency characteristics in the de-emphasis circuit (R203, R207, R213, R209, C191, C218, C217) and amplified by the AF amplifier (IC104:D). The signal is then input to volume (VR1) . The adjusted signal is sent to the audio power amplifier (IC117) through pin 1 to drive the speaker.

5. Squelch Circuit

The detected output which is outputted from the pin 12 of IC108 is inputted to pin 19 of IC108 after it was been amplified by IC104:A and it is outputted from pin 20 after the noise component was been eliminated from the composed band pass filter in the built in amplifier of the IC, then the signal is rectified by D106 to convert into DC component. The adjusted voltage level at VR101 is delivered to the comparator of the CPU.
The voltage is led to pin 2 of CPU and compared with the setting voltage. The squelch will open if the input voltage is lower than the setting voltage.
During open squelch, pin 30 (SQC) of the CPU becomes "L" level, AF control signal is being controlled and sounds is outputted from the speaker.)

6. AIR Band Reception(T only)

If it is made air band receiving mode, IF signal is demodulated by AM decoder of IC106, and is output from pin13 as the AF signal.

7. WIDE/NARROW switching circuit

The 2nd IF 455 kHz signal which passes through filter FL101 (wide) and FL102 (narrow) during narrow, changes its width using the width control switching IC103 and IC102.

5) Transmitter System (DR-235)

1. Modulator Circuit

The audio signal is converted to an electrical signal by the microphone, and input it to the microphone amplifier (Q6). Amplified signal which passes through mic-mute control IC109 is adjusted to an appropriate mic-volume by means of mic-gain adjust VR106.
IC114:A and B consists of two operational amplifiers; one amplifier (pins 1, 2, and 3) is composed of pre-emphasis and IDC circuits and the other (pins 5, 6, and 7) is composed of a splatter filter. The maximum frequency deviation is obtained by VR107. and input to the signal switch (IC113) (9600 bps packet signal input switch) and input to the cathode of the varicap of the VCO, to change the electric capacity in the oscillation circuit. This produces the frequency modulation.

2. Power Amplifier Circuit

The transmitted signal is oscillated by the VCO, amplified by the drive amplifier (IC112) and younger amplifier (Q115), and input to the final power module (IC110). The signal is then amplified by the final power module (IC110) and led to the antenna switch (D110) and low-pass filter (L113, L114, L115, L116, C215, C216, C202, C203 and C204), where unwanted high harmonic waves are reduced as needed, and the resulting signal is supplied to the antenna.

3. APC Circuit

Part of the transmission power from the low-pass filter is detected by D111 and D112, converted to DC. The detection voltage is passed through the APC circuit (Q118, Q117, Q116), then it controls the APC voltage supplied to the younger amplifier Q115 and the final power module IC110 to fix the transmission power.

6) PLL Synthesizer Circuit (DR-235)

1. PLL

The dividing ratio is obtained by sending data from the CPU (IC1) to pin 2 and sending clock pulses to pin 3 of the PLL IC (IC501). The oscillated signal from the VCO is amplified by the buffer (Q504 and Q501) and input to pin 15 of IC501. Each programmable divider in IC501 divides the frequency of the input signal by N according to the frequency data, to generate a comparison frequency of 5 or 6.25 kHz.

2. Reference Frequency Circuit

The reference frequency appropriate for the channel steps is obtained by dividing the 12.8 MHz reference oscillation (X103) by 2560 or 2048, according to the data from the CPU (IC1). When the resulting frequency is 5 kHz, channel steps of 5, 10, 15, 20, 25, 30, and 50 kHz are used. When it is 6.25 kHz, the 12.5 kHz channel step is used.

3. Phase Comparator Circuit

The PLL (IC501) uses the reference frequency, 5 or 6.25kHz. The phase comparator in the IC501 compares the phase of the frequency from the VCO with that of the comparison frequency, 5 or 6.25kHz, which is obtained by the internal divider in IC501.

4. PLL Loop Filter Circuit

If a phase difference is found in the phase comparison between the reference frequency and VCO output frequency, the charge pump output (pin 13) of IC501 generates a pulse signal, which is converted to DC voltage by the PLL loop filter and input to the varicap of the VCO unit for oscillation frequency control.

5. VCO Circuit

A Colpitts oscillation circuit driven by Q503 directly oscillates the desired frequency. The frequency control voltage determined in the CPU (IC1) and PLL circuit is input to the varicaps (D503 and D504). This change the oscillation frequency, which is amplified by the VCO buffer (Q504) and output from the VCO area.

7) Receiver System (DR-435)

The receiver system is a double superheterodyne system with a 30.85 MHz first IF and a 455 kHz second IF.

1. Front End

The received signal at any frequency in the 430.00MHz to 439.995MHz range is passed through the low-pass filter (L115, L114, L116, C204, C203, C202, C216 and C215) and amplified by the RF amplifier (Q107). The signal from Q107 is then passed through the BPF circuit (L103, L102) and converted into 30.85 MHz by the mixer (Q106). The local signal from the VCO is passed through the buffer (Q503,Q504), and supplied to the source of the mixer (Q106). The radio uses the lower side of the superheterodyne system.

2. IF Circuit

The mixer mixes the received signal with the local signal to obtain the sum of and difference between them. The crystal filter (XF101) selects 30.85MHz frequency from the results and eliminates the signals of the unwanted frequencies. The first IF amplifier (Q105) then amplifies the signal of the selected frequency.

3. Demodulator Circuit

After the signal is amplified by the first IF amplifier (Q105), it is input to pin 20 of the demodulator IC (IC108). The second local signal of 30.85MHz (Crystal oscillator) is input pin 1 of IC108. Then, these two signals are mixed by the internal mixer in IC108 and the result is converted into the second IF signal with a frequency of 455 kHz. The second IF signal is output from pin 4 of IC108 to the ceramic filter (FL101 or FL102), where the unwanted frequency band of that signal is eliminated, and the resulting signal is sent back to the IC108 through pins 6.

The second IF signal input via pin 6 is demodulated by the internal limiter amplifier and quadrature detection circuit in IC108, and output as an audio signal through pin 11.

4. Audio Circuit

The audio signal from pin 11 of IC108 is amplified by the audio amplifier (IC104:A), and switched by the signal switch IC (IC111) and then input it to the de-emphasis circuit.

and is compensated to the audio frequency characteristics in the de-emphasis circuit (R203, R207, R213, R209, C191, C218, C217) and amplified by the AF amplifier (IC104:D). The signal is then input to volume (VR1) . The adjusted signal is sent to the audio power amplifier (IC117) through pin 1 to drive the speaker.

5. Squelch Circuit

The detected output which is outputted from the pin 11 of IC108 is inputted to pin 13 of IC108 after it was been amplified by IC104:A and it is outputted from pin 14 after the noise component was been eliminated from the composed band pass filter in the built in amplifier of the IC, then the signal is rectified by D106 to convert into DC component. The adjusted voltage level at VR101 is delivered to the comparator of the CPU.

The voltage is led to pin 2 of CPU and compared with the setting voltage. The squelch will open if the input voltage is lower than the setting voltage.

During open squelch, pin 30 (SQC) of the CPU becomes "L" level, AF control signal is being controlled and sounds is outputted from the speaker.

6. WIDE/NARROW switching circuit

The 2nd IF 455 KHz signal which passes through filter FL101 (wide) and FL102 (narrow) during narrow, changes its width using the width control switching IC103 and IC102.

8) Transmitter System (DR-435)

1. Modulator Circuit

The audio signal is converted to an electrical signal by the microphone, and input it to the microphone amplifier (Q6). Amplified signal which passes through mic. mute control IC109 is adjusted to an appropriate mic. volume by means of mic. gain adjust VR106.

IC114:A and B consists of two operational amplifiers; one amplifier (pins 1, 2, and 3) is composed of pre-emphasis and IDC circuits and the other (pins 5, 6, and 7) is composed of a splatter filter. The maximum frequency deviation is obtained by VR107. and input to the signal switch (IC113) (9600 bps packet signal input switch) and input to the cathode of the varicap of the VCO, to change the electric capacity in the oscillation circuit. This produces the frequency modulation.

2. Power Amplifier Circuit

The transmitted signal is oscillated by the VCO, amplified by the drive amplifier (Q131, Q125) and younger amplifier (Q115), and input to the final power module (IC110). The signal is then amplified by the final power module (IC110) and led to the antenna switch (D110) and low-pass filter (L116, L114, L115, C215, C216, C202, C203 and C204), where unwanted high harmonic waves are reduced as needed, and the resulting signal is supplied to the antenna.

3. APC Circuit

Part of the transmission power from the low-pass filter is detected by D111 and D112, converted to DC. The detection voltage is passed through the APC circuit(Q118, Q117, Q116), then it controls the APC voltage supplied to the younger amplifier Q115 and the final power module IC110 to fix the transmission power.

9) PLL Synthesizer Circuit (DR-435)

1. PLL

The dividing ratio is obtained by sending data from the CPU (IC1) to pin 2 and sending clock pulses to pin 3 of the PLL IC (IC501). The oscillated signal from the VCO is amplified by the buffer (Q503 and Q501) and input to pin 15 of IC501. Each programmable divider in IC501 divides the frequency of the input signal by N according to the frequency data, to generate a comparison frequency of 5 or 6.25 kHz.

2. Reference Frequency Circuit

The reference frequency appropriate for the channel steps is obtained by dividing the 21.25 MHz reference oscillation (X103) by 4250 or 3400, according to the data from the CPU (IC1). When the resulting frequency is 5 kHz, channel steps of 5, 8.33, 10, 15, 20, 25, 30, and 50 kHz are used. When it is 6.25 kHz, the 12.5 kHz channel step is used.

3. Phase Comparator Circuit

The PLL (IC501) uses the reference frequency, 5 or 6.25kHz. The phase comparator in the IC501 compares the phase of the frequency from the VCO with that of the comparison frequency, 5 or 6.25kHz, which is obtained by the internal divider in IC501.

4. PLL Loop Filter Circuit

If a phase difference is found in the phase comparison between the reference frequency and VCO output frequency, the charge pump output (pin 13) of IC501 generates a pulse signal, which is converted to DC voltage by the PLL loop filter and input to the varicap of the VCO unit for oscillation frequency control.

5. VCO Circuit

A Colpitts oscillation circuit driven by Q502 directly oscillates the desired frequency. The frequency control voltage determined in the CPU (IC1) and PLL circuit is input to the varicaps (D502 and D503). This change the oscillation frequency, which is amplified by the VCO buffer (Q503,504) and output from the VCO unit.

10) CPU and Peripheral Circuits (DR-135 DR-235 DR-435)

1. LCD Display Circuit

The CPU turns ON the LCD via segment and common terminals with 1/4 the duty and 1/3 the bias, at the frame frequency is 64Hz.

2. Dimmer Circuit

The dimmer circuit makes the output of pin 13 of CPU (IC1) into "H" level at set mode, so that Q9 and Q3 will turn ON to make the lamp control resistor R84 short and make its illumination bright. But on the other hand, if the dimmer circuit makes pin 13 into "L" level, Q9 and Q3 will turn OFF, R84's illumination will become dimmer as its hang on voltage falls down in the working LED (D11, D2, D5, D3 and D6).

3. Reset and Backup

When the power form the DC cable increases from Circuits 0 V to 2.5 or more, "H" level reset signal is output form the reset IC (IC4) to pin 33 of the CPU (IC1), causing the CPU to reset. The reset signal, however, waits at 100, and does not enter the CPU until the CPU clock (X1) has stabilized.

4. S(Signal) Meter Circuit

The DC potential of pin 16 of IC106 is input to pin 1 of the CPU (IC1), converted from an analog to a digital signal, and displayed as the S-meter signal on the LCD.

5. DTMF Encoder

The CPU (IC1) is equipped with an internal DTMF encoder. The DTMF signal is output from pin 10, through R35, R34 and R261 (for level adjustment), and then through the microphone amplifier (IC114:A), and is sent to the varicap of the VCO for modulation. At the same time, the monitoring tone passes through the AF circuit and is output form the speaker.

6. Tone Encoder

The CPU (IC1) is equipped with an internal tone encoder. The tone signal (67.0 to 250.3 Hz) is output from pin 9 of the CPU to the varicap (D122 and D123) of the VCO for modulation.

7. DCS Encoder

The CPU (IC1) is equipped with an internal DCS code encoder. The code (023 to 754) is output from pin 9 of the CPU to the varicap (D124) of the PLL reference oscillator. When DCS is ON, DCS MUTE circuit (Q126-ON, Q133-ON, Q132-OFF) works. The modulation activates in X103 side only.

8. CTCSS, DCS Decoder

The voice band of the AF output signal from pin 1 of IC104:A is cut by sharp active filter IC104:B and C (VCVS) and amplified, then led to pin 4 of CPU. The input signal is compared with the programmed tone frequency code in the CPU. The squelch will open when they match. During DCS, Q108 is ON, C156 is working and cut off frequency is lowered.

11) Power Supply Circuit

When power supply is ON, there is a "L" signal being inputted to pin 39 (PSW) of CPU which enables the CPU to work.

Then, "H" signal is outputted from the pin 41 (C5C) of CPU and drives ON the power supply switch control Q8 and Q7 which turns the 5VS ON.

5VS turns ON the PLL IC116, main power supply switch Q127 and Q122, AF POWER IC117 and the 8 V of AVR (IC115).

During reception, pin 29 (R5) of CPU outputs "H" level, Q124 is ON, and the reception circuits supplied by 8 V.

While during transmission, pin 28 (T5) of CPU outputs "L" level which is reverse by Q11 so that the output in Q128 will be "H" level, Q123 is ON, and the transmission circuit is supplied by 8 V.

Or, in the case when the condition of PLL is UNLOCK, "H" level is outputted from pin 14 of IC106, UNLOCK switch Q129is ON, transmission switch Q128 is OFF which makes the transmission to stop.

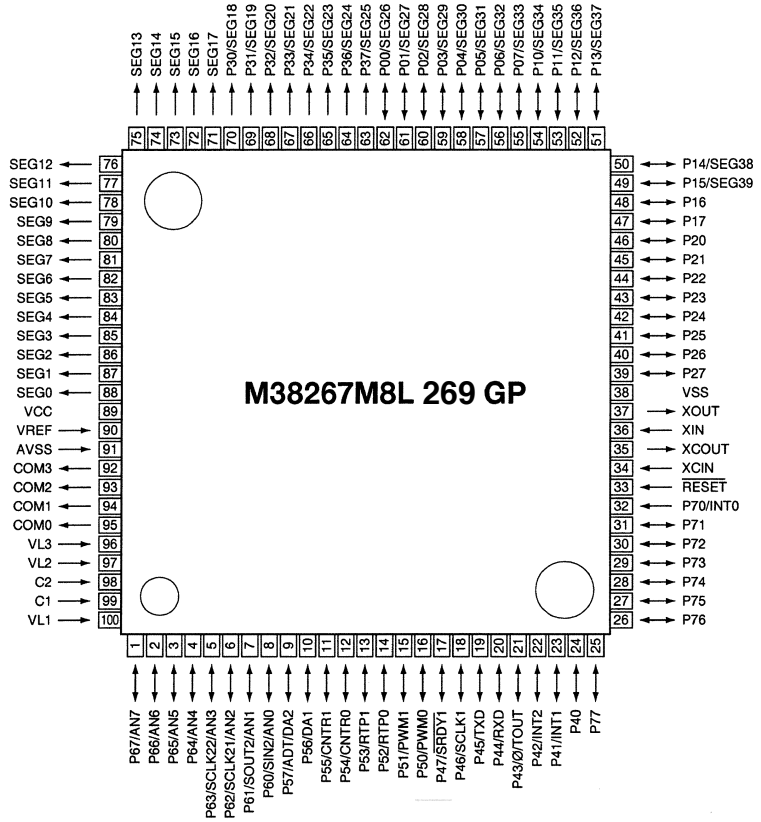
1. ACC External Power Supply Terminal

When optional power supply cord DEC-37 etc. is connected to the external power supply terminal JK101, with ACC power supply ON, switch Q101 will turn ON, 5 V of AVR IC101 pin 2 (STB) becomes "L" which makes C5V to turn ON. With this, it can turn the power supply of the radio ON.

12) M3826M8L269GP (XA0818)

CPU

Terminal Connection
(TOP VIEW)



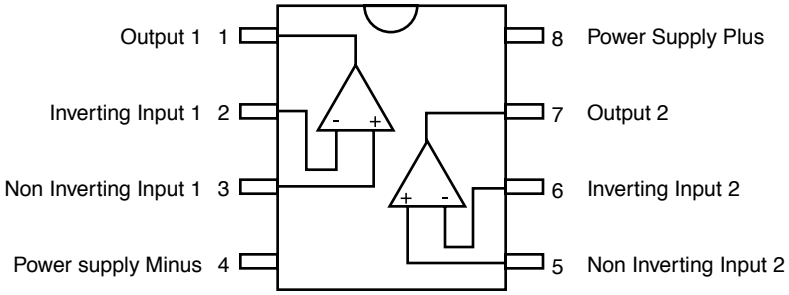
No.	Pin Name	Function	I/O	PU	Logic	Description
1	P67/AN7	SMT	I	-	A/D	S-meter input
2	P66/AN6	SQL	I	-	A/D	Noise level input for squelch
3	P65/AN5	BAT	I	-	A/D	Battery voltage input
4	P64/AN4	TIN	I	-	A/D	CTCSS tone input/DSC code input
5	P63/SCLK22/AN3	BP1	I	-	A/D	Band plan 1
6	P62/SCLK21/AN2	BP2	I	-	A/D	Band plan 2
7	P61/SOUT2/AN1	DCSW	O	-	Activ high	DCS signal mute
8	P60/SIN2/AN0	RE2	I	-	Activ low	Rotary encoder input
9	P57/ADT/DA2	TOUT	O	-	D/A	CTCSS tone output/DCS tone output
10	P56/DA1	DOUT	O	-	D/A	DTMF output
11	P55/CNTR1	SCL	O	-	Pulse	Serial clock for EEPROM
12	P54/CNTR0	TBST	O	-	Pulse	Tone burst output
13	P53/RTP1	BP4	I	-	-	Band plan 4
14	P52/RTP0	MUTE	I/O	-	Activ low	Microphone mute/Security alarm SW
15	P51/PWM3	CLK	O	-	Pulse	Serial clock output for PLL,scramble
16	P50/PWM	DATA	I/O	-	Pulse	Serial data output for PLL scramble/PLL unlock signal input
17	P47/SROY1	TSTB	I/O	-	Activ low/Pulse	Trunking board detection / Strobe signal to trunking board
18	P46/SCLK1	STB	O	-	Pulse	Strobe for PLL IC
19	P45/TXD	UTX	O	-	Pulse	UART data transmission output
20	P44/RXD	RTX	I	-	Pulse	UART data reception output
21	P43/Φ/TOUT	BEEP	I/O	-	Pulse/Activ low	Beep tone/Band plan 3
22	P42I/NT2	SEC	I	-	Activ high	Security voltage input
23	P41/INT1	RE1	I	-	Activ low	Rotary encoder input
24	P40	DSQ	I	-	Activ high	Digital squelch input
25	P77	PTT	I	-	Activ low	PTT input
26	P7	SSTB	O	-	Pulse/Activ low	Strobe signal to scramble IC/Security mode
27	P75	W/N	O	-	Activ low	Wide Narrow SW
28	P74	T5	O	-	Activ low	TX power ON/OFF output
29	P73	R5	O	-	Activ high	RX power ON/OFF output
30	P72	SQC	O	-	Activ low	SQL ON/OFF
31	P71	C/S	O	-	Activ low	Digital scramble ON/OFF
32	P70/INTO	BU	I	-	Activ low	Backup signal detection input
33	RESET	RESET	I	-	Activ low	Reset input
34	Xcin	Xcin	-	-	-	-
35	Xcout	Xcout	-	-	-	-
36	Xin	Xin	-	-	-	Main clock input
37	Xout	Xout	-	-	-	Main clock output
38	Vss	GND	-	-	-	CPU GND
39	P27	PSW	I	-	Avtiv low	Power switch input
40	P26	SDA	O	-	Pulse	Serial data for EEPROM
41	P25	C5C	O	-	Activ high	C5V power ON/OFF output
42	P24	AIR	O	-	Activ high	Air band SW / Tx middle power
43	P23	LOW	O	-	Activ high	Tx low power
44	P22	EXP	O	-	Activ high	Trunking data SW
45	P21	SW6	I	*	Activ low	Key sw6 (SQL)
46	P20	SW5	I	*	Activ low	Key sw5 (CALL)
47	P17	SW4	I	*	Activ low	Key sw4 (TSQ)
48	P16	SW3	I	*	Activ low	Key sw3 (MHz)
49	P15/SEG39	SW2	I	*	Activ low	Key sw2 (V/M)
50	P14/SEG38	SW1	I	*	Activ low	Key sw1 (FUNC)
51	P13/SEG37	DOWN	I	*	Activ low	Mic down input
52	P12/SEG36	DUD	I	-	-	Digital unit detect
53	P11/SEG35	SCR	I	*	Active low	Scramble IC ready signal/Packet PTT
54	P10/SEG34	UP	I	*	Active low	Mic down input
55	P07/SEG33	S33	O	-	-	LCD segment signal

No.	Pin Name	Function	I/O	PU	Logic	Description
56	P06/SEG32	S32	O	-	-	LCD segment signal
57	P05/SEG31	S31	O	-	-	
58	P04/SEG30	S30	O	-	-	
59	P03/SEG29	S29	O	-	-	
60	P02/SEG28	S28	O	-	-	
61	P01/SEG27	S27	O	-	-	
62	P00/SEG26	S26	O	-	-	
63	P37/SEG25	S25	O	-	-	
64	P36/SEG24	S24	O	-	-	
65	P35/SEG23	S23	O	-	-	
66	P34/SEG22	S22	O	-	-	
67	P33/SEG21	S21	O	-	-	
68	P32/SEG20	S20	O	-	-	
69	P31/SEG19	S19	O	-	-	
70	P30/SEG18	S18	O	-	-	
71	SEG17	S17	O	-	-	
72	SEG16	S16	O	-	-	
73	SEG15	S15	O	-	-	
74	SEG14	S14	O	-	-	
75	SEG13	S13	O	-	-	
76	SEG12	S12	O	-	-	
77	SEG11	S11	O	-	-	
78	SEG10	S10	O	-	-	
79	SEG9	S9	O	-	-	
80	SEG8	S8	O	-	-	
81	SEG7	S7	O	-	-	
82	SEG6	S6	O	-	-	
83	SEG5	S5	O	-	-	
84	SEG4	S4	O	-	-	
85	SEG3	S3	O	-	-	
86	SEG2	S2	O	-	-	
87	SEG1	S1	O	-	-	
88	SEG0	S0	O	-	-	
89	Vcc	VDD	-	-	-	CPU power terminal
90	Vref	Vref	-	-	-	AD converter power supply
91	Avss	Avss	-	-	-	AD converter GND
92	COM3	COM3	O	-	-	LCD COM3 output
93	COM2	COM2	O	-	-	LCD COM2 output
94	COM1	COM1	O	-	-	LCD COM1 output
95	COM0	COM0	O	-	-	LCD COM0 output
96	VL3	VL3	-	-	-	LCD power supply
97	VL2	VL2	-	-	-	
98	C2	I	-	-	-	-
99	C1	C1	-	-	-	-
100	VL1	VL1	I	-	A/D	LCD power supply

SEMICONDUCTOR DATA

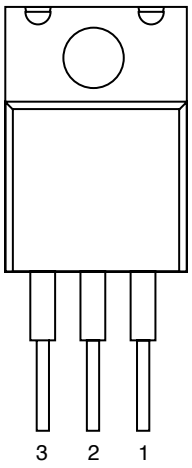
1) M5218FP (XA0068)

Dual Low Noise
Operational Amplifiers



2) NJM7808FA (XA0102)

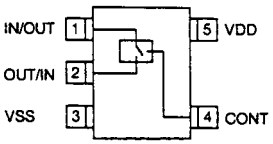
Pin Assignment

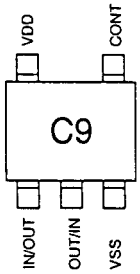


1. OUTPUT
2. COMMON
3. INPUT

3) TC4S66F (XA0115)

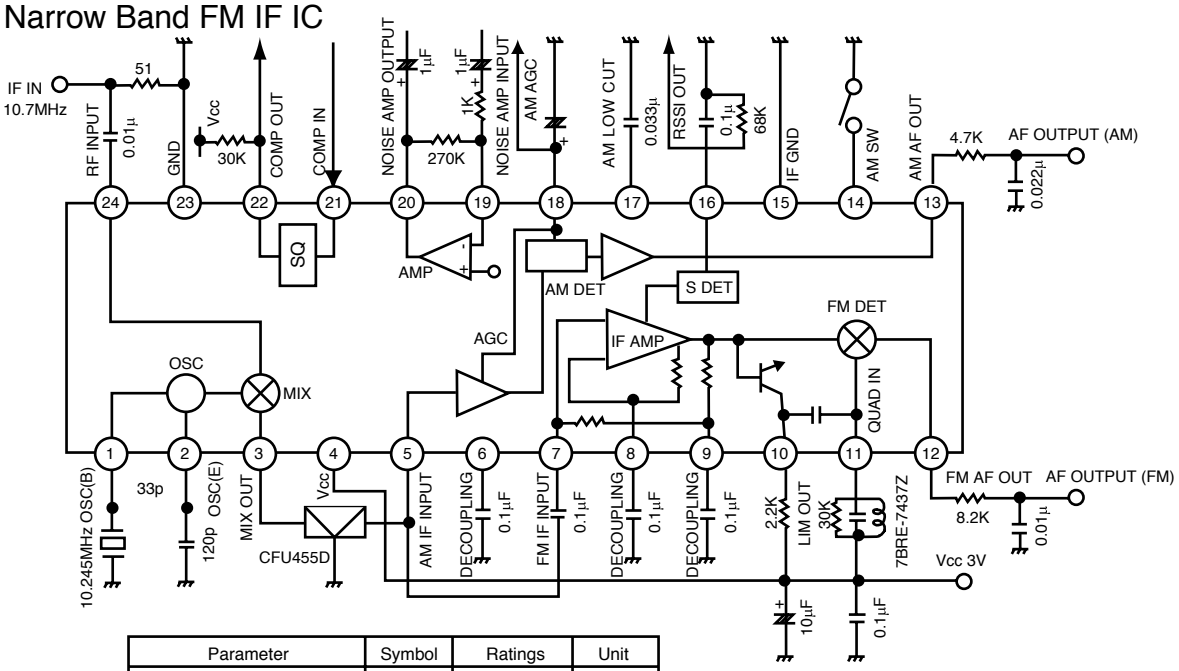
Bilateral Switch





4) TK10930VTL (XA0223)

Narrow Band FM IF IC



Parameter	Symbol	Ratings	Unit
Supply voltage	Vcc max	10.0	V
Power dissipation	Pd	400	mV
Storage temperature	Tstg	-55~+150	℃
Operating temperature	Top	-30~+75	℃
Operating voltage	Vop	2.5~8.5	V
Operating frequency	fop	~60	MHz

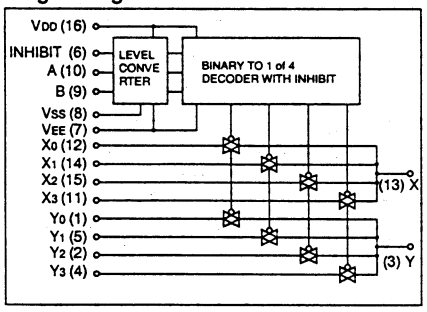
Ta=25℃ Vcc=3V

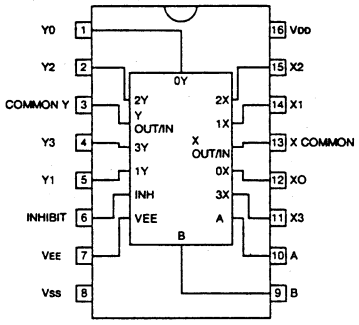
Parameter	Symbol	Ratings			Unit	Condition
		Min	Typical	Max		
Supply Current 1	Icc1		6.8	8.9	mA	No signal, AM ON
Supply Current 2	Icc2		3.9	5.3	mA	No signal, AM OFF
Mixer Coversion Gain	Mg		20		dB	
Mixer Input Impedance	Mz		3.6		KΩ	DC Test
FM						
Limiting Sensitivity	Limit		2.0	8.0	μV	-3.0dB
Output Voltage	Vo1	85	150	230	mVrms	10mVin +/-3kHz DEV
Distortion	THD1		1.0	2.0	%	10mVin +/-3kHz DEV
Output Impedance	Zo		800		Ω	10mVin
Filter Gain	Gf	30	38		dB	Fin=30kHz, Vo=100mV
Scan Control Hi Voltage	SH	2.3			V	Squelch input=2.5V
Scan Control Low Voltage	SL			0.3	V	Squelch input=0V
Squelch Hysteresis	Hys		30		mV	
S meter Output Voltage	S0		0.05	0.5	V	Vin=0mV, RS=68kΩ
S meter Output Voltage	S1	0.05	0.5	0.9	V	Vin=0.01mV, RS=68kΩ
S meter Output Voltage	S2	0.7	1.2	1.7	V	Vin=0.1mV, RS=68kΩ
S meter Output Voltage	S3	1.2	1.8	2.5	V	Vin=1mV, RS=68kΩ
S meter Output Voltage	S4	1.6	2.3	2.9	V	Vin=10mV, RS=68kΩ
S meter Output Voltage	S5	1.8	2.4	2.9	V	Vin=100mV, RS=68kΩ
AM						
Sensitivity	US	20	15		μV	required input level to get 20mV rms output
Output Voltage	Vo2	60	120	160	mVrms	1kHz, 30%, Vin=1mV
Distortion-1	THD2		1.0	2.0	%	1kHz, 30%, Vin=1mV
Distortion-2	THD3		2.0	4.0	%	1kHz, 30%, Vin=1mV
S/N	S/N	40	48		dB	1kHz, 30%, Vin=1mV
AM OFF	Vo	-0.3		0.3	%	

5) BU4052BF (XA0236)

Analog Multiplexer/Demultiplexer

Logic Diagram





Truth Table

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

X: Don't Care

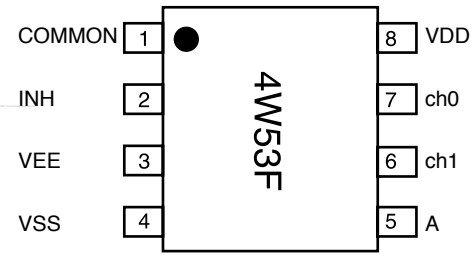
6) TC4W53FU (XA0348)

Multiplexer/Demultiplexer

Function Table

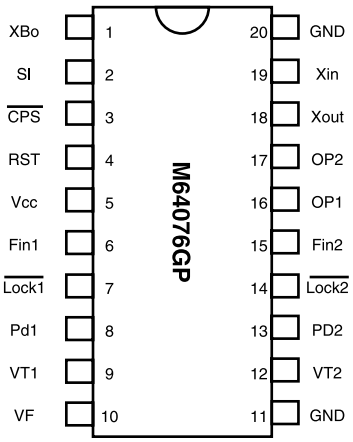
Control input		ON channel
INH	A	
L	L	ch0
L	H	ch1
H	*	NONE

* Don't Care



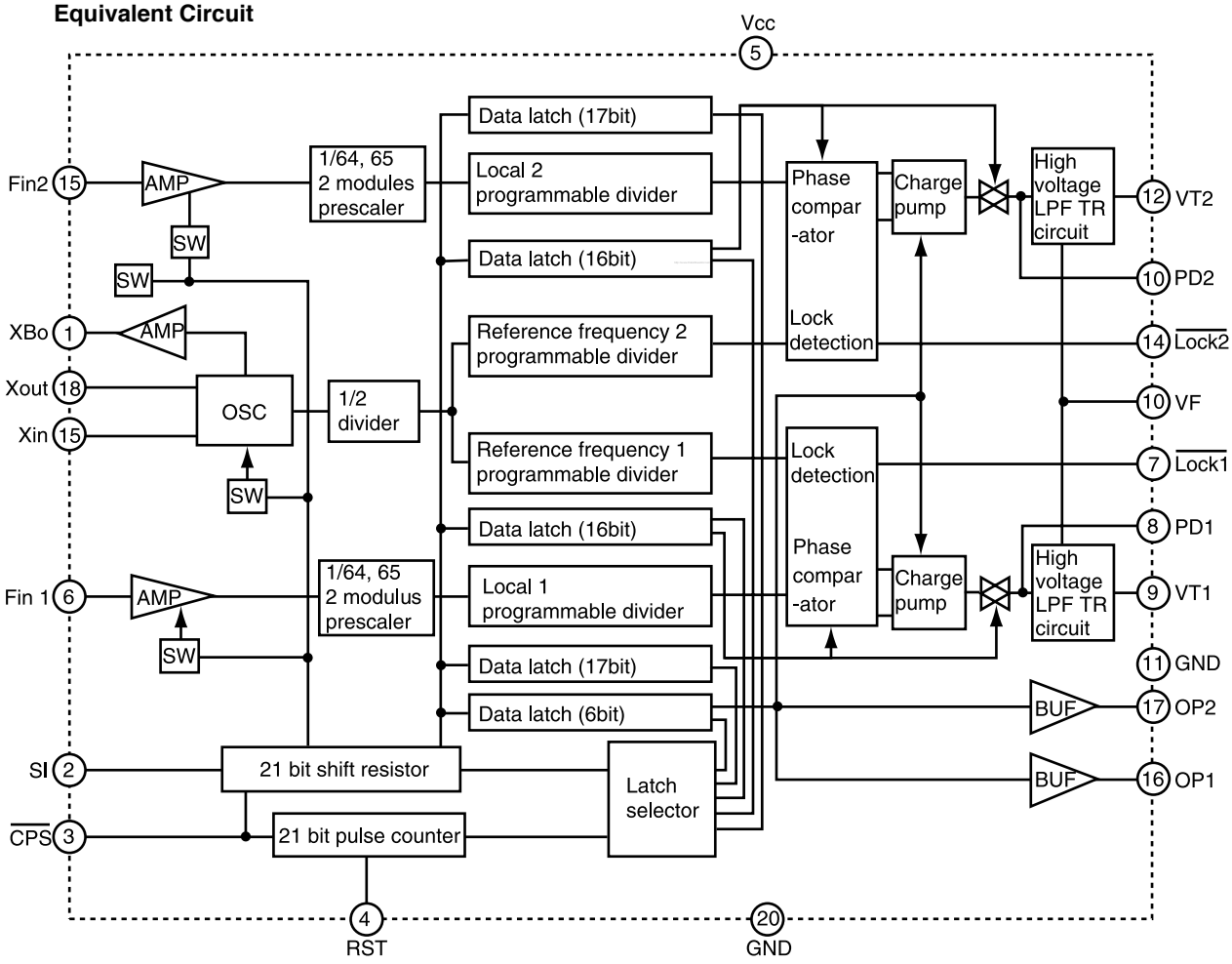
7) M64076GP (XA0352)

Dual PLL Synthesizer



Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	Fin=80~520MHz Vin=-10dBm	2.7	-	5.5	V
LPF supply voltage	VF		-	9	12	V
Local oscillator input level	Vin	Fin=80~520MHz	-20	-	-4	dBm
Local oscillator input frequency	Fin	Vin=-20~-4dBm Vcc=2.7~5.5V	80	-	520	MHz
Xin input level	Vxin	Vcc=2.7~5.5V Fxin=10~25MHz Sine wave	0.4	-	1.4	Vp-p
Xin input frequency	Fxin	Vcc=2.7~5.5V Vxin=0.4~1.4Vp-p	10	-	25	MHz

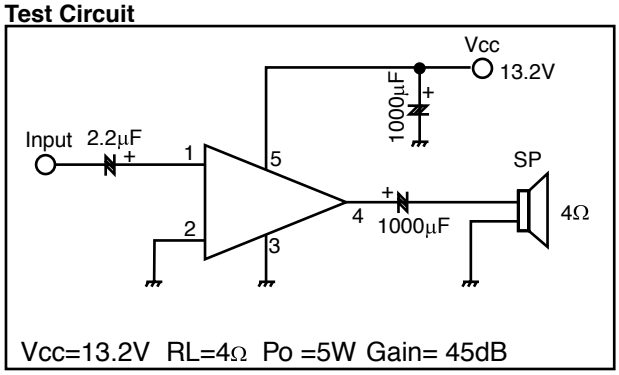
Equivalent Circuit

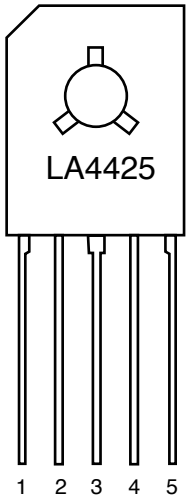


8) LA4425A (XA0410)

5W Audio Power Amplifiers

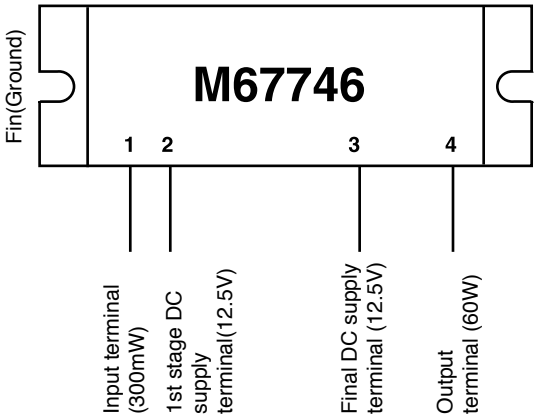
Test Circuit





9) M67746 (XA0412)

144 ~ 148MHz 60W
RF Power Module

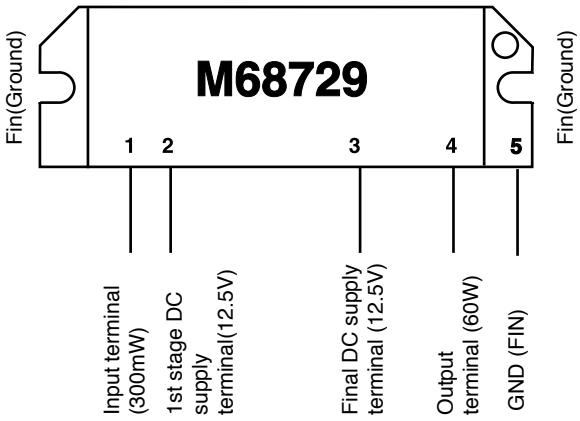


Rating	Symbol	Ratings	Unit
Supply voltage	Vcc	17	V
Total current	Icc	20	A
Input power	Pin(max)	600	mW
Output Power	Po(max)	70	W
Operation case temperature	Tc(op)	-30 to + 110	°C
Strage temperature	Tstg	-40 to + 110	°C

Zg=Zl=50Ω

10) M68729 (XA0591)

220 ~ 246MHz 30W
RF Power Module

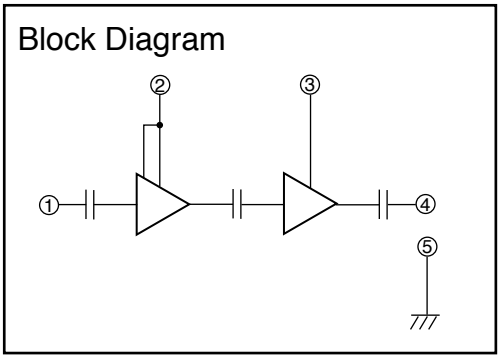


ABSOLUTE MAXIMUM RATING(TC = 25˚C)

Rating	Symbol	Ratings	Unit
Supply voltage	Vcc	17	V
Total current	Icc	10	A
Input power	Pin(max)	600	mW
Output Power	Po(max)	40	W
Operation case temperature	Tc(op)	-30 to + 110	℃
Strage temperature	Tstg	-40 to + 110	℃

Zg=Zl=50Ω

Block Diagram



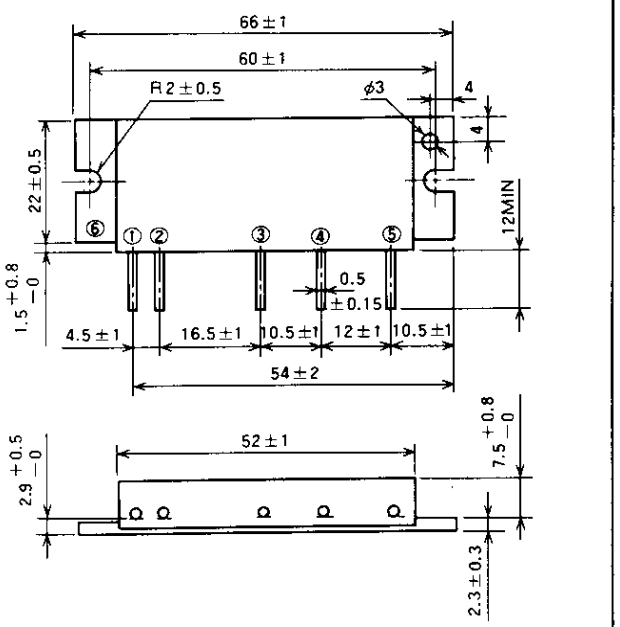
PIN :
① Pin : RF INPUT
② V_{CC1} : 1st. DC SUPPLY
③ V_{CC2} : 2nd. DC SUPPLY
④ PO : RF OUTPUT
⑤ GND : FIN

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
f	Frequency range	$V_{CC1,2}$ = 12.5V Pin = 300mV $Z_G = Z_L = 50\Omega$	220	246	MHz
Po	Output power		30		W
η_T	Total efficiency		40		%
2fo	2nd. harmonic			-30	dBc
3fo	3rd. harmonic			-30	dBc
ρin	Input VSWR			3	-
-	Load VSWR tolerance	$V_{CC1,2}$ = 15.2V Po = 30W(Pin = Controlled) Load VSWR = 20:1 (All phase), Z_G = 50Ω	No degradation or destroy		-

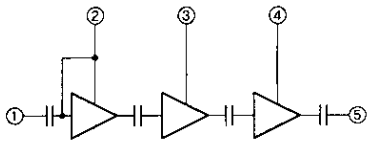
11) M57788M (XA0077)

OUTLINE DRAWING Dimensions in mm



H3

BLOCK DIAGRAM



PIN :
①Pin : RF INPUT
②Vcc1 : 1st. DC SUPPLY
③Vcc2 : 2nd. DC SUPPLY
④Vcc3 : 3rd. DC SUPPLY
⑤Po : RF OUTPUT
⑥GND : FIN

ABSOLUTE MAXIMUM RATINGS (T_C = 25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC1}	Supply voltage		16	V
$V_{CC2,3}$			17	V
I_{CC}	Total current		12	A
$P_{in(max)}$	Input power	$Z_G = Z_L$ = 50 Ω	0.5	W
$P_{O(max)}$	Output power	$Z_G = Z_L$ = 50 Ω	50	W
$T_{C(OP)}$	Operation case temperature		−30~110	℃
T_{stg}	Storage temperature		−40~110	℃

ELECTRICAL CHARACTERISTICS (T_C = 25℃ unless otherwise noted)

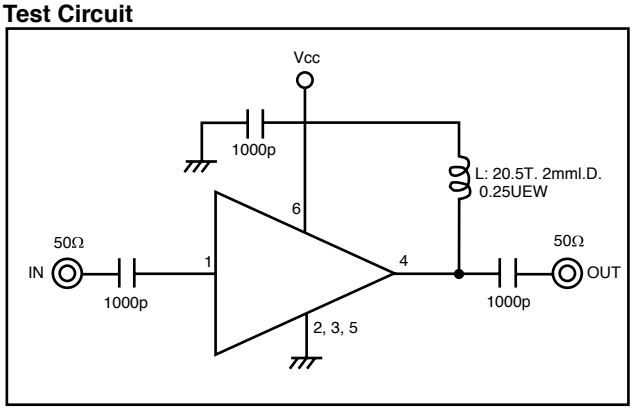
Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
f	Frequency range	P_{in} = 0.4W V_{CC} = 12.5V $Z_G = Z_L$ = 50 Ω	430	450	MHz
P_O	Output power		40		W
η_T	Total efficiency		40		%
2fo	2nd. harmonic			−30	dB
ρ_{in}	Input VSWR			2.8	−
−	Load VSWR tolerance	V_{CC} = 15.2V, P_O = 40W (P_{in} : controlled) Load VSWR=8.8:1 (All phase), 2sec. Z_G = 50 Ω	No degradation		−

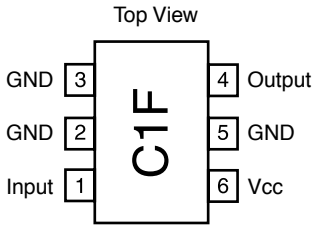
12) µPC2710T (XA0449)

RF Amplifier

Parameter	Symbol	Condition	Ratings	Unit
Supply voltage	Vcc		5.0	V
Circuit current	Icc	Vcc=5V, no signa	22	mA
Power gain	GP	Vcc=5V, f=500MHz	33	dB
Staturated output power	Po(sat)	Vcc=5V, f=500MHz, Pin=-8dBm	+13.5	dBm
Noise figure	NF	Vcc=5V, f=500MHz	3.5	dB
Upper frequency (-3dB)	fu	Vcc=5V, Reference freq. =100MHz	1000	MHz
Isolation	ISL	Vcc=5V, f=500MHz	39	dB
Input return loss	RL in	Vcc=5V, f=500MHz	6	dB
Output return loss	RL out	Vcc=5V, f=500MHz	12	dB
Gain flatness	Gp	Vcc=5V, f=0.1~0.6GHz	0.8	dB

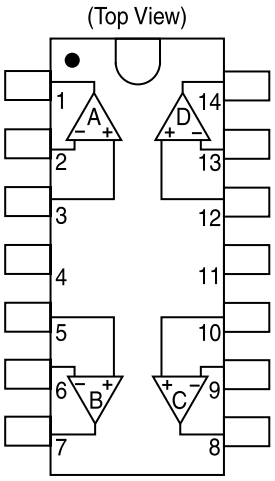
Test Circuit





13) NJM2902 (XA0596)

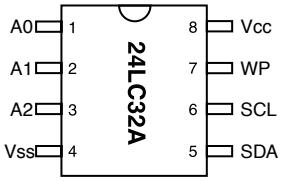
Pin Assignment



1. A OUTPUT
2. A–INPUT
3. A+INPUT
4. V^+
5. B+INPUT
6. B–INPUT
7. B OUTPUT
8. C OUTPUT
9. C–INPUT
10. C+INPUT
11. GND
12. D+INPUT
13. D–INPUT
14. D OUTPUT

14) 24LC32A (XA0604)

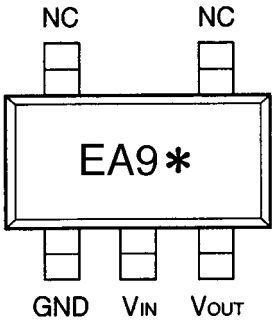
PDIP



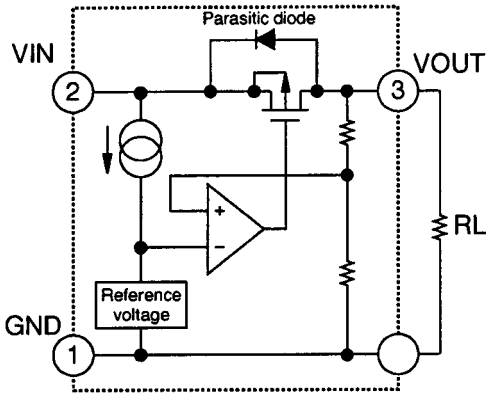
Name	Function
A0..A2	User Configurable Chip Selects
Vss	Ground
SDA	Serial Address/Data I/O
SCL	Serial Clock
WP	Write Protect Input
Vcc	+2.5V~6.0V Power Supply

15) S-80845ALMP-EA9-T2 (XA0620)

Vin=18V
Iout=100mA



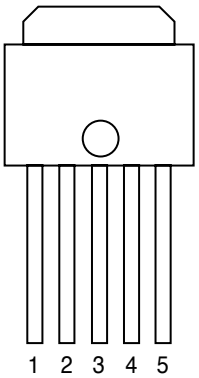
* Lot number



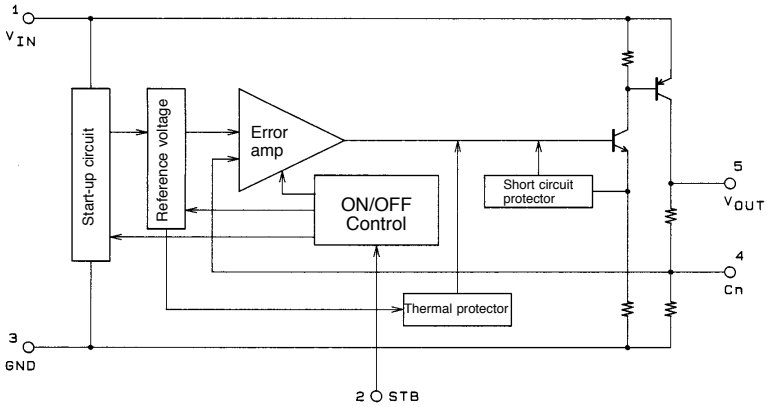
16) L88MS05TLL (XA0675)

5V Voltage Regulator With On/Off Function

Pin Assignment



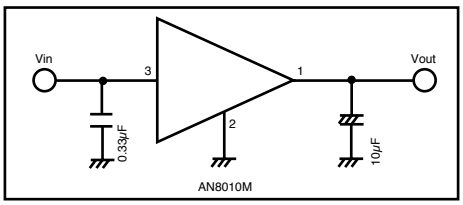
1. VIN
2. STB
3. GND
4. Cn
5. VOUT

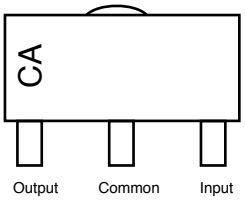


17) AN8010M (XA0119)

Voltage Regulator

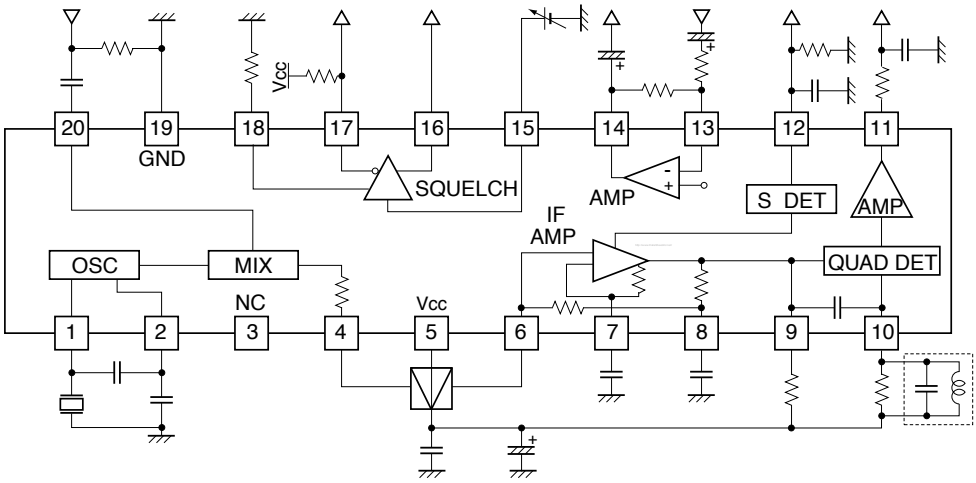
Test Circuit





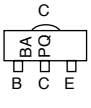
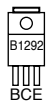
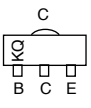
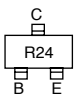
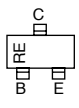
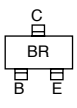
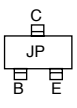
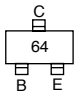
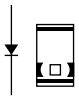
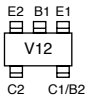
AN8010M

18) TK10489M (XA0314)



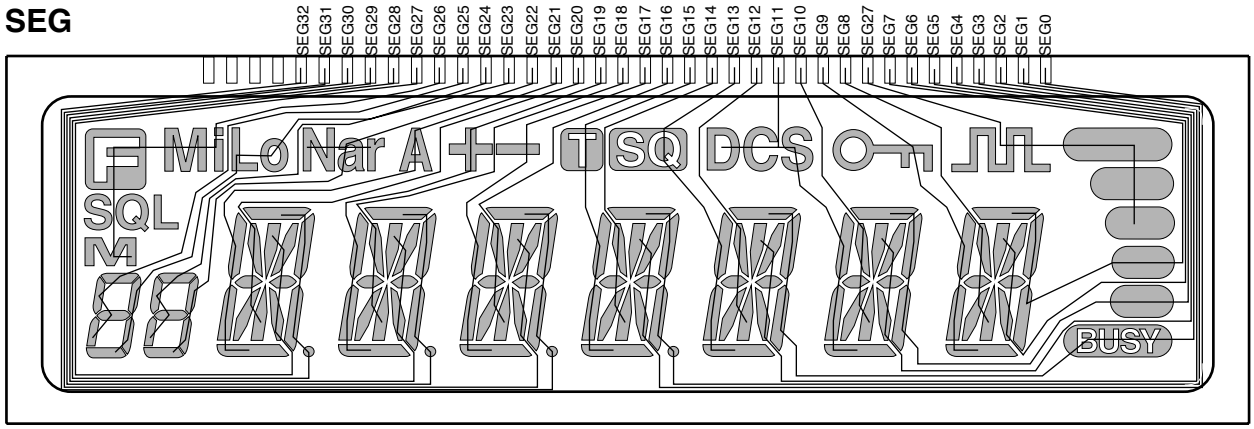
19) Transistor, Diode, and LED Outline Drawings

Top View

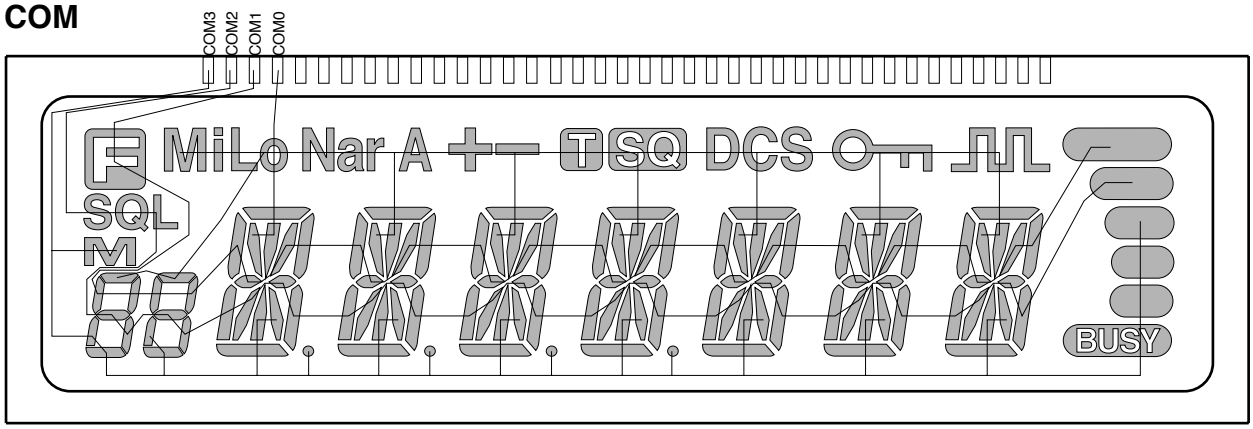
RLS-73 XD0363	1SS355 XD0254	1SS356 XD0272	1SV214 XD0131	1SV237 XD0141	1SV262 XD0300	1SV268 XD0301
						
DA204U XD0130	DAN235U XD0246	DSA3A1 XD0131	MA304 XD0299	MA729 XD0300	MA8100 XD0297	MA742 XD0250
						
MI407 XD0013	2SK508 XE0010	2SK880GR XE0021	3SK131V12 XE0028	2SA1036K XT0110	2SA1576 XT0094	2SA1736 XT0099
						
2SB1132 XT0061	2SB1292F XT0112	2SC2954 XT0084	2SC3356 XT0030	2SC3357 XT0048	2SC4081 XT0095	2SC4099 XT0096
						
2SC4215 XT0124	2SC4226 XT0141	2SC4245 XT0125	3SK184S XE0013	DTA114YU XU0112	DTC114EU XU0131	DTC144EUA XU0148
						
DTC144YU XU0029	FA1111C XL0069	FA1111C XL0077	UDZ5. 1B XD 0165	UMC3TR XU0047	UMC5N XU0152	U1BC44 XD0135
						
XP1215 XU0178						

20) LCD Connection (TTR3626UPFDHN)

SEG

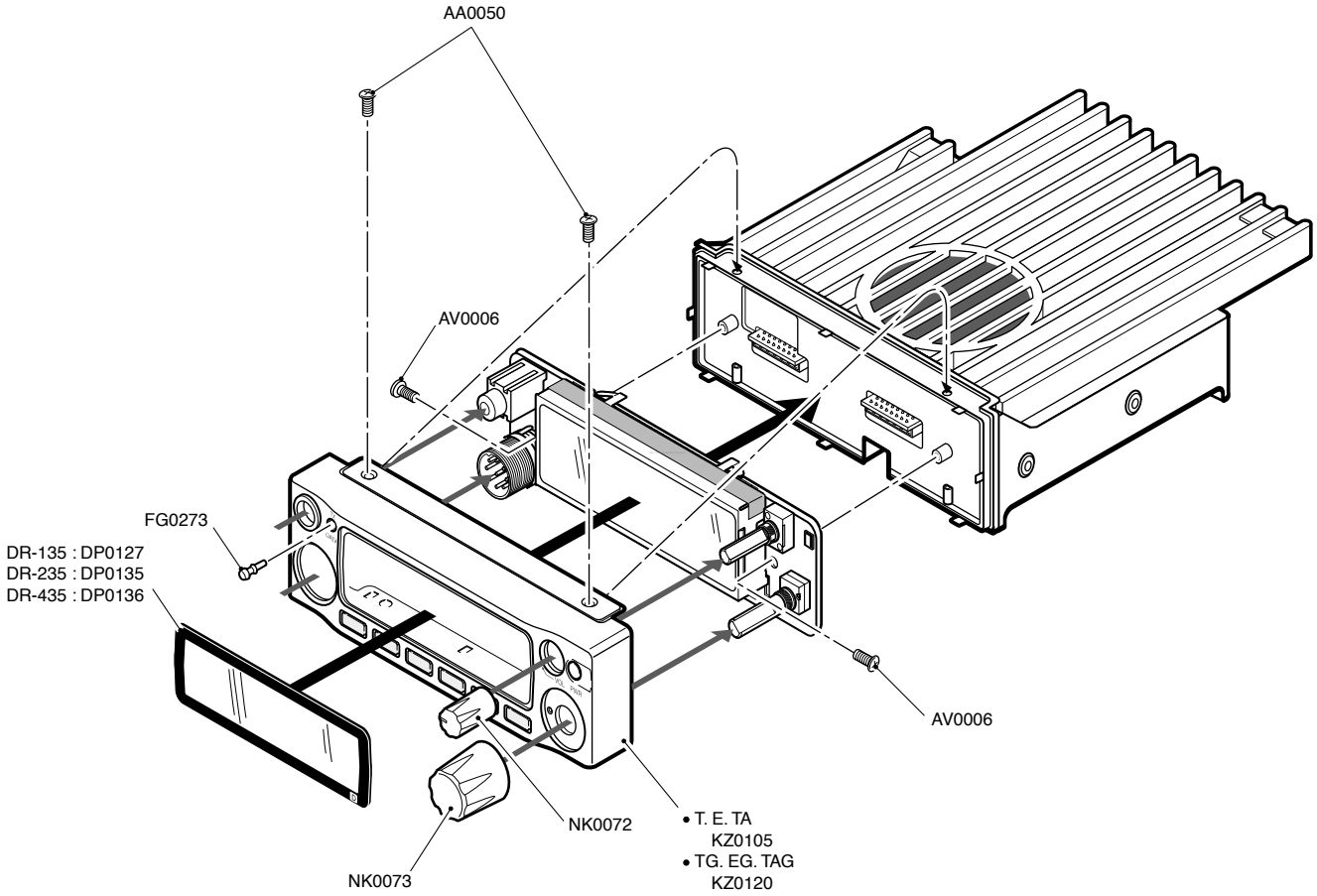


COM

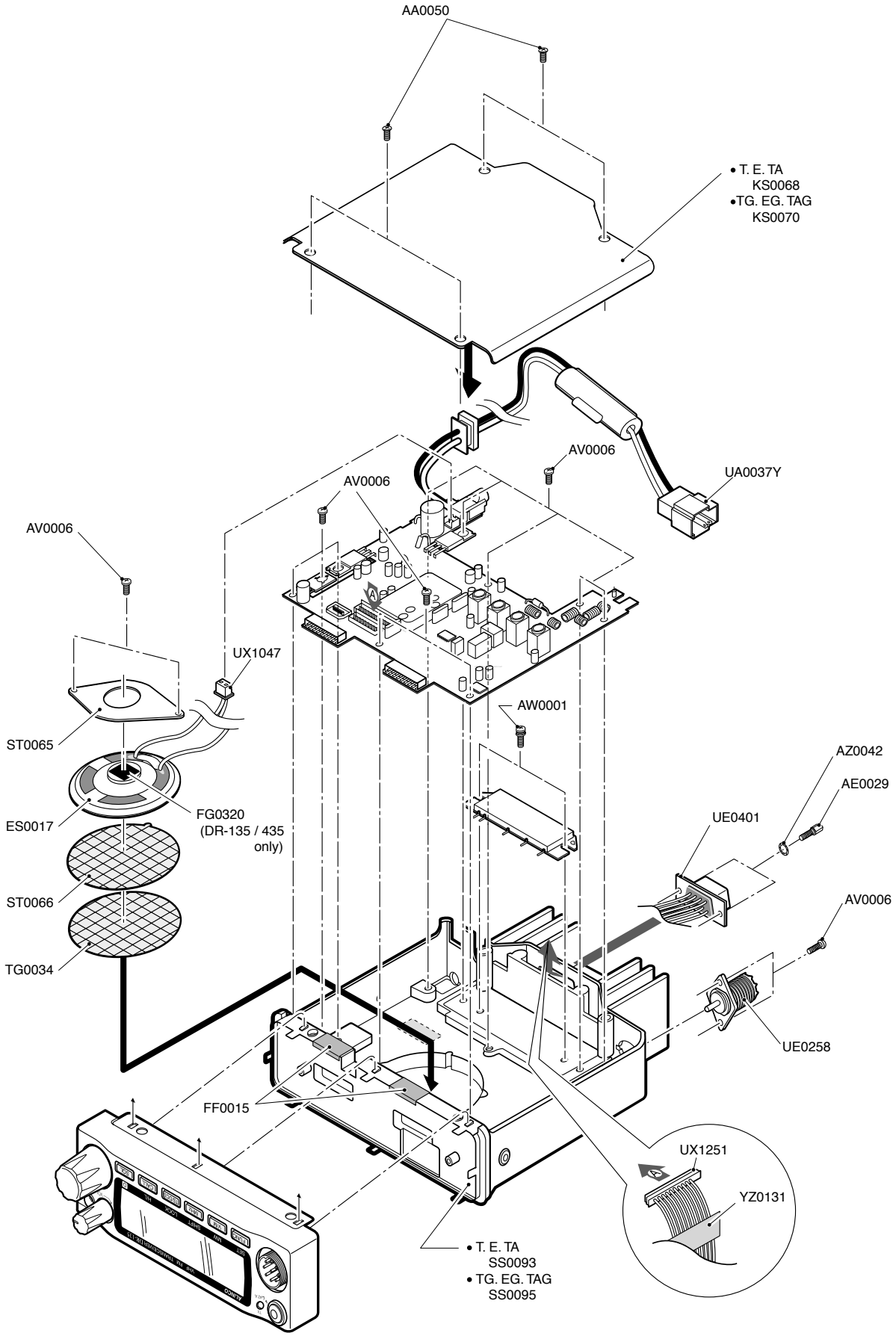


EXPLODED VIEW

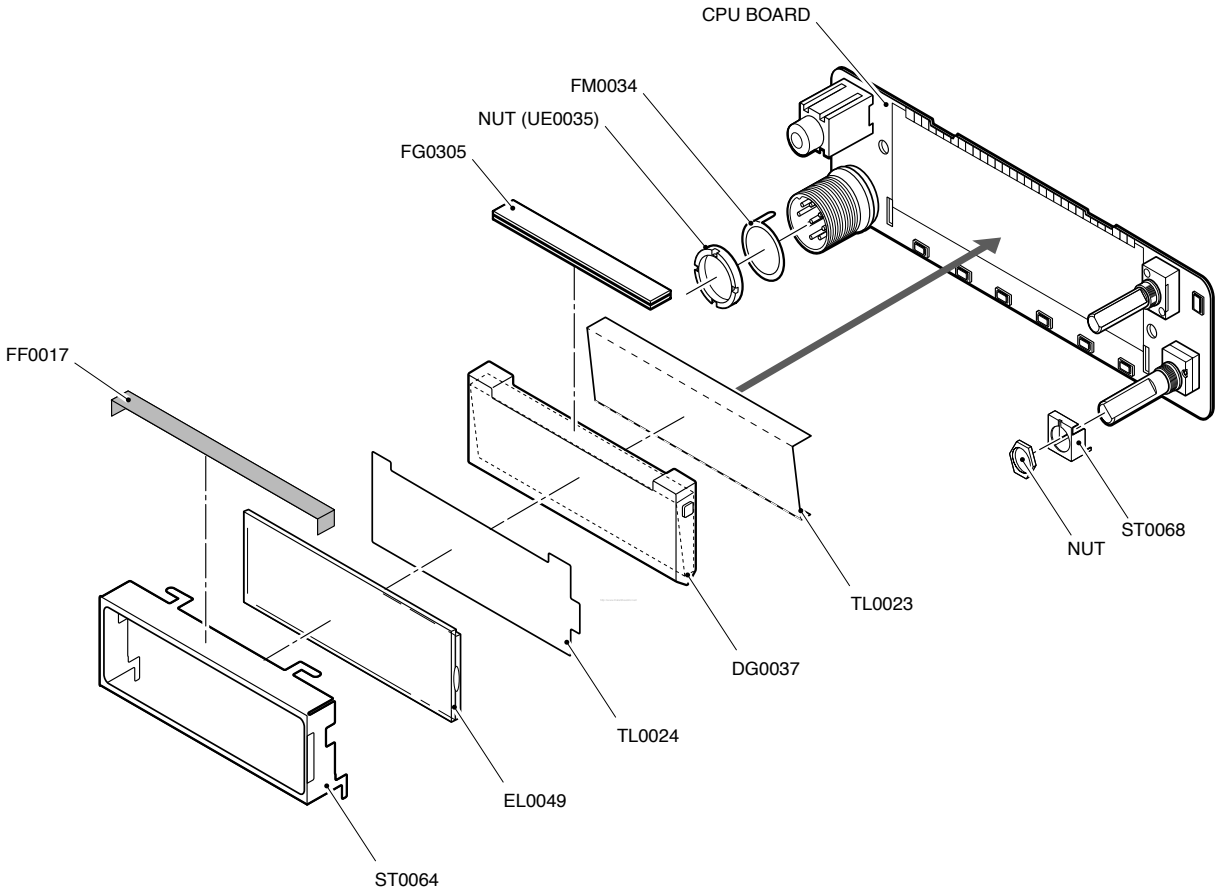
1) Top and Front View



2) Bottom View



3) LCD Assembly



PARTS LIST

CPU

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C1	CU3111	Chip C.	C1608JB1C104KT-N	1	1	1	
C2	CU3111	Chip C.	C1608JB1C104KT-N	1	1	1	
C3	CU3049	Chip C.	C1608JB1E153KT-NS	1	1	1	
C4	CU3049	Chip C.	C1608JB1E153KT-NS	1	1	1	
C5	CU3111	Chip C.	C1608JB1C104KT-N	1	1	1	
C6	CU3023	Chip C.	C1608CH1H101JT-AS	1	1	1	
C7	CU3023	Chip C.	C1608CH1H101JT-AS	1	1	1	
C8	CU3043	Chip C.	C1608JB1H472KT-NS	1	1	1	
C9	CU3111	Chip C.	C1608JB1C104KT-N	1	1	1	
C10	CU3043	Chip C.	C1608JB1H472KT-NS	1	1	1	
C11	CU3043	Chip C.	C1608JB1H472KT-NS	1	1	1	
C12	CU3101	Chip C.	C1608JB1C473KT-NS	1	1	1	
C13	CS0049	Chip tantalum	TMCSA1C105MTR	1	1	1	
C14	CU3014	Chip C.	C1608CH1H180JT-AS	1	1	1	
C15	CU3014	Chip C.	C1608CH1H180JT-AS	1	1	1	
C16	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C17	CS0372	Chip tantalum	TMCMB1C106MTR	1	1	1	
C18	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C19	CU3111	Chip C.	C1608JB1C104KT-N	1	1	1	
C20	CU3101	Chip C.	C1608JB1C473KT-NS	1	1	1	
C21	CU3047	Chip C.	C1608JB1H103KT-N	1	1	1	
C22	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C23	CU3047	Chip C.	C1608JB1H103KT-N	1	1	1	
C24	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C25	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C26	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C27	CU3035	Chip C.	C1608JB1H102KT-AS	1	1	1	
C28	CS0394	Chip tantalum	TMCMB0J476MTR	1	1	1	
C29	CS0049	Chip tantalum	TMCSA1C105MTR	1	1	1	
C30	CS0372	Chip tantalum	TMCMB1C106MTR	1	1	1	
C31	CU3047	Chip C.	C1608JB1H103KT-N	1	1	1	
C32	CU3047	Chip C.	C1608JB1H103KT-N	1	1	1	
CN1	UE0398	Connector	20-5082-3010-17-100	1	1	1	
CN2	UE0398	Connector	20-5082-3010-17-100	1	1	1	
CN3	UE0035	Mic Connector	FM214-8SMPY	1	1	1	
D1	XL0069	Chip LED	FA1111C-TR	1	1	1	
D2	XL0077	Chip LED	FA1111C-TR C,D,ERANK	1	1	1	
D3	XL0077	Chip LED	FA1111C-TR C,D,ERANK	1	1	1	
D4	XL0069	Chip LED	FA1111C-TR	1	1	1	
D5	XL0077	Chip LED	FA1111C-TR C,D,ERANK	1	1	1	
D6	XL0077	Chip LED	FA1111C-TR C,D,ERANK	1	1	1	
D8	XD0254	Chip Diode	1SS355 TE17	1	1	1	
D9	XD0291	Chip Diode	MA729-TX	1	1	1	
D10	XD0135	Chip Diode	U1BC44 TE12R	1	1	1	
D11	XL0077	Chip LED	FA1111C-TR C,D,ERANK	1	1	1	
D12	XD0165	Chip Diode	UDZSTE-17 5.1B	1	1	1	
D13	XD0165	Chip Diode	UDZSTE-17 5.1B	1	1	1	
D14	XD0291	Chip Diode	MA729-TX	1	1	1	
D15	XD0165	Chip Diode	UDZSTE-17 5.1B	1	1	1	
D16	XD0291	Chip Diode	MA729-TX	1	1	1	
D17	XD0291	Chip Diode	MA729-TX	1	1	1	
D19	XD0363	Chip Diode	RLS-73TE-11	1	1	1	
IC1	XA0818	CPU	M38267M8L269GP	1	1	1	
IC2	XA0604	IC	24LC32AT-I/SN	1	1	1	
IC4	XA0620	IC	S-80845ALMP-EA9-T2	1	1	1	
IC5	XA0675	IC	L88MS05TLL-TL	1	1	1	
JK1	UJ0047	Jack	HSJ2013-01-120	1	1	1	
JP3	MACL04GG	Wire	#30AH1-040-H1	1	1	1	T,TG,E,EG
LCD1	EL0049	LCD	TTR3626 UPTDHN	1	1	1	
Q1	XU0029	Chip Transistor	DTC114YUA T106	1	1	1	
Q2	XU0131	Chip Transistor	DTC114EUA T106	1	1	1	
Q3	XT0110	Chip Transistor	2SA1036K T146Q	1	1	1	
Q4	XU0131	Chip Transistor	DTC114EUA T106	1	1	1	
Q5	XU0131	Chip Transistor	DTC114EUA T106	1	1	1	
Q6	XT0095	Chip Transistor	2SC4081 T106R	1	1	1	
Q7	XT0061	Chip Transistor	2SB1132T 100Q	1	1	1	
Q8	XU0029	Chip Transistor	DTC114YUA T106	1	1	1	
Q9	XU0148	Chip Transistor	DTC144EUA T106	1	1	1	
Q10	XU0131	Chip Transistor	DTC114EUA T106	1	1	1	
Q11	XU0112	Chip Transistor	DTA114YUA T106	1	1	1	
Q12	XU0112	Chip Transistor	DTA114YUA T106	1	1	1	
Q13	XU0112	Chip Transistor	DTA114YUA T106	1	1	1	
R1	RK3054	Chip R.	MCR03EZHJ223	1	1	1	
R2	RK3001	Chip R.	MCR03EZHJ000	-	1	-	
R4	RK3054	Chip R.	MCR03EZHJ223	1	1	1	
R5	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R6	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R7	RK3023	Chip R.	MCR03EZHJ560	1	1	1	
R8	RK3023	Chip R.	MCR03EZHJ560	1	1	1	
R9	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R10	RK3032	Chip R.	MCR03EZHJ331	1	1	1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R11	RK3046	Chip R.	MCR03EZHJ472	1	1	1	
R13	RK3001	Chip R.	MCR03EZHJ000	1	-	1	E,EG
R14	RK3048	Chip R.	MCR03EZHJ682	1	1	1	
R15	RK3001	Chip R.	MCR03EZHJ000	-	-	1	
R16	RK3001	Chip R.	MCR03EZHJ000	1	1	1	T,TG
R19	RK3062	Chip R.	MCR03EZHJ104	1	1	1	
R20	RK3046	Chip R.	MCR03EZHJ472	1	1	1	
R21	RK3030	Chip R.	MCR03EZHJ221	1	1	1	
R22	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R23	RK3064	Chip R.	MCR03EZHJ154	1	1	1	
R24	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R25	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R26	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R27	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R28	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R29	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R30	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R31	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R32	RK3044	Chip R.	MCR03EZHJ332	1	1	1	
R33	RK3034	Chip R.	MCR03EZHJ471	1	1	1	
R34	RK3047	Chip R.	MCR03EZHJ562	1	1	1	
R35	RK3052	Chip R.	MCR03EZHJ153	1	1	1	
R36	RK3062	Chip R.	MCR03EZHJ104	1	1	1	
R37	RK3049	Chip R.	MCR03EZHJ822	1	1	1	
R38	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R39	RK3058	Chip R.	MCR03EZHJ473	1	1	1	
R40	RK3062	Chip R.	MCR03EZHJ104	1	1	1	
R41	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R42	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R43	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R44	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R45	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R47	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R48	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R49	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R50	RK3070	Chip R.	MCR03EZHJ474	1	1	1	
R51	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R52	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R53	RK3062	Chip R.	MCR03EZHJ104	1	1	1	
R54	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R55	RK3074	Chip R.	MCR03EZHJ105	1	1	1	
R56	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R57	RK3066	Chip R.	MCR03EZHJ224	1	1	1	
R58	RK3034	Chip R.	MCR03EZHJ471	1	1	1	
R59	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R60	RK3034	Chip R.	MCR03EZHJ471	1	1	1	
R61	RK3074	Chip R.	MCR03EZHJ105	1	1	1	
R62	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R63	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R64	RK3046	Chip R.	MCR03EZHJ472	1	1	1	
R65	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R66	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R67	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R68	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R69	RK3046	Chip R.	MCR03EZHJ472	1	1	1	
R70	RK3062	Chip R.	MCR03EZHJ104	1	1	1	
R71	RK3072	Chip R.	MCR03EZHJ684	1	1	1	
R72	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R73	RK3032	Chip R.	MCR03EZHJ331	1	1	1	
R74	RK3026	Chip R.	MCR03EZHJ101	1	1	1	
R75	RK3046	Chip R.	MCR03EZHJ472	1	1	1	
R76	RK3032	Chip R.	MCR03EZHJ331	1	1	1	
R77	RK3028	Chip R.	MCR03EZHJ151	1	1	1	
R79	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R80	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R82	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R83	RK3038	Chip R.	MCR03EZHJ102	1	1	1	
R84	RK0008	Chip R.	ERJ6GEYJ330V	1	1	1	
R85	RK3046	Chip R.	MCR03EZHJ472	1	1	1	
R86	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R87	RK3054	Chip R.	MCR03EZHJ223	1	1	1	
R88	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R89	RK3058	Chip R.	MCR03EZHJ473	1	1	1	
R90	RK3058	Chip R.	MCR03EZHJ473	1	1	1	
R91	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
R92	RK3032	Chip R.	MCR03EZHJ331	1	1	1	
R95	RK3062	Chip R.	MCR03EZHJ104	1	1	1	
R96	RK4014	Chip R.	ERJ12YJ100U	1	1	1	
R97	RK3050	Chip R.	MCR03EZHJ103	1	1	1	
RE1	UR0015	Dial	RH90N74E20-A90770	1	1	1	
RL1	UL0020	Relay	ATQ209	1	1	1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
SW1	UU0015Z	Switch	EVQPPXA25	1	1	1	
SW2	UU0015Z	Switch	EVQPPXA25	1	1	1	
SW3	UU0015Z	Switch	EVQPPXA25	1	1	1	
SW4	UU0015Z	Switch	EVQPPXA25	1	1	1	
SW5	UU0015Z	Switch	EVQPPXA25	1	1	1	
SW6	UU0015Z	Switch	EVQPPXA25	1	1	1	
SW7	UU0015Z	Switch	EVQPPXA25	1	1	1	
VR1	RV0035	Variable	EVUF2JFK4B14	1	1	1	
W1	UX1270	Wire	WIRE DR235 W1	1	1	1	
X1	XQ0131	Xtal	CSA310/3.6864MHz	1	1	1	
	TL0024		DIFFUSION SHEET 135	1	1	1	
	YZ0042		CEMENT G17 / 1G	1	1	1	
	ST0068		DIAL FITTING	1	1	1	
	FG0305		LCD RUB.CONNECT. 135	1	1	1	
	TL0023		REFLECTION DR135	1	1	1	
	DG0037		LCD LIGHT DR135	1	1	1	
	FM0034		MIC GND PLATE	1	1	1	
	FP0034		MIC SPACER DR110	1	1	1	
	ST0064		LCD HOLDER DR135	1	1	1	

Main Unit (DR-135)

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C101	CU3047	Chip C.	C1608JB1H103KT-N	1			
C102	CU3047	Chip C.	C1608JB1H103KT-N	1			
C103	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C104	CU3047	Chip C.	C1608JB1H103KT-N	1			
C105	CS0394	Chip tantalum	TMCMB0J476MTR	1			
C106	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C107	CU3111	Chip C.	C1608JB1C104KT-N	1			
C108	CU3047	Chip C.	C1608JB1H103KT-N	1			
C109	CS0216	Chip tantalum	TMCMB1A106MTR	1			
C110	CU3047	Chip C.	C1608JB1H103KT-N	1			
C111	CU3047	Chip C.	C1608JB1H103KT-N	1			
C112	CU3047	Chip C.	C1608JB1H103KT-N	1			
C113	CU3047	Chip C.	C1608JB1H103KT-N	1			
C114	CU3047	Chip C.	C1608JB1H103KT-N	1			
C115	CU3047	Chip C.	C1608JB1H103KT-N	1			
C116	CU3047	Chip C.	C1608JB1H103KT-N	1			
C117	CU3047	Chip C.	C1608JB1H103KT-N	1			
C118	CU3049	Chip C.	C1608JB1E153KT-NS	1			
C119	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C120	CU3021	Chip C.	C1608CH1H680JT-AS	1			
C121	CU3005	Chip C.	C1608CH1H040CT-AS	1			
C122	CU3002	Chip C.	C1608CH1H010CT-AS	1			
C123	CU3015	Chip C.	C1608CH1H220JT-AS	1			
C124	CU3040	Chip C.	C1608JB1H272KT-NS	1			
C125	CU3044	Chip C.	C1608JB1H562KT-NS	1			
C126	CU3038	Chip C.	C1608JB1H182KT-AS	1			
C127	CU3041	Chip C.	C1608JB1H332KT-NS	1			
C129	CU3111	Chip C.	C1608JB1C104KT-N	1			
C130	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C132	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C133	CU3005	Chip C.	C1608CH1H040CT-AS	1			
C134	CU3042	Chip C.	C1608JB1H392KT-NS	1			
C135	CU3044	Chip C.	C1608JB1H562KT-NS	1			
C137	CU3017	Chip C.	C1608CH1H330JT-AS	1			
C138	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C139	CU3017	Chip C.	C1608CH1H330JT-AS	1			
C140	CU3017	Chip C.	C1608CH1H330JT-AS	1			
C141	CU3111	Chip C.	C1608JB1C104KT-N	1			
C142	CU3111	Chip C.	C1608JB1C104KT-N	1			
C143	CU3111	Chip C.	C1608JB1C104KT-N	1			
C144	CU3047	Chip C.	C1608JB1H103KT-N	1			
C145	CU3003	Chip C.	C1608CH1H020CT-AS	1			
C146	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C148	CU3017	Chip C.	C1608CH1H330JT-AS	1			
C149	CU3017	Chip C.	C1608CH1H330JT-AS	1			
C150	CU3005	Chip C.	C1608CH1H040CT-AS	1			
C151	CU3047	Chip C.	C1608JB1H103KT-N	1			
C152	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C153	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C154	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C155	CU3007	Chip C.	C1608CH1H060CT-A	1			
C156	CU3047	Chip C.	C1608JB1H103KT-N	1			
C157	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C158	CU3013	Chip C.	C1608CH1H150JT-AS	1			
C159	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C160	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C161	CU3111	Chip C.	C1608JB1C104KT-N	1			
C162	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C165	CU3111	Chip C.	C1608JB1C104KT-N	1			
C167	CU3047	Chip C.	C1608JB1H103KT-N	1			
C168	CU3111	Chip C.	C1608JB1C104KT-N	1			
C169	CU3027	Chip C.	C1608CH1H221JT-AS	1			
C171	CU3111	Chip C.	C1608JB1C104KT-N	1			
C172	CU3035	Chip C.	C1608JB1H102KT-AS	1			

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C173	CU3037	Chip C.	C1608JB1H152KT-AS	1			
C174	CU3029	Chip C.	C1608JB1H331KT-AS	1			
C175	CU3111	Chip C.	C1608JB1C104KT-N	1			
C176	CU3018	Chip C.	C1608CH1H390JT-AS	1			
C177	CU3018	Chip C.	C1608CH1H390JT-AS	1			
C179	CU3111	Chip C.	C1608JB1C104KT-N	1			
C180	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C181	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C182	CU3047	Chip C.	C1608JB1H103KT-N	1			
C183	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C184	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C185	CS0232	Chip tantalum	TMCMA1V474MTR	1			
C186	CU3008	Chip C.	C1608CH1H070CT-A	1			
C187	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C188	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C189	CU3011	Chip C.	C1608CH1H100DT-AS	1			
C190	CU3047	Chip C.	C1608JB1H103KT-N	1			
C191	CU3102	Chip C.	C1608JB1C333KT-NS	1			
C192	CU3047	Chip C.	C1608JB1H103KT-N	1			
C193	CU4033	Chip C.	GRM42-6X7R102K500PT	1			
C194	CU3012	Chip C.	C1608CH1H120JT-AS	1			
C195	CU3012	Chip C.	C1608CH1H120JT-AS	1			
C196	CU3023	Chip C.	C1608CH1H101JT-AS	1			
C197	CU4003	Chip C.	GRM42-6CK020C500PT	1			
C198	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C199	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C200	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C201	CU4014	Chip C.	GRM42-6CH180J500PT	1			
C202	CU4016	Chip C.	GRM42-6CH270J500PT	1			
C203	CU4016	Chip C.	GRM42-6CH270J500PT	1			
C204	CU4013	Chip C.	GRM42-6CH150J500PT	1			
C205	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C206	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C207	CU3002	Chip C.	C1608CH1H010CT-AS	1			
C208	CU3002	Chip C.	C1608CH1H010CT-AS	1			
C209	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C210	CU3003	Chip C.	C1608CH1H020CT-AS	1			
C211	CU3003	Chip C.	C1608CH1H020CT-AS	1			
C212	CE0364	Electrolytic C.	16MV 47SWB+TS	1			
C213	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C214	CU3015	Chip C.	C1608CH1H220JT-AS	1			
C215	CU4016	Chip C.	GRM42-6CH270J500PT	1			
C216	CU4016	Chip C.	GRM42-6CH270J500PT	1			
C217	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C218	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C219	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C220	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C221	CU3047	Chip C.	C1608JB1H103KT-N	1			
C222	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C223	CE0364	Electrolytic C.	16MV 47SWB+TS	1			
C224	CU3023	Chip C.	C1608CH1H101JT-AS	1			
C225	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C226	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C227	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C228	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C229	CU3101	Chip C.	C1608JB1C473KT-NS	1			
C230	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C231	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C232	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C233	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C234	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C235	CU3014	Chip C.	C1608CH1H180JT-AS	1			
C236	CU3014	Chip C.	C1608CH1H180JT-AS	1			
C237	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C238	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C239	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C240	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C241	CU3022	Chip C.	C1608CH1H820JT-AS	1			
C242	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C243	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C244	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C245	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C246	CU3043	Chip C.	C1608JB1H472KT-NS	1			
C247	CU3111	Chip C.	C1608JB1C104KT-N	1			
C248	CU3047	Chip C.	C1608JB1H103KT-N	1			
C249	CU3038	Chip C.	C1608JB1H182KT-AS	1			
C250	CU3026	Chip C.	C1608CH1H181JT-AS	1			
C251	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C252	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C253	CU3111	Chip C.	C1608JB1C104KT-N	1			
C254	CU3111	Chip C.	C1608JB1C104KT-N	1			
C255	CE0364	Electrolytic C.	16MV 47SWB+TS	1			
C256	CU3111	Chip C.	C1608JB1C104KT-N	1			
C257	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C258	CS0049	Chip tantalum	TMCSA1C105MTR	1			
C259	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C260	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C261	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C262	CU3035	Chip C.	C1608JB1H102KT-AS	1			

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C263	CE0100	Electrolytic C.	16MV 22UW	1			
C264	CU3031	Chip C.	C1608JB1H471KT-AS	1			
C265	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C266	CU3064	Chip C.	C1608CH1H1R5CT-AS	1			
C267	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C268	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C269	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C270	CU3047	Chip C.	C1608JB1H103KT-N	1			
C271	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C272	CS0220	Chip tantalum	TMCMA1C225MTR	1			
C273	CS0220	Chip tantalum	TMCMA1C225MTR	1			
C274	CU3016	Chip C.	C1608CH1H270JT-AS	1			
C275	CU3047	Chip C.	C1608JB1H103KT-N	1			
C276	CE0339	Electrolytic C.	16MV 10SWB+TS	1			
C277	CE0343	Electrolytic C.	16MV 1000HC+T	1			
C278	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C279	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C280	CU3016	Chip C.	C1608CH1H270JT-AS	1			
C281	CU3009	Chip C.	C1608CH1H080CT-A	1			
C282	CU3064	Chip C.	C1608CH1H1R5CT-AS	1			
C283	CU3027	Chip C.	C1608CH1H221JT-AS	1			
C284	CU3002	Chip C.	C1608CH1H010CT-AS	1			
C285	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C286	CU3027	Chip C.	C1608CH1H221JT-AS	1			
C287	CS0063	Chip tantalum	TMCSA1V104MTR	1			
C288	CU3011	Chip C.	C1608CH1H100DT-AS	1			
C289	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C290	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C291	CU3011	Chip C.	C1608CH1H100DT-AS	1			
C292	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C293	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C294	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C295	CU3047	Chip C.	C1608JB1H103KT-N	1			
C296	CU3011	Chip C.	C1608CH1H100DT-AS	1			
C297	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C298	CU3009	Chip C.	C1608CH1H080CT-A	1			
C299	CU3047	Chip C.	C1608JB1H103KT-N	1			
C300	CU3015	Chip C.	C1608CH1H220JT-AS	1			
C301	CU3023	Chip C.	C1608CH1H101JT-AS	1			
C302	CU3023	Chip C.	C1608CH1H101JT-AS	1			
C303	CU3023	Chip C.	C1608CH1H101JT-AS	1			
C304	CU3047	Chip C.	C1608JB1H103KT-N	1			
C305	CU3047	Chip C.	C1608JB1H103KT-N	1			
C306	CU3111	Chip C.	C1608JB1C104KT-N	1			
C307	CU3047	Chip C.	C1608JB1H103KT-N	1			
C308	CE0342	Electrolytic C.	16MV 470HC+TS	1			
C309	CU3051	Chip C.	C1608JB1E223KT-NS	1			
C310	CU3023	Chip C.	C1608CH1H101JT-AS	1			
C311	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C312	CU3011	Chip C.	C1608CH1H100DT-AS	1			
C313	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C314	CS0237	Chip tantalum	TMCMA1A475MTR	1			
C315	CS0237	Chip tantalum	TMCMA1A475MTR	1			
C316	CS0237	Chip tantalum	TMCMA1A475MTR	1			
C317	CS0237	Chip tantalum	TMCMA1A475MTR	1			
C318	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C319	CS0237	Chip tantalum	TMCMA1A475MTR	1			
C320	CS0237	Chip tantalum	TMCMA1A475MTR	1			
C321	CS0220	Chip tantalum	TMCMA1C225MTR	1			
C322	CU3035	Chip C.	C1608JB1H102KT-AS	1			
C323	CU3018	Chip C.	C1608CH1H390JT-AS	1			
C324	CU3016	Chip C.	C1608CH1H270JT-AS	1			
C325	CU3018	Chip C.	C1608CH1H390JT-AS	1			
C326	CU3029	Chip C.	C1608JB1H331KT-AS	1			
C327	CU3034	Chip C.	C1608JB1H821KT-AS	1			
CN101	UE0369	Connector	AXN49301616	1			
CN102	UE0397	Connector	10-5082-3110-17-100	1			
CN103	UE0397	Connector	10-5082-3110-17-100	1			
CN104	UA0037Y	Wire	DC CABLE UA0037	1			
CN105	UE0394	Connector	PI28A15M	1			
CN106	UE0043	Connector	PI22A02M	1			
CN107	UE0393	Connector	PI28A11M	1			
CN110	UE0341	Connector	PI28A02M	1			
D101	XD0246	Chip Diode	DAN235UT 106	1			
D102	XD0299	Chip Diode	MA304-TX	1			
D103	XD0299	Chip Diode	MA304-TX	1			
D104	XD0299	Chip Diode	MA304-TX	1			
D105	XD0299	Chip Diode	MA304-TX	1			
D106	XD0250	Chip Diode	MA742 TX	1			
D107	XD0246	Chip Diode	DAN235UT 106	1			
D108	XD0130	Chip Diode	DA204U T106	1			
D109	XD0301	Chip Diode	1SV268-TD	1			
D110	XD0013	Diode	MI407	1			
D111	XD0250	Chip Diode	MA742 TX	1			
D112	XD0250	Chip Diode	MA742 TX	1			
D113	XD0254	Chip Diode	1SS355 TE17	1			
D114	XD0246	Chip Diode	DAN235UT 106	1			
D115	XD0254	Chip Diode	1SS355 TE17	1			
D116	XD0165	Chip Diode	UDZSTE-17 5.1B	1			

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
D117	XD0254	Chip Diode	1SS355 TE17	1			
D118	XD0130	Chip Diode	DA204U T106	1			
D119	XD0254	Chip Diode	1SS355 TE17	1			
D120	XD0131	Chip Diode	1SV214 TPH4	1			
D121	XD0274	Diode	DSA3A1	1			
D122	XD0300	Chip Diode	1SV262TPH2	1			
D123	XD0300	Chip Diode	1SV262TPH2	1			
D124	XD0131	Chip Diode	1SV214 TPH4	1			
D125	XD0272	Chip Diode	1SS356 TW11	1			
D126	XD0254	Chip Diode	1SS355 TE17	1			
D127	XD0165	Chip Diode	UDZSTE-17 5.1B	1			
D128	XD0291	Chip Diode	MA729-TX	1			
D129	XD0291	Chip Diode	MA729-TX	1			
D130	XD0254	Chip Diode	1SS355 TE17	1			
FL101	XC0070	Ceramic Filter	ALFYM450E=K	1			
FL102	XC0052	Ceramic Filter	ALFYM450G=K	1			
IC101	XA0675	IC	L88MS05TLL-TL	1			
IC102	XA0348	IC	TC4W53FU(TE12)	1			
IC103	XA0348	IC	TC4W53FU(TE12)	1			
IC104	XA0596	IC	NJM2902V-TE1	1			
IC108	XA0223	IC	TK10930VTL	1			
IC109	XA0115	IC	TC4S66F TE85R	1			
IC110	XA0412	IC	M67746	1			
IC111	XA0236	IC	BU4052BCF-E2	1			
IC112	XA0449	IC	UPC2710T-E3	1			
IC113	XA0348	IC	TC4W53FU(TE12)	1			
IC114	XA0068	IC	M5218AFP/600E	1			
IC115	XA0102	IC	NJM7808FA	1			
IC116	XA0352	IC	M64076GP	1			
IC117	XA0410	IC	LA4425A	1			
JK101	UJ0046	Jack	MJ82-1	1			
JK102	UJ0024Z	Jack	LGY6501-0600	1			
L101	QC0043	Chip Inductor	NL322522T-2R2J-3	1			
L102	QA0084	Coil	HELICAL FILTER	1			
L103	QA0084	Coil	HELICAL FILTER	1			
L104	QA0084	Coil	HELICAL FILTER	1			
L105	QA0084	Coil	HELICAL FILTER	1			
L106	QC0067	Chip Inductor	NL322522T-R10JA	1			
L107	QC0065	Chip Inductor	NL322522T-068JA	1			
L108	QC0065	Chip Inductor	NL322522T-068JA	1			
L111	QKA45E	Coil	MR3.0 4.5T 0.8	1			
L112	QKA35D	Coil	MR3.0 3.5T 0.6	1			
L113	QKA45E	Coil	MR3.0 4.5T 0.8	1			
L114	QKA45E	Coil	MR3.0 4.5T 0.8	1			
L115	QKA45E	Coil	MR3.0 4.5T 0.8	1			
L116	QKA45E	Coil	MR3.0 4.5T 0.8	1			
L117	QC0065	Chip Inductor	NL322522T-068JA	1			
L118	QKA95D	Coil	MR3.0 9.5T 0.6	1			
L119	QC0039	Chip Inductor	NL322522T-1R0J-3	1			
L120	QC0063	Chip Inductor	NL322522T-047JA	1			
L121	QC0043	Chip Inductor	NL322522T-2R2J-3	1			
L122	QC0040	Chip Inductor	NL322522T-1R2J-3	1			
L123	QA0127	Coil	VCO QA0127 5CBM	1			
L124	QC0442	Chip Inductor	MLF1608A1R0K-T	1			
L125	QC0430	Chip Inductor	MLF1608DR10K-T	1			
L126	QC0040	Chip Inductor	NL322522T-1R2J-3	1			
L127	QC0126	Chip Inductor	NL322522T-R22J-3	1			
L128	QC0125	Chip Inductor	NL322522T-R18J-3	1			
Q101	XU0131	Chip Transistor	DTC114EUA T106	1			
Q102	XU0131	Chip Transistor	DTC114EUA T106	1			
Q103	XU0047	Chip Transistor	UMC3NTR	1			
Q104	XU0131	Chip Transistor	DTC114EUA T106	1			
Q105	XT0096	Chip Transistor	2SC4099 T106N	1			
Q106	XE0028	FET	3SK131V12-T1	1			
Q107	XE0028	FET	3SK131V12-T1	1			
Q108	XU0131	Chip Transistor	DTC114EUA T106	1			
Q110	XU0131	Chip Transistor	DTC114EUA T106	1			
Q111	XE0021	FET	2SK880GR TE85L	1			
Q112	XT0096	Chip Transistor	2SC4099 T106N	1			
Q113	XU0047	Chip Transistor	UMC3NTR	1			
Q114	XU0131	Chip Transistor	DTC114EUA T106	1			
Q115	XT0084	Chip Transistor	2SC2954 T1	1			
Q116	XT0112	Transistor	2SB1292F	1			
Q117	XT0095	Chip Transistor	2SC4081 T106R	1			
Q118	XT0094	Chip Transistor	2SA1576A T106R	1			
Q119	XU0148	Chip Transistor	DTC144EUA T106	1			
Q120	XU0131	Chip Transistor	DTC114EUA T106	1			
Q121	XU0178	Chip Transistor	XP1215-TX	1			
Q122	XT0099	Chip Transistor	2SA1736 TE12R	1			
Q123	XT0061	Chip Transistor	2SB1132T 100Q	1			
Q124	XU0047	Chip Transistor	UMC3NTR	1			
Q125	XE0021	FET	2SK880GR TE85L	1			
Q126	XU0131	Chip Transistor	DTC114EUA T106	1			
Q127	XT0095	Chip Transistor	2SC4081 T106R	1			
Q128	XU0131	Chip Transistor	DTC114EUA T106	1			
Q129	XU0148	Chip Transistor	DTC144EUA T106	1			
Q130	XU0112	Chip Transistor	DTA114YUA T106	1			
Q131	XE0010	FET	2SK508K52 T2B	1			
Q132	XU0131	Chip Transistor	DTC114EUA T106	1			

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
Q133	XU0131	Chip Transistor	DTC114EUA T106	1			
Q134	XT0124	Chip Transistor	2SC4215-Y(TE85L)	1			
Q135	XT0124	Chip Transistor	2SC4215-Y(TE85L)	1			
Q136	XU0148	Chip Transistor	DTC144EUA T106	1			
Q137	XU0131	Chip Transistor	DTC114EUA T106	1			
Q138	XU0131	Chip Transistor	DTC114EUA T106	1			
Q139	XT0095	Chip Transistor	2SC4081 T106R	1			
Q140	XT0095	Chip Transistor	2SC4081 T106R	1			
Q141	XU0148	Chip Transistor	DTC144EUA T106	1			
Q142	XU0148	Chip Transistor	DTC144EUA T106	1			
R101	RK3050	Chip R.	MCR03EZHJ103	1			
R102	RK3091	Chip R.	MCR03EZPFX3902	1			
R103	RK3091	Chip R.	MCR03EZPFX3902	1			
R104	RK3050	Chip R.	MCR03EZHJ103	1			
R105	RK3028	Chip R.	MCR03EZHJ151	1			
R106	RK3026	Chip R.	MCR03EZHJ101	1			
R107	RK3026	Chip R.	MCR03EZHJ101	1			
R109	RK3026	Chip R.	MCR03EZHJ101	1			
R110	RK3026	Chip R.	MCR03EZHJ101	1			
R111	RK3026	Chip R.	MCR03EZHJ101	1			
R112	RK3026	Chip R.	MCR03EZHJ101	1			
R113	RK3042	Chip R.	MCR03EZHJ222	1			
R114	RK3041	Chip R.	MCR03EZHJ182	1			
R115	RK3043	Chip R.	MCR03EZHJ272	1			
R116	RK3034	Chip R.	MCR03EZHJ471	1			
R117	RK3062	Chip R.	MCR03EZHJ104	1			
R118	RK3026	Chip R.	MCR03EZHJ101	1			
R119	RK3052	Chip R.	MCR03EZHJ153	1			
R120	RK3045	Chip R.	MCR03EZHJ392	1			
R121	RK3063	Chip R.	MCR03EZHJ124	1			
R122	RK3059	Chip R.	MCR03EZHJ563	1			
R123	RK3061	Chip R.	MCR03EZHJ823	1			
R124	RK3057	Chip R.	MCR03EZHJ393	1			
R125	RK3038	Chip R.	MCR03EZHJ102	1			
R126	RK3052	Chip R.	MCR03EZHJ153	1			
R128	RK3058	Chip R.	MCR03EZHJ473	1			
R129	RK3050	Chip R.	MCR03EZHJ103	1			
R130	RK3060	Chip R.	MCR03EZHJ683	1			
R131	RK3061	Chip R.	MCR03EZHJ823	1			
R132	RK3050	Chip R.	MCR03EZHJ103	1			
R133	RK3037	Chip R.	MCR03EZHJ821	1			
R134	RK3055	Chip R.	MCR03EZHJ273	1			
R135	RK3062	Chip R.	MCR03EZHJ104	1			
R136	RK3050	Chip R.	MCR03EZHJ103	1			
R137	RK3067	Chip R.	MCR03EZHJ274	1			
R138	RK3059	Chip R.	MCR03EZHJ563	1			
R139	RK3050	Chip R.	MCR03EZHJ103	1			
R140	RK3072	Chip R.	MCR03EZHJ684	1			
R141	RK3064	Chip R.	MCR03EZHJ154	1			
R142	RK3054	Chip R.	MCR03EZHJ223	1			
R143	RK3043	Chip R.	MCR03EZHJ272	1			
R144	RK3042	Chip R.	MCR03EZHJ222	1			
R147	RK3050	Chip R.	MCR03EZHJ103	1			
R148	RK3062	Chip R.	MCR03EZHJ104	1			
R150	RK3001	Chip R.	MCR03EZHJ000	1			
R151	RK3050	Chip R.	MCR03EZHJ103	1			
R152	RK3001	Chip R.	MCR03EZHJ000	1			
R153	RK3048	Chip R.	MCR03EZHJ682	1			
R154	RK3042	Chip R.	MCR03EZHJ222	1			
R155	RK3052	Chip R.	MCR03EZHJ153	1			
R156	RK3034	Chip R.	MCR03EZHJ471	1			
R157	RK3062	Chip R.	MCR03EZHJ104	1			
R158	RK3030	Chip R.	MCR03EZHJ221	1			
R160	RK3062	Chip R.	MCR03EZHJ104	1			
R161	RK3062	Chip R.	MCR03EZHJ104	1			
R162	RK3021	Chip R.	MCR03EZHJ390	1			
R163	RK3014	Chip R.	MCR03EZHJ100	1			
R164	RK3014	Chip R.	MCR03EZHJ100	1			
R165	RK3074	Chip R.	MCR03EZHJ105	1			
R166	RK3038	Chip R.	MCR03EZHJ102	1			
R167	RK3055	Chip R.	MCR03EZHJ273	1			
R168	RK3054	Chip R.	MCR03EZHJ223	1			
R169	RK3038	Chip R.	MCR03EZHJ102	1			
R171	RK3062	Chip R.	MCR03EZHJ104	1			
R172	RK3062	Chip R.	MCR03EZHJ104	1			
R173	RK3026	Chip R.	MCR03EZHJ101	1			
R174	RK3026	Chip R.	MCR03EZHJ101	1			
R176	RK3050	Chip R.	MCR03EZHJ103	1			
R177	RK3054	Chip R.	MCR03EZHJ223	1			
R179	RK3074	Chip R.	MCR03EZHJ105	1			
R180	RK3034	Chip R.	MCR03EZHJ471	1			
R181	RK3066	Chip R.	MCR03EZHJ224	1			
R182	RK3042	Chip R.	MCR03EZHJ222	1			
R183	RK3074	Chip R.	MCR03EZHJ105	1			
R184	RK3058	Chip R.	MCR03EZHJ473	1			
R185	RK3070	Chip R.	MCR03EZHJ474	1			
R186	RK3026	Chip R.	MCR03EZHJ101	1			
R187	RK3058	Chip R.	MCR03EZHJ473	1			
R188	RK3026	Chip R.	MCR03EZHJ101	1			

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R189	RK3038	Chip R.	MCR03EZHJ102	1			
R190	RK3038	Chip R.	MCR03EZHJ102	1			
R191	RK3038	Chip R.	MCR03EZHJ102	1			
R192	RK3058	Chip R.	MCR03EZHJ473	1			
R193	RK3043	Chip R.	MCR03EZHJ272	1			
R195	RK3070	Chip R.	MCR03EZHJ474	1			
R196	RK3038	Chip R.	MCR03EZHJ102	1			
R197	RK3050	Chip R.	MCR03EZHJ103	1			
R198	RK3042	Chip R.	MCR03EZHJ222	1			
R199	RK3042	Chip R.	MCR03EZHJ222	1			
R200	RK3070	Chip R.	MCR03EZHJ474	1			
R201	RK3042	Chip R.	MCR03EZHJ222	1			
R202	RK0028	Chip R.	ERJ6GEYJ471V	1			
R203	RK3056	Chip R.	MCR03EZHJ333	1			
R204	RK3062	Chip R.	MCR03EZHJ104	1			
R205	RK0069	Chip R.	ERJ6GEYJ104V	1			
R206	RK0001	Chip R.	ERJ6GEYJ100V	1			
R207	RK3052	Chip R.	MCR03EZHJ153	1			
R208	RK3034	Chip R.	MCR03EZHJ471	1			
R209	RK3061	Chip R.	MCR03EZHJ823	1			
R210	RK3038	Chip R.	MCR03EZHJ102	1			
R211	RK4018	Chip R.	ERJ12YJ220U	1			
R212	RK4026	Chip R.	ERJ12YJ101U	1			
R213	RK3049	Chip R.	MCR03EZHJ822	1			
R214	RK3050	Chip R.	MCR03EZHJ103	1			
R215	RK3043	Chip R.	MCR03EZHJ272	1			
R216	RK3042	Chip R.	MCR03EZHJ222	1			
R217	RK3042	Chip R.	MCR03EZHJ222	1			
R218	RK3058	Chip R.	MCR03EZHJ473	1			
R219	RK3042	Chip R.	MCR03EZHJ222	1			
R220	RK4034	Chip R.	ERJ12YJ471U	1			
R221	RK3052	Chip R.	MCR03EZHJ153	1			
R222	RK3050	Chip R.	MCR03EZHJ103	1			
R223	RK3026	Chip R.	MCR03EZHJ101	1			
R224	RK4024	Chip R.	ERJ12YJ680U	1			
R225	RK3017	Chip R.	MCR03EZHJ180	1			
R226	RK3015	Chip R.	MCR03EZHJ120	1			
R227	RK3030	Chip R.	MCR03EZHJ221	1			
R228	RK3062	Chip R.	MCR03EZHJ104	1			
R229	RK3045	Chip R.	MCR03EZHJ392	1			
R230	RK3033	Chip R.	MCR03EZHJ391	1			
R231	RK3033	Chip R.	MCR03EZHJ391	1			
R232	RK3031	Chip R.	MCR03EZHJ271	1			
R233	RK3031	Chip R.	MCR03EZHJ271	1			
R234	RK3054	Chip R.	MCR03EZHJ223	1			
R235	RK3053	Chip R.	MCR03EZHJ183	1			
R236	RK3050	Chip R.	MCR03EZHJ103	1			
R237	RK3026	Chip R.	MCR03EZHJ101	1			
R238	RK3062	Chip R.	MCR03EZHJ104	1			
R239	RK3050	Chip R.	MCR03EZHJ103	1			
R240	RK3038	Chip R.	MCR03EZHJ102	1			
R241	RK3051	Chip R.	MCR03EZHJ123	1			
R242	RK3044	Chip R.	MCR03EZHJ332	1			
R243	RK3054	Chip R.	MCR03EZHJ223	1			
R244	RK3068	Chip R.	MCR03EZHJ334	1			
R245	RK3038	Chip R.	MCR03EZHJ102	1			
R246	RK3046	Chip R.	MCR03EZHJ472	1			
R247	RK3050	Chip R.	MCR03EZHJ103	1			
R248	RK3070	Chip R.	MCR03EZHJ474	1			
R249	RK3042	Chip R.	MCR03EZHJ222	1			
R250	RK3070	Chip R.	MCR03EZHJ474	1			
R251	RK3050	Chip R.	MCR03EZHJ103	1			
R252	RK3070	Chip R.	MCR03EZHJ474	1			
R253	RK3057	Chip R.	MCR03EZHJ393	1			
R254	RK3057	Chip R.	MCR03EZHJ393	1			
R255	RK3046	Chip R.	MCR03EZHJ472	1			
R256	RK3026	Chip R.	MCR03EZHJ101	1			
R257	RK3046	Chip R.	MCR03EZHJ472	1			
R258	RK3057	Chip R.	MCR03EZHJ393	1			
R259	RK3050	Chip R.	MCR03EZHJ103	1			
R260	RK3054	Chip R.	MCR03EZHJ223	1			
R261	RK3054	Chip R.	MCR03EZHJ223	1			
R262	RK3067	Chip R.	MCR03EZHJ274	1			
R263	RK3052	Chip R.	MCR03EZHJ153	1			
R264	RK3038	Chip R.	MCR03EZHJ102	1			
R265	RK3047	Chip R.	MCR03EZHJ562	1			
R266	RK3050	Chip R.	MCR03EZHJ103	1			
R267	RK3022	Chip R.	MCR03EZHJ470	1			
R268	RK3050	Chip R.	MCR03EZHJ103	1			
R269	RK3062	Chip R.	MCR03EZHJ104	1			
R270	RK3060	Chip R.	MCR03EZHJ683	1			
R271	RK4034	Chip R.	ERJ12YJ471U	1			
R272	RK3050	Chip R.	MCR03EZHJ103	1			
R273	RK3062	Chip R.	MCR03EZHJ104	1			
R274	RK3050	Chip R.	MCR03EZHJ103	1			
R275	RK3050	Chip R.	MCR03EZHJ103	1			
R276	RK3034	Chip R.	MCR03EZHJ471	1			
R277	RK3042	Chip R.	MCR03EZHJ222	1			
R278	RK3026	Chip R.	MCR03EZHJ101	1			

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R279	RK3046	Chip R.	MCR03EZHJ472	1			
R280	RK3058	Chip R.	MCR03EZHJ473	1			
R281	RK3041	Chip R.	MCR03EZHJ182	1			
R282	RK3050	Chip R.	MCR03EZHJ103	1			
R283	RK3038	Chip R.	MCR03EZHJ102	1			
R284	RK3026	Chip R.	MCR03EZHJ101	1			
R285	RK3054	Chip R.	MCR03EZHJ223	1			
R286	RK3034	Chip R.	MCR03EZHJ471	1			
R287	RK3046	Chip R.	MCR03EZHJ472	1			
R288	RK3046	Chip R.	MCR03EZHJ472	1			
R289	RK3046	Chip R.	MCR03EZHJ472	1			
R290	RK3054	Chip R.	MCR03EZHJ223	1			
R291	RK3022	Chip R.	MCR03EZHJ470	1			
R292	RK3018	Chip R.	MCR03EZHJ220	1			
R293	RK3042	Chip R.	MCR03EZHJ222	1			
R294	RK3052	Chip R.	MCR03EZHJ153	1			
R295	RK3038	Chip R.	MCR03EZHJ102	1			
R297	RK3050	Chip R.	MCR03EZHJ103	1			
R298	RK3042	Chip R.	MCR03EZHJ222	1			
R299	RK3042	Chip R.	MCR03EZHJ222	1			
R300	RK3026	Chip R.	MCR03EZHJ101	1			
R301	RK3038	Chip R.	MCR03EZHJ102	1			
R302	RK3024	Chip R.	MCR03EZHJ680	1			
R303	RK3056	Chip R.	MCR03EZHJ333	1			
R304	RK3059	Chip R.	MCR03EZHJ563	1			
R305	RK3058	Chip R.	MCR03EZHJ473	1			
R306	RK3076	Chip R.	MCR03EZHJ155	1			
R307	RK3001	Chip R.	MCR03EZHJ000	1			
R308	RK3076	Chip R.	MCR03EZHJ155	1			
R309	RK3050	Chip R.	MCR03EZHJ103	1			
R310	RK3026	Chip R.	MCR03EZHJ101	1			
R311	RK3038	Chip R.	MCR03EZHJ102	1			
R312	RK3038	Chip R.	MCR03EZHJ102	1			
R313	RK3038	Chip R.	MCR03EZHJ102	1			
R314	RK3022	Chip R.	MCR03EZHJ470	1			
R315	RK3042	Chip R.	MCR03EZHJ222	1			
R316	RK3051	Chip R.	MCR03EZHJ123	1			
R318	RK3050	Chip R.	MCR03EZHJ103	1			
R319	RK3062	Chip R.	MCR03EZHJ104	1			
R320	RK3062	Chip R.	MCR03EZHJ104	1			
R321	RK3043	Chip R.	MCR03EZHJ272	1			
R322	RD0108	Jumper	J1/6Z	1			
R323	RK3001	Chip R.	MCR03EZHJ000	1			
R324	RK3014	Chip R.	MCR03EZHJ100	1			
R325	RK3066	Chip R.	MCR03EZHJ224	1			
R326	RK3038	Chip R.	MCR03EZHJ102	1			
R327	RK3092	Chip R.	MCR03EZPFX7502	1			
R328	RD3013	Resistor	ERX1SJ100	1			
R329	RK3062	Chip R.	MCR03EZHJ104	1			
R330	RK3062	Chip R.	MCR03EZHJ104	1			
R331	RK3038	Chip R.	MCR03EZHJ102	1			
R332	RK3054	Chip R.	MCR03EZHJ223	1			
R333	RK3062	Chip R.	MCR03EZHJ104	1			
R334	RK3042	Chip R.	MCR03EZHJ222	1			
R335	RK3050	Chip R.	MCR03EZHJ103	1			
SH101	TS0032B	Case	VCO CASE	1			
TC101	CT0012	Trimmer C.	CTZ3S-10A-W1-P	1			
TH102	XS0031	Thermistor	NTCCM16084BH682KCT	1			
VR101	RH0146	Trimmer R.	MVR22HXBRN473	1			
VR102	RH0148	Trimmer R.	MVR22HXBRN104	1			
VR103	RH0142	Trimmer R.	MVR22HXBRN103	1			
VR104	RH0142	Trimmer R.	MVR22HXBRN103	1			
VR105	RH0142	Trimmer R.	MVR22HXBRN103	1			
VR106	RH0146	Trimmer R.	MVR22HXBRN473	1			
VR107	RH0140	Trimmer R.	MVR22HXBRN472	1			
VR108	RH0148	Trimmer R.	MVR22HXBRN104	1			
X101	XK0003	Discriminator	CDBM450C7	1			
X103	XQ0112	Xtal	UM-5 21.250MHZ	1			
XF101	XF0041	Xtal Filter	UM5 21.7M 21R15A5	1			
XF102	XF0041	Xtal Filter	UM5 21.7M 21R15A5	1			
	UP0400B	P.C.B	DR135 INTEGRATED	1			
	SD0034	Spring	GND SPRING DR130	3			
	TZ0072		SHEET	1			
	TZ0049		SILICON DUMPER	3			
	FG0327		CUSHION DR135	1			

Main Unit (DR-235)

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C101	CU3047	Chip C.	C1608JB1H103KT-N		1		
C102	CU3047	Chip C.	C1608JB1H103KT-N		1		
C103	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C104	CU3047	Chip C.	C1608JB1H103KT-N		1		
C105	CS0394	Chip tantalum	TMCMB0J476MTR		1		
C106	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C107	CU3111	Chip C.	C1608JB1C104KT-N		1		
C108	CU3047	Chip C.	C1608JB1H103KT-N		1		
C109	CS0216	Chip tantalum	TMCMB1A106MTR		1		
C110	CU3047	Chip C.	C1608JB1H103KT-N		1		
C111	CU3047	Chip C.	C1608JB1H103KT-N		1		
C112	CU3047	Chip C.	C1608JB1H103KT-N		1		
C113	CU3047	Chip C.	C1608JB1H103KT-N		1		
C114	CU3047	Chip C.	C1608JB1H103KT-N		1		
C115	CU3047	Chip C.	C1608JB1H103KT-N		1		
C117	CU3047	Chip C.	C1608JB1H103KT-N		1		
C118	CU3049	Chip C.	C1608JB1E153KT-NS		1		
C119	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C120	CU3021	Chip C.	C1608CH1H680JT-AS		1		
C121	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C122	CU3002	Chip C.	C1608CH1H010CT-AS		1		
C123	CU3013	Chip C.	C1608CH1H150JT-AS		1		
C124	CU3040	Chip C.	C1608JB1H272KT-NS		1		
C125	CU3044	Chip C.	C1608JB1H562KT-NS		1		
C126	CU3038	Chip C.	C1608JB1H182KT-AS		1		
C127	CU3041	Chip C.	C1608JB1H332KT-NS		1		
C129	CU3111	Chip C.	C1608JB1C104KT-N		1		
C130	CS0220	Chip tantalum	TMCMA1C225MTR		1		
C132	CU3027	Chip C.	C1608CH1H221JT-AS		1		
C133	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C134	CU3042	Chip C.	C1608JB1H392KT-NS		1		
C135	CU3044	Chip C.	C1608JB1H562KT-NS		1		
C137	CU3015	Chip C.	C1608CH1H220JT-AS		1		
C138	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C139	CU3015	Chip C.	C1608CH1H220JT-AS		1		
C140	CU3015	Chip C.	C1608CH1H220JT-AS		1		
C141	CU3111	Chip C.	C1608JB1C104KT-N		1		
C142	CU3111	Chip C.	C1608JB1C104KT-N		1		
C143	CU3111	Chip C.	C1608JB1C104KT-N		1		
C144	CU3009	Chip C.	C1608CH1H080CT-A		1		
C145	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C146	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C148	CU3019	Chip C.	C1608CH1H470JT-AS		1		
C149	CU3023	Chip C.	C1608CH1H101JT-AS		1		
C150	CU3002	Chip C.	C1608CH1H010CT-AS		1		
C151	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C152	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C153	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C154	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C155	CU3012	Chip C.	C1608CH1H120JT-AS		1		
C156	CU3047	Chip C.	C1608JB1H103KT-N		1		
C157	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C158	CU3013	Chip C.	C1608CH1H150JT-AS		1		
C159	CU3018	Chip C.	C1608CH1H390JT-AS		1		
C160	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C161	CU3111	Chip C.	C1608JB1C104KT-N		1		
C162	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C165	CU3111	Chip C.	C1608JB1C104KT-N		1		
C168	CU3111	Chip C.	C1608JB1C104KT-N		1		
C169	CU3027	Chip C.	C1608CH1H221JT-AS		1		
C170	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C171	CU3111	Chip C.	C1608JB1C104KT-N		1		
C172	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C173	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C174	CU3029	Chip C.	C1608JB1H331KT-AS		1		
C175	CU3111	Chip C.	C1608JB1C104KT-N		1		
C176	CU3002	Chip C.	C1608CH1H010CT-AS		1		
C177	CU3015	Chip C.	C1608CH1H220JT-AS		1		
C179	CU3111	Chip C.	C1608JB1C104KT-N		1		
C180	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C182	CU3047	Chip C.	C1608JB1H103KT-N		1		
C183	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C184	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C185	CS0061	Chip tantalum	TMCSA1V224MTR		1		
C186	CU3013	Chip C.	C1608CH1H150JT-AS		1		
C187	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C188	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C189	CU3011	Chip C.	C1608CH1H100DT-AS		1		
C190	CU3047	Chip C.	C1608JB1H103KT-N		1		
C191	CU3102	Chip C.	C1608JB1C333KT-NS		1		
C193	CU4033	Chip C.	GRM42-6X7R102K500PT		1		
C194	CU3008	Chip C.	C1608CH1H070CT-A		1		
C195	CU3010	Chip C.	C1608CH1H090CT-A		1		
C196	CU3013	Chip C.	C1608CH1H150JT-AS		1		
C198	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C199	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C200	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C201	CU4011	Chip C.	GRM42-6CH100D500PT		1		
C202	CU4013	Chip C.	GRM42-6CH150J500PT		1		
C203	CU4013	Chip C.	GRM42-6CH150J500PT		1		
C204	CU4008	Chip C.	GRM42-6CH070D500PT		1		
C205	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C206	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C207	CU3002	Chip C.	C1608CH1H010CT-AS		1		
C208	CU3002	Chip C.	C1608CH1H010CT-AS		1		
C209	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C209	CU3035	Chip C.	C1608JB1H102KT-AS		1		

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C211	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C212	CE0364	Electrolytic C.	16MV 47SWB+TS		1		
C213	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C215	CU4013	Chip C.	GRM42-6CH150J500PT		1		
C216	CU4013	Chip C.	GRM42-6CH150J500PT		1		
C217	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C218	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C219	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C220	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C221	CU3047	Chip C.	C1608JB1H103KT-N		1		
C222	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C223	CE0100	Electrolytic C.	16MV 22UW		1		
C224	CU3023	Chip C.	C1608CH1H101JT-AS		1		
C225	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C226	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C227	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C228	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C229	CU3101	Chip C.	C1608JB1C473KT-NS		1		
C230	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C231	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C232	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C233	CU3011	Chip C.	C1608CH1H100DT-AS		1		
C234	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C235	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C237	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C238	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C239	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C240	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C241	CU3022	Chip C.	C1608CH1H820JT-AS		1		
C242	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C243	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C244	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C245	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C246	CU3043	Chip C.	C1608JB1H472KT-NS		1		
C247	CU3111	Chip C.	C1608JB1C104KT-N		1		
C248	CU3047	Chip C.	C1608JB1H103KT-N		1		
C249	CU3038	Chip C.	C1608JB1H182KT-AS		1		
C250	CU3026	Chip C.	C1608CH1H181JT-AS		1		
C251	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C252	CU3008	Chip C.	C1608CH1H070CT-A		1		
C253	CU3111	Chip C.	C1608JB1C104KT-N		1		
C254	CU3111	Chip C.	C1608JB1C104KT-N		1		
C255	CE0364	Electrolytic C.	16MV 47SWB+TS		1		
C256	CU3111	Chip C.	C1608JB1C104KT-N		1		
C257	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C258	CS0049	Chip tantalum	TMCSA1C105MTR		1		
C259	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C260	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C261	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C262	CU3111	Chip C.	C1608JB1C104KT-N		1		
C263	CS0220	Chip tantalum	TMCMA1C225MTR		1		
C264	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C265	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C266	CU3007	Chip C.	C1608CH1H060CT-A		1		
C267	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C268	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C270	CU3047	Chip C.	C1608JB1H103KT-N		1		
C271	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C272	CE0339	Electrolytic C.	16MV 10SWB+TS		1		
C274	CU3018	Chip C.	C1608CH1H390JT-AS		1		
C276	CU3047	Chip C.	C1608JB1H103KT-N		1		
C277	CE0343	Electrolytic C.	16MV 1000HC+T		1		
C278	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C280	CU3019	Chip C.	C1608CH1H470JT-AS		1		
C286	CU3027	Chip C.	C1608CH1H221JT-AS		1		
C291	CU3011	Chip C.	C1608CH1H100DT-AS		1		
C292	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C294	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C297	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C298	CU3015	Chip C.	C1608CH1H220JT-AS		1		
C300	CU4011	Chip C.	GRM42-6CH100D500PT		1		
C301	CU3023	Chip C.	C1608CH1H101JT-AS		1		
C302	CU3023	Chip C.	C1608CH1H101JT-AS		1		
C303	CU3023	Chip C.	C1608CH1H101JT-AS		1		
C305	CU3047	Chip C.	C1608JB1H103KT-N		1		
C306	CU3111	Chip C.	C1608JB1C104KT-N		1		
C307	CU3047	Chip C.	C1608JB1H103KT-N		1		
C308	CE0342	Electrolytic C.	16MV 470HC+TS		1		
C309	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C310	CU3023	Chip C.	C1608CH1H101JT-AS		1		
C314	CS0237	Chip tantalum	TMCMA1A475MTR		1		
C315	CS0237	Chip tantalum	TMCMA1A475MTR		1		
C316	CS0237	Chip tantalum	TMCMA1A475MTR		1		
C317	CS0237	Chip tantalum	TMCMA1A475MTR		1		
C318	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C319	CS0237	Chip tantalum	TMCMA1A475MTR		1		
C320	CS0237	Chip tantalum	TMCMA1A475MTR		1		
C321	CS0220	Chip tantalum	TMCMA1C225MTR		1		
C322	CU3035	Chip C.	C1608JB1H102KT-AS		1		

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
CN102	UE0397	Connector	10-5082-3110-17-100		1		
CN103	UE0397	Connector	10-5082-3110-17-100		1		
CN104	UA0037Y	Connector	DC CABLE UA0037		1		
CN105	UE0394	Connector	PI28A15M		1		
CN106	UE0043	Connector	PI22A02M		1		
CN107	UE0393	Connector	PI28A11M		1		
CN110	UE0341	Connector	PI28A02M		1		
D101	XD0112	Chip Diode	1SV128 TE85L		1		
D102	XD0131	Chip Diode	1SV214 TPH4		1		
D103	XD0131	Chip Diode	1SV214 TPH4		1		
D104	XD0131	Chip Diode	1SV214 TPH4		1		
D105	XD0131	Chip Diode	1SV214 TPH4		1		
D106	XD0250	Chip Diode	MA742 TX		1		
D107	XD0131	Chip Diode	1SV214 TPH4		1		
D108	XD0130	Chip Diode	DA204U T106		1		
D109	XD0301	Chip Diode	1SV268-TD		1		
D110	XD0013	Diode	MI407		1		
D111	XD0250	Chip Diode	MA742 TX		1		
D112	XD0250	Chip Diode	MA742 TX		1		
D113	XD0254	Chip Diode	1SS355 TE17		1		
D114	XD0246	Chip Diode	DAN235UT 106		1		
D115	XD0254	Chip Diode	1SS355 TE17		1		
D117	XD0254	Chip Diode	1SS355 TE17		1		
D118	XD0130	Chip Diode	DA204U T106		1		
D119	XD0254	Chip Diode	1SS355 TE17		1		
D120	XD0254	Chip Diode	1SS355 TE17		1		
D121	XD0274	Chip Diode	DSA3A1		1		
D124	XD0131	Chip Diode	1SV214 TPH4		1		
D127	XD0165	Chip Diode	CHIP UDZSTE-17 5.1B		1		
D128	XD0291	Chip Diode	MA729-TX		1		
D129	XD0291	Chip Diode	MA729-TX		1		
FL101	XC0047	Ceramic Filter	ALFYM455E=K		1		
FL102	XC0036	Ceramic Filter	ALFYM455G		1		
IC101	XA0675	IC	L88MS05TLL-TL		1		
IC102	XA0348	IC	TC4W53FU(TE12)		1		
IC103	XA0348	IC	TC4W53FU(TE12)		1		
IC104	XA0596	IC	NJM2902V-TE1		1		
IC108	XA0223	IC	TK10930VTL		1		
IC109	XA0115	IC	TC4S66F TE85R		1		
IC110	XA0591	IC	M68729		1		
IC111	XA0236	IC	BU4052BCF-E2		1		
IC112	XA0119	IC	AN8010M E1		1		
IC113	XA0348	IC	TC4W53FU(TE12)		1		
IC114	XA0068	IC	M5218AFP/600E		1		
IC115	XA0102	IC	NJM7808FA		1		
IC117	XA0410	IC	LA4425A		1		
JK101	UJ0046	Jack	MJ82-1		1		
JK102	UJ0024Z	Jack	LGY6501-0600		1		
JP105	RD0108	Jumper	J1/6Z		1		
L101	QC0043	Chip Inductor	NL322522T-2R2J-3		1		
L102	QA0155	Coil	E544ENAS-110251		1		
L103	QA0155	Coil	E544ENAS-110251		1		
L104	QA0155	Coil	E544ENAS-110251		1		
L105	QA0155	Coil	E544ENAS-110251		1		
L106	QC0061	Chip Inductor	NL322522T-033JA		1		
L107	QA0155	Coil	E544ENAS-110251		1		
L111	QKA35E	Coil	MR3.0 3.5T 0.8		1		
L112	QKA25D	Coil	MR3.0 2.5T 0.6		1		
L113	QKA35E	Coil	MR3.0 3.5T 0.8		1		
L114	QKA35E	Coil	MR3.0 3.5T 0.8		1		
L115	QKA35E	Coil	MR3.0 3.5T 0.8		1		
L116	QKA35E	Coil	MR3.0 3.5T 0.8		1		
L117	QC0061	Chip Inductor	NL322522T-033JA		1		
L118	QKA95D	Coil	MR3.0 9.5T 0.6		1		
L119	QC0061	Chip Inductor	NL322522T-033JA		1		
Q101	XU0131	Chip Transistor	DTC114EUA T106		1		
Q102	XU0131	Chip Transistor	DTC114EUA T106		1		
Q104	XU0131	Chip Transistor	DTC114EUA T106		1		
Q105	XT0096	Chip Transistor	2SC4099 T106N		1		
Q106	XE0013	FET	3SK184 TX S		1		
Q107	XE0013	FET	3SK184 TX S		1		
Q108	XU0131	Chip Transistor	DTC114EUA T106		1		
Q110	XU0131	Chip Transistor	DTC114EUA T106		1		
Q111	XE0021	FET	2SK880GR TE85L		1		
Q112	XT0125	Chip Transistor	2SC4245-Y(TE85L)		1		
Q113	XU0047	Chip Transistor	UMC3NTR		1		
Q115	XT0084	Chip Transistor	2SC2954 T1		1		
Q116	XT0112	Transistor	2SB1292F		1		
Q117	XT0095	Chip Transistor	2SC4081 T106R		1		
Q118	XT0094	Chip Transistor	2SA1576A T106R		1		
Q119	XU0148	Chip Transistor	DTC144EUA T106		1		
Q120	XU0131	Chip Transistor	DTC114EUA T106		1		
Q121	XU0178	Chip Transistor	XP1215-TX		1		
Q122	XT0099	Chip Transistor	2SA1736 TE12R		1		
Q123	XT0061	Chip Transistor	2SB1132T 100Q		1		
Q124	XU0047	Chip Transistor	UMC3NTR		1		
Q125	XE0021	FET	2SK880GR TE85L		1		
Q126	XU0131	Chip Transistor	DTC114EUA T106		1		
Q127	XT0095	Chip Transistor	2SC4081 T106R		1		

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
Q128	XU0131	Chip Transistor	DTC114EUA T106		1		
Q129	XU0148	Chip Transistor	DTC144EUA T106		1		
Q130	XU0112	Chip Transistor	DTA114YUA T106		1		
Q131	XT0030	Chip Transistor	2SC3356T1BR24/25		1		
Q132	XU0131	Chip Transistor	DTC114EUA T106		1		
Q133	XU0131	Chip Transistor	DTC114EUA T106		1		
Q136	XU0148	Chip Transistor	DTC144EUA T106		1		
Q137	XU0131	Chip Transistor	DTC114EUA T106		1		
Q139	XT0095	Chip Transistor	2SC4081 T106R		1		
Q140	XT0095	Chip Transistor	2SC4081 T106R		1		
Q141	XU0148	Chip Transistor	DTC144EUA T106		1		
Q142	XU0148	Chip Transistor	DTC144EUA T106		1		
R101	RK3050	Chip R.	MCR03EZHJ103		1		
R102	RK3091	Chip R.	MCR03EZPFX3902		1		
R103	RK3091	Chip R.	MCR03EZPFX3902		1		
R104	RK3050	Chip R.	MCR03EZHJ103		1		
R105	RK3028	Chip R.	MCR03EZHJ151		1		
R106	RK3026	Chip R.	MCR03EZHJ101		1		
R107	RK3026	Chip R.	MCR03EZHJ101		1		
R108	RK3023	Chip R.	MCR03EZHJ560		1		
R109	RK3026	Chip R.	MCR03EZHJ101		1		
R110	RK3050	Chip R.	MCR03EZHJ103		1		
R111	RK3001	Chip R.	MCR03EZHJ000		1		
R112	RK3026	Chip R.	MCR03EZHJ101		1		
R114	RK3041	Chip R.	MCR03EZHJ182		1		
R115	RK3043	Chip R.	MCR03EZHJ272		1		
R116	RK3038	Chip R.	MCR03EZHJ102		1		
R117	RK3071	Chip R.	MCR03EZHJ564		1		
R118	RK3026	Chip R.	MCR03EZHJ101		1		
R119	RK3052	Chip R.	MCR03EZHJ153		1		
R120	RK3045	Chip R.	MCR03EZHJ392		1		
R121	RK3063	Chip R.	MCR03EZHJ124		1		
R122	RK3059	Chip R.	MCR03EZHJ563		1		
R123	RK3061	Chip R.	MCR03EZHJ823		1		
R124	RK3057	Chip R.	MCR03EZHJ393		1		
R125	RK3036	Chip R.	MCR03EZHJ681		1		
R126	RK3049	Chip R.	MCR03EZHJ822		1		
R128	RK3060	Chip R.	MCR03EZHJ683		1		
R129	RK3050	Chip R.	MCR03EZHJ103		1		
R130	RK3060	Chip R.	MCR03EZHJ683		1		
R131	RK3061	Chip R.	MCR03EZHJ823		1		
R132	RK3050	Chip R.	MCR03EZHJ103		1		
R133	RK3037	Chip R.	MCR03EZHJ821		1		
R134	RK3055	Chip R.	MCR03EZHJ273		1		
R135	RK3052	Chip R.	MCR03EZHJ153		1		
R136	RK3050	Chip R.	MCR03EZHJ103		1		
R137	RK3067	Chip R.	MCR03EZHJ274		1		
R138	RK3059	Chip R.	MCR03EZHJ563		1		
R139	RK3050	Chip R.	MCR03EZHJ103		1		
R140	RK3072	Chip R.	MCR03EZHJ684		1		
R141	RK3064	Chip R.	MCR03EZHJ154		1		
R142	RK3057	Chip R.	MCR03EZHJ393		1		
R143	RK3050	Chip R.	MCR03EZHJ103		1		
R144	RK3042	Chip R.	MCR03EZHJ222		1		
R147	RK3050	Chip R.	MCR03EZHJ103		1		
R148	RK3062	Chip R.	MCR03EZHJ104		1		
R151	RK3050	Chip R.	MCR03EZHJ103		1		
R152	RK3001	Chip R.	MCR03EZHJ000		1		
R153	RK3050	Chip R.	MCR03EZHJ103		1		
R155	RK3052	Chip R.	MCR03EZHJ153		1		
R156	RK3034	Chip R.	MCR03EZHJ471		1		
R157	RK3062	Chip R.	MCR03EZHJ104		1		
R158	RK3026	Chip R.	MCR03EZHJ101		1		
R160	RK3062	Chip R.	MCR03EZHJ104		1		
R161	RK3062	Chip R.	MCR03EZHJ104		1		
R162	RK3023	Chip R.	MCR03EZHJ560		1		
R163	RK3014	Chip R.	MCR03EZHJ100		1		
R164	RK3014	Chip R.	MCR03EZHJ100		1		
R165	RK3074	Chip R.	MCR03EZHJ105		1		
R167	RK3052	Chip R.	MCR03EZHJ153		1		
R168	RK3054	Chip R.	MCR03EZHJ223		1		
R171	RK3062	Chip R.	MCR03EZHJ104		1		
R172	RK3062	Chip R.	MCR03EZHJ104		1		
R173	RK3026	Chip R.	MCR03EZHJ101		1		
R174	RK3034	Chip R.	MCR03EZHJ471		1		
R176	RK3050	Chip R.	MCR03EZHJ103		1		
R179	RK3074	Chip R.	MCR03EZHJ105		1		
R180	RK3001	Chip R.	MCR03EZHJ000		1		
R181	RK3042	Chip R.	MCR03EZHJ222		1		
R182	RK3062	Chip R.	MCR03EZHJ104		1		
R183	RK3074	Chip R.	MCR03EZHJ105		1		
R184	RK3057	Chip R.	MCR03EZHJ393		1		
R185	RK3070	Chip R.	MCR03EZHJ474		1		
R186	RK3026	Chip R.	MCR03EZHJ101		1		
R187	RK3058	Chip R.	MCR03EZHJ473		1		
R189	RK3038	Chip R.	MCR03EZHJ102		1		
R190	RK3038	Chip R.	MCR03EZHJ102		1		
R191	RK3038	Chip R.	MCR03EZHJ102		1		
R192	RK3054	Chip R.	MCR03EZHJ223		1		

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R193	RK3043	Chip R.	MCR03EZHJ272		1		
R195	RK3070	Chip R.	MCR03EZHJ474		1		
R196	RK3038	Chip R.	MCR03EZHJ102		1		
R198	RK3050	Chip R.	MCR03EZHJ103		1		
R200	RK3070	Chip R.	MCR03EZHJ474		1		
R202	RK0028	Chip R.	ERJ6GEYJ471V		1		
R203	RK3056	Chip R.	MCR03EZHJ333		1		
R204	RK3062	Chip R.	MCR03EZHJ104		1		
R205	RK0069	Chip R.	ERJ6GEYJ104V		1		
R206	RK0001	Chip R.	ERJ6GEYJ100V		1		
R207	RK3052	Chip R.	MCR03EZHJ153		1		
R208	RK3028	Chip R.	MCR03EZHJ151		1		
R209	RK3061	Chip R.	MCR03EZHJ823		1		
R210	RK3038	Chip R.	MCR03EZHJ102		1		
R211	RK4018	Chip R.	ERJ12YJ220U		1		
R212	RK4026	Chip R.	ERJ12YJ101U		1		
R213	RK3049	Chip R.	MCR03EZHJ822		1		
R214	RK3050	Chip R.	MCR03EZHJ103		1		
R215	RK3041	Chip R.	MCR03EZHJ182		1		
R216	RK3042	Chip R.	MCR03EZHJ222		1		
R217	RK3042	Chip R.	MCR03EZHJ222		1		
R218	RK3058	Chip R.	MCR03EZHJ473		1		
R219	RK3042	Chip R.	MCR03EZHJ222		1		
R220	RK4034	Chip R.	ERJ12YJ471U		1		
R221	RK3052	Chip R.	MCR03EZHJ153		1		
R222	RK3050	Chip R.	MCR03EZHJ103		1		
R223	RK3026	Chip R.	MCR03EZHJ101		1		
R224	RK4026	Chip R.	ERJ12YJ101U		1		
R225	RK3001	Chip R.	MCR03EZHJ000		1		
R226	RK3026	Chip R.	MCR03EZHJ101		1		
R227	RK3030	Chip R.	MCR03EZHJ221		1		
R228	RK3062	Chip R.	MCR03EZHJ104		1		
R229	RK3048	Chip R.	MCR03EZHJ682		1		
R230	RK3054	Chip R.	MCR03EZHJ223		1		
R231	RK3050	Chip R.	MCR03EZHJ103		1		
R232	RK3050	Chip R.	MCR03EZHJ103		1		
R234	RK3054	Chip R.	MCR03EZHJ223		1		
R235	RK3053	Chip R.	MCR03EZHJ183		1		
R236	RK3050	Chip R.	MCR03EZHJ103		1		
R237	RK3026	Chip R.	MCR03EZHJ101		1		
R238	RK3062	Chip R.	MCR03EZHJ104		1		
R239	RK3050	Chip R.	MCR03EZHJ103		1		
R240	RK3038	Chip R.	MCR03EZHJ102		1		
R241	RK3051	Chip R.	MCR03EZHJ123		1		
R242	RK3044	Chip R.	MCR03EZHJ332		1		
R243	RK3054	Chip R.	MCR03EZHJ223		1		
R244	RK3068	Chip R.	MCR03EZHJ334		1		
R245	RK3038	Chip R.	MCR03EZHJ102		1		
R246	RK3046	Chip R.	MCR03EZHJ472		1		
R247	RK3050	Chip R.	MCR03EZHJ103		1		
R248	RK3070	Chip R.	MCR03EZHJ474		1		
R249	RK3042	Chip R.	MCR03EZHJ222		1		
R250	RK3070	Chip R.	MCR03EZHJ474		1		
R251	RK3050	Chip R.	MCR03EZHJ103		1		
R252	RK3070	Chip R.	MCR03EZHJ474		1		
R253	RK3057	Chip R.	MCR03EZHJ393		1		
R254	RK3057	Chip R.	MCR03EZHJ393		1		
R255	RK3046	Chip R.	MCR03EZHJ472		1		
R256	RK3026	Chip R.	MCR03EZHJ101		1		
R257	RK3046	Chip R.	MCR03EZHJ472		1		
R258	RK3057	Chip R.	MCR03EZHJ393		1		
R259	RK3050	Chip R.	MCR03EZHJ103		1		
R260	RK3054	Chip R.	MCR03EZHJ223		1		
R261	RK3054	Chip R.	MCR03EZHJ223		1		
R262	RK3068	Chip R.	MCR03EZHJ334		1		
R263	RK3050	Chip R.	MCR03EZHJ103		1		
R264	RK3038	Chip R.	MCR03EZHJ102		1		
R265	RK3047	Chip R.	MCR03EZHJ562		1		
R266	RK3050	Chip R.	MCR03EZHJ103		1		
R267	RK3030	Chip R.	MCR03EZHJ221		1		
R269	RK3062	Chip R.	MCR03EZHJ104		1		
R271	RK4034	Chip R.	ERJ12YJ471U		1		
R272	RK3050	Chip R.	MCR03EZHJ103		1		
R273	RK3062	Chip R.	MCR03EZHJ104		1		
R274	RK3050	Chip R.	MCR03EZHJ103		1		
R275	RK3022	Chip R.	MCR03EZHJ470		1		
R277	RK3042	Chip R.	MCR03EZHJ222		1		
R279	RK3046	Chip R.	MCR03EZHJ472		1		
R280	RK3058	Chip R.	MCR03EZHJ473		1		
R281	RK3041	Chip R.	MCR03EZHJ182		1		
R282	RK3050	Chip R.	MCR03EZHJ103		1		
R283	RK3038	Chip R.	MCR03EZHJ102		1		
R284	RK3030	Chip R.	MCR03EZHJ221		1		
R285	RK3050	Chip R.	MCR03EZHJ103		1		
R286	RK3045	Chip R.	MCR03EZHJ392		1		
R287	RK3046	Chip R.	MCR03EZHJ472		1		
R288	RK3014	Chip R.	MCR03EZHJ100		1		
R290	RK3038	Chip R.	MCR03EZHJ102		1		
R291	RK3001	Chip R.	MCR03EZHJ000		1		

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R295	RK3038	Chip R.	MCR03EZHJ102		1		
R297	RK3050	Chip R.	MCR03EZHJ103		1		
R303	RK3057	Chip R.	MCR03EZHJ393		1		
R304	RK3057	Chip R.	MCR03EZHJ393		1		
R306	RK3076	Chip R.	MCR03EZHJ155		1		
R308	RK3076	Chip R.	MCR03EZHJ155		1		
R309	RK3050	Chip R.	MCR03EZHJ103		1		
R311	RK3038	Chip R.	MCR03EZHJ102		1		
R312	RK3038	Chip R.	MCR03EZHJ102		1		
R313	RK3038	Chip R.	MCR03EZHJ102		1		
R315	RK3042	Chip R.	MCR03EZHJ222		1		
R316	RK3051	Chip R.	MCR03EZHJ123		1		
R318	RK3050	Chip R.	MCR03EZHJ103		1		
R319	RK3062	Chip R.	MCR03EZHJ104		1		
R320	RK3062	Chip R.	MCR03EZHJ104		1		
R322	RD0108	Jumper	J1/6Z		1		
R323	RK3001	Chip R.	MCR03EZHJ000		1		
R324	RK3014	Chip R.	MCR03EZHJ100		1		
R325	RK3066	Chip R.	MCR03EZHJ224		1		
R326	RK3038	Chip R.	MCR03EZHJ102		1		
R327	RK3092	Chip R.	MCR03EZPFX7502		1		
R328	RD3013	Resistor	ERX1SJ100		1		
R329	RK3062	Chip R.	MCR03EZHJ104		1		
R330	RK3062	Chip R.	MCR03EZHJ104		1		
R331	RK3040	Chip R.	MCR03EZHJ152		1		
R332	RK3054	Chip R.	MCR03EZHJ223		1		
R333	RK3062	Chip R.	MCR03EZHJ104		1		
R334	RK3042	Chip R.	MCR03EZHJ222		1		
TC101	CT0012	Trimmer	CTZ3S-10A-W1-P		1		
TH101	XS0031	Thermistor	NTCCM16084BH682KCT		1		
VR101	RH0146	Trimmer R.	MVR22HXBRN473		1		
VR102	RH0148	Trimmer R.	MVR22HXBRN104		1		
VR103	RH0142	Trimmer R.	MVR22HXBRN103		1		
VR104	RH0144	Trimmer R.	MVR22HXBRN223		1		
VR105	RH0142	Trimmer R.	MVR22HXBRN103		1		
VR106	RH0146	Trimmer R.	MVR22HXBRN473		1		
VR107	RH0140	Trimmer R.	MVR22HXBRN472		1		
VR108	RH0148	Trimmer R.	MVR22HXBRN104		1		
W101	MBAG02GG	Wire	#22BH1-020-H1		1		
W102	MBCL02GG	Wire	#30BH1-020-H1		1		
X101	XK0002	Discriminator	CDBM455C7		1		
X103	XQ0096	Xtal	12.8MHZ 5PPM UM5		1		
X104	XQ0058A	Xtal	UM-5 30.395MHZ		1		
XF101	XF0014Z	Xtal Filter	30M152A 30.85MHZ		1		
	SD0034		GND SPRING DR130		1		
	TS0164A		VCO CASE DR235		1		
	TZ0049		SILICON DUMPER		1		
	TZ0072		SHEET		1		
	UP0414	P.C.Board			1		

VCO Unit (DR-235)

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C503	CU3039	Chip C.	C1608JB1H222KT-AS		1		
C504	CU3051	Chip C.	C1608JB1E223KT-NS		1		
C505	CS0220	Chip tantalum	TMCMA1C225MTR		1		
C506	CS0220	Chip tantalum	TMCMA1C225MTR		1		
C507	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C508	CS0063	Chip tantalum	TMCSA1V104MTR		1		
C511	CU3047	Chip C.	C1608JB1H103KT-N		1		
C512	CU3047	Chip C.	C1608JB1H103KT-N		1		
C513	CU3008	Chip C.	C1608CH1H070CT-A		1		
C514	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C515	CU3006	Chip C.	C1608CH1H050CT-AS		1		
C516	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C517	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C518	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C519	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C520	CS0382	Chip tantalum	TMCMB1A226MTR		1		
C523	CU3004	Chip C.	C1608CH1H030CT-AS		1		
C524	CU3027	Chip C.	C1608CH1H221JT-AS		1		
C525	CU3009	Chip C.	C1608CH1H080CT-A		1		
C526	CU3002	Chip C.	C1608CH1H010CT-AS		1		
C527	CU3009	Chip C.	C1608CH1H080CT-A		1		
C528	CU3003	Chip C.	C1608CH1H020CT-AS		1		
C529	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C530	CU3035	Chip C.	C1608JB1H102KT-AS		1		
C531	CU3011	Chip C.	C1608CH1H100DT-AS		1		
CN501	UE0420	Connector	B8P-BC-2		1		
CN502	UE0185	Connector	B6P-BC-2		1		
D501	XD0131	Chip Diode	1SV214 TPH4		1		
D503	XD0300	Chip Diode	1SV262TPH2		1		
D504	XD0300	Chip Diode	1SV262TPH2		1		
IC501	XA0352	IC	M64076GP		1		
L501	QC0104	Chip Inductor	LER015T1R5M		1		
L503	QA0147	Chip Inductor	4VP-5.25T		1		
L504	QC0104	Chip Inductor	LER015T1R5M		1		
L505	QC0104	Chip Inductor	LER015T1R5M		1		
L506	QC0544	Chip Inductor	LER015TR47M		1		
L507	QC0430	Chip Inductor	MLF1608DR10K-T		1		
Q501	XT0124	Chip Transistor	2SC4215-Y(TE85L)		1		
Q503	XE0010	FET	2SK508K52 T2B		1		
Q504	XT0124	Chip Transistor	2SC4215-Y(TE85L)		1		
R502	RK3022	Chip R.	MCR03EZHJ470		1		
R503	RK3030	Chip R.	MCR03EZHJ221		1		
R504	RK3001	Chip R.	MCR03EZHJ000		1		
R505	RK3048	Chip R.	MCR03EZHJ682		1		
R506	RK3052	Chip R.	MCR03EZHJ153		1		
R507	RK3042	Chip R.	MCR03EZHJ222		1		
R508	RK3026	Chip R.	MCR03EZHJ101		1		
R509	RK3034	Chip R.	MCR03EZHJ471		1		
R510	RK3054	Chip R.	MCR03EZHJ223		1		
R511	RK3044	Chip R.	MCR03EZHJ332		1		
R512	RK3022	Chip R.	MCR03EZHJ470		1		
R513	RK3050	Chip R.	MCR03EZHJ103		1		
R514	RK3060	Chip R.	MCR03EZHJ683		1		
R518	RK3025	Chip R.	MCR03EZHJ820		1		
R519	RK3022	Chip R.	MCR03EZHJ470		1		
R520	RK3045	Chip R.	MCR03EZHJ392		1		
R521	RK3026	Chip R.	MCR03EZHJ101		1		
R522	RK3034	Chip R.	MCR03EZHJ471		1		
R523	RK3050	Chip R.	MCR03EZHJ103		1		

Main Unit (DR-435)

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C101	CU3047	Chip C.	C1608JB1H103KT-N			1	
C102	CU3047	Chip C.	C1608JB1H103KT-N			1	
C103	CS0049	Chip tantalum	TMCSA1C105MTR			1	
C104	CU3047	Chip C.	C1608JB1H103KT-N			1	
C105	CS0394	Chip tantalum	TMCMB0J476MTR			1	
C106	CU3051	Chip C.	C1608JB1E223KT-NS			1	
C107	CU3111	Chip C.	C1608JB1C104KT-N			1	
C108	CU3047	Chip C.	C1608JB1H103KT-N			1	
C109	CS0372	Chip tantalum	TMCMB1C106MTR			1	
C110	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C111	CU3047	Chip C.	C1608JB1H103KT-N			1	
C112	CU3047	Chip C.	C1608JB1H103KT-N			1	
C113	CU3047	Chip C.	C1608JB1H103KT-N			1	
C114	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C115	CE0350	Electrolytic C.	16MV 100HC			1	
C116	CU3047	Chip C.	C1608JB1H103KT-N			1	
C117	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C118	CU3049	Chip C.	C1608JB1E153KT-NS			1	
C119	CU3051	Chip C.	C1608JB1E223KT-NS			1	
C120	CU3020	Chip C.	C1608CH1H560JT-AS			1	
C121	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C122	CU3047	Chip C.	C1608JB1H103KT-N			1	
C123	CU3012	Chip C.	C1608CH1H120JT-AS			1	
C124	CU3040	Chip C.	C1608JB1H272KT-NS			1	
C125	CU3044	Chip C.	C1608JB1H562KT-NS			1	
C126	CU3038	Chip C.	C1608JB1H182KT-AS			1	
C127	CU3041	Chip C.	C1608JB1H332KT-NS			1	
C129	CU3008	Chip C.	C1608CH1H070CT-A			1	
C130	CS0220	Chip tantalum	TMCMA1C225MTR			1	
C131	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C132	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C133	CU3027	Chip C.	C1608CH1H221JT-AS			1	
C134	CU3042	Chip C.	C1608JB1H392KT-NS			1	
C135	CU3044	Chip C.	C1608JB1H562KT-NS			1	
C137	CU3017	Chip C.	C1608CH1H330JT-AS			1	
C138	CS0049	Chip tantalum	TMCSA1C105MTR			1	
C139	CU3031	Chip C.	C1608JB1H471KT-AS			1	
C141	CU3008	Chip C.	C1608CH1H070CT-A			1	
C142	CU3111	Chip C.	C1608JB1C104KT-N			1	
C143	CU3111	Chip C.	C1608JB1C104KT-N			1	
C144	CU3015	Chip C.	C1608CH1H220JT-AS			1	
C145	CU3064	Chip C.	C1608CH1H1R5CT-AS			1	
C146	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C149	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C150	CU3016	Chip C.	C1608CH1H270JT-AS			1	
C151	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C152	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C153	CU3003	Chip C.	C1608CH1H020CT-AS			1	
C154	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C155	CU3011	Chip C.	C1608CH1H100DT-AS			1	
C156	CU3047	Chip C.	C1608JB1H103KT-N			1	
C157	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C158	CU3004	Chip C.	C1608CH1H030CT-AS			1	
C159	CU3018	Chip C.	C1608CH1H390JT-AS			1	
C160	CU3016	Chip C.	C1608CH1H270JT-AS			1	
C161	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C162	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C165	CU3111	Chip C.	C1608JB1C104KT-N			1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C167	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C169	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C170	CU3016	Chip C.	C1608CH1H270JT-AS			1	
C173	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C174	CU3029	Chip C.	C1608JB1H331KT-AS			1	
C175	CU3111	Chip C.	C1608JB1C104KT-N			1	
C176	CU3016	Chip C.	C1608CH1H270JT-AS			1	
C179	CU3111	Chip C.	C1608JB1C104KT-N			1	
C180	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C181	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C182	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C183	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C184	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C185	CS0232	Chip tantalum	TMCMA1V474MTR			1	
C187	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C188	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C189	CU3015	Chip C.	C1608CH1H220JT-AS			1	
C190	CU3047	Chip C.	C1608JB1H103KT-N			1	
C191	CU3102	Chip C.	C1608JB1C333KT-NS			1	
C192	CU3047	Chip C.	C1608JB1H103KT-N			1	
C193	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C194	CU3004	Chip C.	C1608CH1H030CT-AS			1	
C195	CU3064	Chip C.	C1608CH1H1R5CT-AS			1	
C196	CU3011	Chip C.	C1608CH1H100DT-AS			1	
C197	CU4033	Chip C.	GRM42-6X7R102K500PT			1	
C198	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C199	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C200	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C201	CU4003	Chip C.	GRM42-6CK020C500PT			1	
C202	CU4011	Chip C.	GRM42-6CH100D500PT			1	
C203	CU4004	Chip C.	GRM42-6CJ030C500PT			1	
C204	CU4003	Chip C.	GRM42-6CK020C500PT			1	
C205	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C206	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C207	CU3002	Chip C.	C1608CH1H010CT-AS			1	
C208	CU3002	Chip C.	C1608CH1H010CT-AS			1	
C209	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C210	CU3003	Chip C.	C1608CH1H020CT-AS			1	
C211	CU3003	Chip C.	C1608CH1H020CT-AS			1	
C212	CE0364	Electrolytic C.	16MV 47SWB+TS			1	
C213	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C214	CU3004	Chip C.	C1608CH1H030CT-AS			1	
C215	CU4008	Chip C.	GRM42-6CH070D500PT			1	
C216	CU4011	Chip C.	GRM42-6CH100D500PT			1	
C217	CU3051	Chip C.	C1608JB1E223KT-NS			1	
C218	CU3051	Chip C.	C1608JB1E223KT-NS			1	
C219	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C220	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C221	CU3047	Chip C.	C1608JB1H103KT-N			1	
C222	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C223	CE0364	Electrolytic C.	16MV 47SWB+TS			1	
C224	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C225	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C226	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C227	CS0049	Chip tantalum	TMCSA1C105MTR			1	
C228	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C229	CU3101	Chip C.	C1608JB1C473KT-NS			1	
C230	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C231	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C234	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C235	CU3011	Chip C.	C1608CH1H100DT-AS			1	
C236	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C237	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C238	CS0049	Chip tantalum	TMCSA1C105MTR			1	
C239	CS0063	Chip tantalum	TMCSA1V104MTR			1	
C240	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C241	CU3022	Chip C.	C1608CH1H820JT-AS			1	
C242	CU3051	Chip C.	C1608JB1E223KT-NS			1	
C243	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C244	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C245	CS0049	Chip tantalum	TMCSA1C105MTR			1	
C246	CU3043	Chip C.	C1608JB1H472KT-NS			1	
C247	CU3111	Chip C.	C1608JB1C104KT-N			1	
C248	CU3047	Chip C.	C1608JB1H103KT-N			1	
C249	CU3038	Chip C.	C1608JB1H182KT-AS			1	
C250	CU3026	Chip C.	C1608CH1H181JT-AS			1	
C251	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C253	CU3111	Chip C.	C1608JB1C104KT-N			1	
C254	CU3111	Chip C.	C1608JB1C104KT-N			1	
C255	CE0364	Electrolytic C.	16MV 47SWB+TS			1	
C256	CU3111	Chip C.	C1608JB1C104KT-N			1	
C257	CE0339	Electrolytic C.	16MV 10SWB+TS			1	
C259	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C261	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C267	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C270	CU3047	Chip C.	C1608JB1H103KT-N			1	
C277	CE0343	Electrolytic C.	16MV 1000HC+T			1	
C278	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C284	CU3035	Chip C.	C1608JB1H102KT-AS			1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C286	CU3027	Chip C.	C1608CH1H221JT-AS			1	
C289	CS0049	Chip tantalum	TMCSA1C105MTR			1	
C291	CU3011	Chip C.	C1608CH1H100DT-AS			1	
C292	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C294	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C297	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C298	CU3005	Chip C.	C1608CH1H040CT-AS			1	
C305	CU3047	Chip C.	C1608JB1H103KT-N			1	
C306	CU3111	Chip C.	C1608JB1C104KT-N			1	
C307	CU3047	Chip C.	C1608JB1H103KT-N			1	
C308	CE0342	Electrolytic C.	16MV 470HC+TS			1	
C309	CU3051	Chip C.	C1608JB1E223KT-NS			1	
C310	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C311	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C312	CU3004	Chip C.	C1608CH1H030CT-AS			1	
C314	CS0237	Chip tantalum	TMCMA1A475MTR			1	
C315	CS0237	Chip tantalum	TMCMA1A475MTR			1	
C316	CS0237	Chip tantalum	TMCMA1A475MTR			1	
C317	CS0237	Chip tantalum	TMCMA1A475MTR			1	
C318	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C319	CS0237	Chip tantalum	TMCMA1A475MTR			1	
C320	CE0100	Electrolytic C.	16MV 22UW			1	
C321	CS0220	Chip tantalum	TMCMA1C225MTR			1	
C322	CU3035	Chip C.	C1608JB1H102KT-AS			1	
CN101	UE0369	Connector	AXN49301616			1	
CN102	UE0397	Connector	10-5082-3110-17-100			1	
CN103	UE0397	Connector	10-5082-3110-17-100			1	
CN104	UA0037Y	Wire	DC CABLE UA0037			1	
CN105	UE0394	Connector	PI28A15M			1	
CN106	UE0043	Connector	PI22A02M			1	
CN107	UE0393	Connector	PI28A11M			1	
CN108	UE0369	Connector	AXN49301616			1	
CN109	UE0041	Connector	TMPJ01XV6			1	
CN110	UE0341	Connector	PI28A02M			1	
D101	XD0141	Chip Diode	1SV237 TE85R			1	
D102	XD0254	Chip Diode	1SS355 TE17			1	
D103	XD0254	Chip Diode	1SS355 TE17			1	
D104	XD0254	Chip Diode	1SS355 TE17			1	
D105	XD0291	Chip Diode	MA729-TX			1	
D106	XD0250	Chip Diode	MA742 TX			1	
D107	XD0141	Chip Diode	1SV237 TE85R			1	
D108	XD0254	Chip Diode	1SS355 TE17			1	
D109	XD0301	Chip Diode	1SV268-TD			1	
D110	XD0013	Diode	MI407			1	
D111	XD0250	Chip Diode	MA742 TX			1	
D112	XD0250	Chip Diode	MA742 TX			1	
D113	XD0254	Chip Diode	1SS355 TE17			1	
D114	XD0141	Chip Diode	1SV237 TE85R			1	
D115	XD0254	Chip Diode	1SS355 TE17			1	
D116	XD0297	Chip Diode	MA8100-TX			1	
D118	XD0130	Chip Diode	DA204U T106			1	
D119	XD0254	Chip Diode	1SS355 TE17			1	
D121	XD0274	Diode	DSA3A1			1	
D124	XD0131	Chip Diode	1SV214 TPH4			1	
D127	XD0165	Chip Diode	UDZSTE-17 5.1B			1	
D128	XD0291	Chip Diode	MA729-TX			1	
D129	XD0291	Chip Diode	MA729-TX			1	
FL101	XC0047	Ceramic Filter	ALFYM455E=K			1	
FL102	XC0036	Ceramic Filter	ALFYM455G			1	
IC101	XA0675	IC	L88MS05TLL-TL			1	
IC102	XA0348	IC	TC4W53FU(TE12)			1	
IC103	XA0348	IC	TC4W53FU(TE12)			1	
IC104	XA0596	IC	NJM2902V-TE1			1	
IC108	XA0314	IC	TK10489MTL			1	
IC109	XA0115	IC	TC4S66F TE85R			1	
IC110	XA0077A	IC	M57788M E			1	
IC111	XA0236	IC	BU4052BCF-E2			1	
IC113	XA0348	IC	TC4W53FU(TE12)			1	
IC114	XA0068	IC	M5218AFP/600E			1	
IC115	XA0102	IC	NJM7808FA			1	
IC117	XA0410	IC	LA4425A			1	
JK101	UJ0046	Jack	MJ82-1			1	
JK102	UJ0024Z	Jack	LGY6501-0600			1	
L101	QC0043	Chip Inductor	NL322522T-2R2J-3			1	
L102	QA0104	Coil	QA0104			1	
L103	QA0104	Coil	QA0104			1	
L104	QC0057	Chip Inductor	NL322522T-015JA			1	
L105	QC0057	Chip Inductor	NL322522T-015JA			1	
L106	QC0055	Chip Inductor	NL322522T-010JA			1	
L107	QC0057	Chip Inductor	NL322522T-015JA			1	
L108	QC0124	Chip Inductor	NL322522T-R15J-3			1	
L109	QC0061	Chip Inductor	NL322522T-033JA			1	
L111	QKA25E	Coil	MR3.0 2.5T 0.8			1	
L112	QKA15D	Coil	MR3.0 1.5T 0.6			1	
L113	QC0062	Chip Inductor	NL322522T-039JA			1	
L114	QKA15E	Coil	MR3.0 1.5T 0.8			1	
L115	QKA15E	Coil	MR3.0 1.5T 0.8			1	
L116	QKA15E	Coil	MR3.0 1.5T 0.8			1	
L117	QKA25D	Coil	MR3.0 2.5T 0.6			1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
L118	QKA95D	Coil	MR3.0 9.5T 0.6			1	
L119	QC0059	Chip Inductor	NL322522T-022JA			1	
L120	QC0059	Chip Inductor	NL322522T-022JA			1	
Q101	XU0131	Chip Transistor	DTC114EUA T106			1	
Q102	XU0131	Chip Transistor	DTC114EUA T106			1	
Q103	XU0152	Chip Transistor	UMC5NTR			1	
Q104	XU0131	Chip Transistor	DTC114EUA T106			1	
Q105	XT0125	Chip Transistor	2SC4245-Y(TE85L)			1	
Q106	XE0013	Chip Transistor	3SK184 TX S			1	
Q107	XE0013	Chip Transistor	3SK184 TX S			1	
Q108	XU0131	Chip Transistor	DTC114EUA T106			1	
Q110	XU0131	Chip Transistor	DTC114EUA T106			1	
Q111	XT0141	Chip Transistor	2SC4226-T1 R24			1	
Q112	XT0141	Chip Transistor	2SC4226-T1 R24			1	
Q113	XU0152	Chip Transistor	UMC5NTR			1	
Q114	XU0131	Chip Transistor	DTC114EUA T106			1	
Q115	XT0084	Chip Transistor	2SC2954 T1			1	
Q116	XT0112	Transistor	2SB1292F			1	
Q117	XT0095	Chip Transistor	2SC4081 T106R			1	
Q118	XT0094	Chip Transistor	2SA1576A T106R			1	
Q119	XU0148	Chip Transistor	DTC144EUA T106			1	
Q120	XU0131	Chip Transistor	DTC114EUA T106			1	
Q121	XU0178	Chip Transistor	XP1215-TX			1	
Q122	XT0099	Chip Transistor	2SA1736 TE12R			1	
Q123	XT0061	Chip Transistor	2SB1132T 100Q			1	
Q124	XU0152	Chip Transistor	UMC5NTR			1	
Q125	XT0048	Chip Transistor	2SC3357RE T1			1	
Q126	XU0131	Chip Transistor	DTC114EUA T106			1	
Q127	XT0095	Chip Transistor	2SC4081 T106R			1	
Q128	XU0131	Chip Transistor	DTC114EUA T106			1	
Q129	XU0148	Chip Transistor	DTC144EUA T106			1	
Q130	XU0112	Chip Transistor	DTA114YUA T106			1	
Q131	XT0141	Chip Transistor	2SC4226-T1 R24			1	
Q132	XU0131	Chip Transistor	DTC114EUA T106			1	
Q133	XU0131	Chip Transistor	DTC114EUA T106			1	
Q134	XT0095	Chip Transistor	2SC4081 T106R			1	
Q135	XT0095	Chip Transistor	2SC4081 T106R			1	
Q136	XU0148	Chip Transistor	DTC144EUA T106			1	
Q137	XU0131	Chip Transistor	DTC114EUA T106			1	
Q139	XT0095	Chip Transistor	2SC4081 T106R			1	
Q140	XT0095	Chip Transistor	2SC4081 T106R			1	
Q141	XU0148	Chip Transistor	DTC144EUA T106			1	
Q142	XU0148	Chip Transistor	DTC144EUA T106			1	
R101	RK3050	Chip R.	MCR03EZHJ103			1	
R102	RK3091	Chip R.	MCR03EZPFX3902			1	
R103	RK3091	Chip R.	MCR03EZPFX3902			1	
R104	RK3050	Chip R.	MCR03EZHJ103			1	
R105	RK3028	Chip R.	MCR03EZHJ151			1	
R106	RK3026	Chip R.	MCR03EZHJ101			1	
R107	RK3026	Chip R.	MCR03EZHJ101			1	
R109	RK3026	Chip R.	MCR03EZHJ101			1	
R110	RK3068	Chip R.	MCR03EZHJ334			1	
R111	RK3044	Chip R.	MCR03EZHJ332			1	
R112	RK3022	Chip R.	MCR03EZHJ470			1	
R113	RK3022	Chip R.	MCR03EZHJ470			1	
R114	RK3042	Chip R.	MCR03EZHJ222			1	
R115	RK3041	Chip R.	MCR03EZHJ182			1	
R116	RK3030	Chip R.	MCR03EZHJ221			1	
R117	RK3070	Chip R.	MCR03EZHJ474			1	
R118	RK3026	Chip R.	MCR03EZHJ101			1	
R119	RK3052	Chip R.	MCR03EZHJ153			1	
R120	RK3045	Chip R.	MCR03EZHJ392			1	
R121	RK3063	Chip R.	MCR03EZHJ124			1	
R122	RK3059	Chip R.	MCR03EZHJ563			1	
R123	RK3061	Chip R.	MCR03EZHJ823			1	
R124	RK3057	Chip R.	MCR03EZHJ393			1	
R125	RK3036	Chip R.	MCR03EZHJ681			1	
R126	RK3049	Chip R.	MCR03EZHJ822			1	
R128	RK3062	Chip R.	MCR03EZHJ104			1	
R129	RK0069	Chip R.	ERJ6GEYJ104V			1	
R131	RK3054	Chip R.	MCR03EZHJ223			1	
R132	RK3050	Chip R.	MCR03EZHJ103			1	
R133	RK3032	Chip R.	MCR03EZHJ331			1	
R134	RK3054	Chip R.	MCR03EZHJ223			1	
R135	RK3056	Chip R.	MCR03EZHJ333			1	
R136	RK3050	Chip R.	MCR03EZHJ103			1	
R137	RK3067	Chip R.	MCR03EZHJ274			1	
R138	RK3059	Chip R.	MCR03EZHJ563			1	
R139	RK3050	Chip R.	MCR03EZHJ103			1	
R140	RK3072	Chip R.	MCR03EZHJ684			1	
R141	RK3064	Chip R.	MCR03EZHJ154			1	
R142	RK3055	Chip R.	MCR03EZHJ273			1	
R143	RK3038	Chip R.	MCR03EZHJ102			1	
R144	RK3042	Chip R.	MCR03EZHJ222			1	
R147	RK3050	Chip R.	MCR03EZHJ103			1	
R148	RK3062	Chip R.	MCR03EZHJ104			1	
R150	RK3058	Chip R.	MCR03EZHJ473			1	
R151	RK3050	Chip R.	MCR03EZHJ103			1	
R152	RK3038	Chip R.	MCR03EZHJ102			1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R153	RK3038	Chip R.	MCR03EZHJ102			1	
R154	RK3042	Chip R.	MCR03EZHJ222			1	
R155	RK3052	Chip R.	MCR03EZHJ153			1	
R156	RK3034	Chip R.	MCR03EZHJ471			1	
R157	RK3058	Chip R.	MCR03EZHJ473			1	
R158	RK3026	Chip R.	MCR03EZHJ101			1	
R160	RK3050	Chip R.	MCR03EZHJ103			1	
R161	RK3034	Chip R.	MCR03EZHJ471			1	
R162	RK3026	Chip R.	MCR03EZHJ101			1	
R163	RK3026	Chip R.	MCR03EZHJ101			1	
R164	RK0107	Chip R.	ERJ6GEY0R00V			1	
R165	RK3074	Chip R.	MCR03EZHJ105			1	
R168	RK3054	Chip R.	MCR03EZHJ223			1	
R172	RK3056	Chip R.	MCR03EZHJ333			1	
R173	RK3026	Chip R.	MCR03EZHJ101			1	
R176	RK3044	Chip R.	MCR03EZHJ332			1	
R180	RK3038	Chip R.	MCR03EZHJ102			1	
R181	RK3062	Chip R.	MCR03EZHJ104			1	
R182	RK3042	Chip R.	MCR03EZHJ222			1	
R183	RK3060	Chip R.	MCR03EZHJ683			1	
R184	RK3058	Chip R.	MCR03EZHJ473			1	
R185	RK3070	Chip R.	MCR03EZHJ474			1	
R186	RK3062	Chip R.	MCR03EZHJ104			1	
R187	RK3058	Chip R.	MCR03EZHJ473			1	
R188	RK3026	Chip R.	MCR03EZHJ101			1	
R189	RK3038	Chip R.	MCR03EZHJ102			1	
R190	RK3038	Chip R.	MCR03EZHJ102			1	
R191	RK3038	Chip R.	MCR03EZHJ102			1	
R192	RK3058	Chip R.	MCR03EZHJ473			1	
R193	RK3038	Chip R.	MCR03EZHJ102			1	
R195	RK3070	Chip R.	MCR03EZHJ474			1	
R196	RK3038	Chip R.	MCR03EZHJ102			1	
R197	RK3050	Chip R.	MCR03EZHJ103			1	
R198	RK3042	Chip R.	MCR03EZHJ222			1	
R199	RK3042	Chip R.	MCR03EZHJ222			1	
R200	RK3070	Chip R.	MCR03EZHJ474			1	
R201	RK3042	Chip R.	MCR03EZHJ222			1	
R203	RK3056	Chip R.	MCR03EZHJ333			1	
R204	RK3062	Chip R.	MCR03EZHJ104			1	
R206	RK0130	Chip R.	ERJ6GEYJ4R7V			1	
R207	RK3052	Chip R.	MCR03EZHJ153			1	
R208	RK3034	Chip R.	MCR03EZHJ471			1	
R209	RK3061	Chip R.	MCR03EZHJ823			1	
R210	RK3030	Chip R.	MCR03EZHJ221			1	
R211	RK4018	Chip R.	ERJ12YJ220U			1	
R212	RK4026	Chip R.	ERJ12YJ101U			1	
R213	RK3049	Chip R.	MCR03EZHJ822			1	
R214	RK3050	Chip R.	MCR03EZHJ103			1	
R215	RK3036	Chip R.	MCR03EZHJ681			1	
R216	RK3042	Chip R.	MCR03EZHJ222			1	
R217	RK3042	Chip R.	MCR03EZHJ222			1	
R218	RK3060	Chip R.	MCR03EZHJ683			1	
R219	RK3042	Chip R.	MCR03EZHJ222			1	
R220	RK4034	Chip R.	ERJ12YJ471U			1	
R221	RK3051	Chip R.	MCR03EZHJ123			1	
R222	RK3050	Chip R.	MCR03EZHJ103			1	
R223	RK3026	Chip R.	MCR03EZHJ101			1	
R224	RK3018	Chip R.	MCR03EZHJ220			1	
R226	RK3038	Chip R.	MCR03EZHJ102			1	
R227	RK3034	Chip R.	MCR03EZHJ471			1	
R228	RK3054	Chip R.	MCR03EZHJ223			1	
R229	RK3045	Chip R.	MCR03EZHJ392			1	
R230	RK3050	Chip R.	MCR03EZHJ103			1	
R231	RK3022	Chip R.	MCR03EZHJ470			1	
R234	RK3054	Chip R.	MCR03EZHJ223			1	
R235	RK3050	Chip R.	MCR03EZHJ103			1	
R236	RK3050	Chip R.	MCR03EZHJ103			1	
R237	RK3026	Chip R.	MCR03EZHJ101			1	
R238	RK3062	Chip R.	MCR03EZHJ104			1	
R239	RK3050	Chip R.	MCR03EZHJ103			1	
R240	RK3038	Chip R.	MCR03EZHJ102			1	
R241	RK3051	Chip R.	MCR03EZHJ123			1	
R242	RK3038	Chip R.	MCR03EZHJ102			1	
R243	RK3054	Chip R.	MCR03EZHJ223			1	
R244	RK3068	Chip R.	MCR03EZHJ334			1	
R245	RK3038	Chip R.	MCR03EZHJ102			1	
R246	RK3046	Chip R.	MCR03EZHJ472			1	
R247	RK3050	Chip R.	MCR03EZHJ103			1	
R248	RK3070	Chip R.	MCR03EZHJ474			1	
R249	RK3044	Chip R.	MCR03EZHJ332			1	
R250	RK3070	Chip R.	MCR03EZHJ474			1	
R251	RK3050	Chip R.	MCR03EZHJ103			1	
R252	RK3070	Chip R.	MCR03EZHJ474			1	
R253	RK3057	Chip R.	MCR03EZHJ393			1	
R254	RK3057	Chip R.	MCR03EZHJ393			1	
R255	RK3046	Chip R.	MCR03EZHJ472			1	
R256	RK3026	Chip R.	MCR03EZHJ101			1	
R257	RK3046	Chip R.	MCR03EZHJ472			1	
R258	RK3057	Chip R.	MCR03EZHJ393			1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
R259	RK3050	Chip R.	MCR03EZHJ103			1	
R260	RK3054	Chip R.	MCR03EZHJ223			1	
R261	RK3054	Chip R.	MCR03EZHJ223			1	
R262	RK3069	Chip R.	MCR03EZHJ394			1	
R263	RK3051	Chip R.	MCR03EZHJ123			1	
R264	RK3038	Chip R.	MCR03EZHJ102			1	
R265	RK3062	Chip R.	MCR03EZHJ104			1	
R266	RK3050	Chip R.	MCR03EZHJ103			1	
R268	RK3050	Chip R.	MCR03EZHJ103			1	
R269	RK3074	Chip R.	MCR03EZHJ105			1	
R271	RK4034	Chip R.	ERJ12YJ471U			1	
R272	RK3050	Chip R.	MCR03EZHJ103			1	
R273	RK3050	Chip R.	MCR03EZHJ103			1	
R274	RK3050	Chip R.	MCR03EZHJ103			1	
R277	RK3042	Chip R.	MCR03EZHJ222			1	
R279	RK3046	Chip R.	MCR03EZHJ472			1	
R280	RK1028	Chip R.	ERJ8GEYJ471V			1	
R281	RK3041	Chip R.	MCR03EZHJ182			1	
R282	RK3018	Chip R.	MCR03EZHJ220			1	
R283	RK3038	Chip R.	MCR03EZHJ102			1	
R287	RK3046	Chip R.	MCR03EZHJ472			1	
R291	RK3026	Chip R.	MCR03EZHJ101			1	
R293	RK3050	Chip R.	MCR03EZHJ103			1	
R295	RK3038	Chip R.	MCR03EZHJ102			1	
R296	RK3058	Chip R.	MCR03EZHJ473			1	
R297	RK3050	Chip R.	MCR03EZHJ103			1	
R303	RK3049	Chip R.	MCR03EZHJ822			1	
R304	RK3049	Chip R.	MCR03EZHJ822			1	
R305	RK3042	Chip R.	MCR03EZHJ222			1	
R306	RK3076	Chip R.	MCR03EZHJ155			1	
R308	RK3076	Chip R.	MCR03EZHJ155			1	
R309	RK3050	Chip R.	MCR03EZHJ103			1	
R310	RK3042	Chip R.	MCR03EZHJ222			1	
R315	RK3042	Chip R.	MCR03EZHJ222			1	
R316	RK3051	Chip R.	MCR03EZHJ123			1	
R318	RK3050	Chip R.	MCR03EZHJ103			1	
R319	RK3062	Chip R.	MCR03EZHJ104			1	
R320	RK3062	Chip R.	MCR03EZHJ104			1	
R322	RD0108	Jumper	J1/6Z			1	
R324	RK3014	Chip R.	MCR03EZHJ100			1	
R325	RK3066	Chip R.	MCR03EZHJ224			1	
R326	RK3038	Chip R.	MCR03EZHJ102			1	
R327	RK3092	Chip R.	MCR03EZPFX7502			1	
R328	RD3013	Resistor	ERX1SJ100			1	
R329	RK3062	Chip R.	MCR03EZHJ104			1	
R330	RK3062	Chip R.	MCR03EZHJ104			1	
R331	RK3038	Chip R.	MCR03EZHJ102			1	
R332	RK3054	Chip R.	MCR03EZHJ223			1	
R333	RK3062	Chip R.	MCR03EZHJ104			1	
R334	RK3042	Chip R.	MCR03EZHJ222			1	
SH101	TS0164A	Case	VCO CASE DR235			1	
TC101	CT0012	Trimmer C.	CTZ3S-10A-W1-P			1	
TC102	CT0012	Trimmer C.	CTZ3S-10A-W1-P			1	
TC103	CT0012	Trimmer C.	CTZ3S-10A-W1-P			1	
TH101	XS0031	Thermistor	NTCCM16084BH682KCT			1	
TH102	XS0030	Thermistor	NTCCM16084LH223KCT			1	
VR101	RH0146	Trimmer R.	MVR22HXBRN473			1	
VR102	RH0148	Trimmer R.	MVR22HXBRN104			1	
VR103	RH0142	Trimmer R.	MVR22HXBRN103			1	
VR104	RH0142	Trimmer R.	MVR22HXBRN103			1	
VR105	RH0142	Trimmer R.	MVR22HXBRN103			1	
VR106	RH0146	Trimmer R.	MVR22HXBRN473			1	
VR107	RH0140	Trimmer R.	MVR22HXBRN472			1	
X101	XK0002	Discriminator	CDBM455C7			1	
X103	XQ0112	Xtal	UM-5 21.250MHZ			1	
X104	XQ0058Z	Xtal	UM5 30.395MHZ			1	
XF101	XF0014Z	Xtal Filter	30M152A 30.85MHZ			1	
	TZ0072		SHEET			1	
	UP0415	P.C.B	DR435 INTEGRATED			1	
	SD0034		GND SPRING DR130			1	
	TZ0049		SILICON DUMPER			2	

VCO Unit (DR-435)

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C501	CU3047	Chip C.	C1608JB1H103KT-N			1	
C502	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C503	CU3047	Chip C.	C1608JB1H103KT-N			1	
C504	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C505	CU3023	Chip C.	C1608CH1H101JT-AS			1	
C506	CU3031	Chip C.	C1608JB1H471KT-AS			1	
C507	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C508	CU3102	Chip C.	C1608JB1C333KT-NS			1	
C509	CS0220	Chip tantalum	TMCMA1C225MTR			1	
C510	CS0220	Chip tantalum	TMCMA1C225MTR			1	
C511	CU3006	Chip C.	C1608CH1H050CT-AS			1	
C512	CU3035	Chip C.	C1608JB1H102KT-AS			1	

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
C513	CS0063	Chip tantalum	TMCSA1V104MTR			1	
C514	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C515	CU3003	Chip C.	C1608CH1H020CT-AS			1	
C516	CU3019	Chip C.	C1608CH1H470JT-AS			1	
C517	CU3006	Chip C.	C1608CH1H050CT-AS			1	
C518	CU3004	Chip C.	C1608CH1H030CT-AS			1	
C519	CU3002	Chip C.	C1608CH1H010CT-AS			1	
C520	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C521	CU3003	Chip C.	C1608CH1H020CT-AS			1	
C522	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C523	CS0372	Chip tantalum	TMCMB1C106MTR			1	
C524	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C525	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C526	CU3011	Chip C.	C1608CH1H100DT-AS			1	
C527	CU3011	Chip C.	C1608CH1H100DT-AS			1	
C528	CU3035	Chip C.	C1608JB1H102KT-AS			1	
C529	CU3006	Chip C.	C1608CH1H050CT-AS			1	
CN501	UE0368	Connector	AXN39301613			1	
D501	XD0131	Chip Diode	1SV214 TPH4			1	
D502	XD0131	Chip Diode	1SV214 TPH4			1	
D503	XD0131	Chip Diode	1SV214 TPH4			1	
IC501	XA0352	IC	M64076GP			1	
L501	QC0101	Chip Inductor	LER015TR82M			1	
L503	QA0093	Chip Inductor	QA0093			1	
L504	QC0101	Chip Inductor	LER015TR82M			1	
L505	QC0096	Chip Inductor	LER015TR33M			1	
L506	QC0430	Chip Inductor	MLF1608DR10K-T			1	
L507	QC0430	Chip Inductor	MLF1608DR10K-T			1	
Q501	XT0124	Chip Transistor	2SC4215-Y(TE85L)			1	
Q502	XE0010	Chip FET	2SK508K52 T2B			1	
Q503	XT0125	Chip Transistor	2SC4245-Y(TE85L)			1	
Q504	XT0125	Chip Transistor	2SC4245-Y(TE85L)			1	
R501	RK3030	Chip R.	MCR03EZHJ221			1	
R502	RK3022	Chip R.	MCR03EZHJ470			1	
R503	RK3038	Chip R.	MCR03EZHJ102			1	
R504	RK3038	Chip R.	MCR03EZHJ102			1	
R505	RK3038	Chip R.	MCR03EZHJ102			1	
R506	RK3001	Chip R.	MCR03EZHJ000			1	
R507	RK3047	Chip R.	MCR03EZHJ562			1	
R508	RK3050	Chip R.	MCR03EZHJ103			1	
R509	RK3038	Chip R.	MCR03EZHJ102			1	
R510	RK3026	Chip R.	MCR03EZHJ101			1	
R511	RK3034	Chip R.	MCR03EZHJ471			1	
R512	RK3054	Chip R.	MCR03EZHJ223			1	
R513	RK3043	Chip R.	MCR03EZHJ272			1	
R514	RK3060	Chip R.	MCR03EZHJ683			1	
R515	RK3058	Chip R.	MCR03EZHJ473			1	
R516	RK3022	Chip R.	MCR03EZHJ470			1	
R517	RK3060	Chip R.	MCR03EZHJ683			1	
R518	RK3022	Chip R.	MCR03EZHJ470			1	
R519	RK3022	Chip R.	MCR03EZHJ470			1	
R520	RK3050	Chip R.	MCR03EZHJ103			1	
R521	RK3045	Chip R.	MCR03EZHJ392			1	
R522	RK3030	Chip R.	MCR03EZHJ221			1	
R523	RK3030	Chip R.	MCR03EZHJ221			1	
R524	RK3050	Chip R.	MCR03EZHJ103			1	
R525	RK3042	Chip R.	MCR03EZHJ222			1	
R526	RK3044	Chip R.	MCR03EZHJ332			1	
R527	RK3038	Chip R.	MCR03EZHJ102			1	

Mechanical Parts

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
CN7	UE0401	Dsub Connector	K-D-09S-SE	1	1	1	
CN6	UX1251	Wire	WIRE DSUB	1	1	1	
	ES0017	Speaker	057M9017	1	1	1	
	UX1047	Wire	Speaker	1	1	1	
	AA0050	Screw	M2.6+6 FE/B.Zn	6	6	6	
	AE0029	Screw	RDG-LNA-W1(01)	2	2	2	
	AV0006	Screw	B2.6+8 Fe/Ni	16	16	16	
	AW0001	Screw	3+8 Fe/Ni	2	2	2	
	AZ0042	Washer		2	2	2	
	DP0127	LCD PANEL	DR135	1	-	-	
	DP0135	LCD PANEL	DR235	-	1	-	
	DP0136	LCD PANEL	DR435	-	-	1	
	FF0015	Cloth	BLIND CLOTH DR110	2	2	2	
	FF0017	Cloth	BLIND CLOTH DR570	1	1	1	
	FG0273	Rubber	ON AIR KEY RUBBER	1	1	1	
	FG0320	SP Cushion		1	1	1	
	KS0068	Bottom Case	DR135	1	1	1	T,E
	KS0070	Bottom Case	G DR135	1	1	1	TG,EG
	KZ0105	Front Panel	DR135	1	1	1	T,E
	KZ0120	Front Panel	G DR135	1	1	1	TG,EG
	NK0072	Knob	VOL DR135	1	1	1	
	NK0073	Knob	DIAL DR135	1	1	1	
	SS0093	Chassis	DR135	1	1	1	T,E
	SS0095	Chassis	G DR135	1	1	1	TG,EG

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
	ST0065	SP Holder	DR135	1	1	1	
	ST0066	SP FITTING	DR135	1	1	1	
	TG0034	SP Himelon	DR135	1	1	1	
	UE0258	ANT Connector	FM-M.D.R-(4)	1	1	1	
	YZ0131	Tape	#9110 12X1mm	60	60	60	
	DS0388A		Model Name Plate	1	-	1	E,EG
	DS0429		Model Name Plate	1	1	1	T,TG
	PR0309	Label	CE-MARKLABEL DJG5E	2.2	-	2.2	E,EG
	PR0451	Label	FCC Part 15 Seal	1	1	1	T,TG
	PR0452	Label	FCC Home Use Seal	1	1	1	T,TG

Packing Parts

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
	HK0486	Package	Item Carton DR135	1		-	
	HK0507	Package	Item Carton DR235T	-	1	-	T,TG
	HK0508	Package	Item Carton DR435T	-	-	1	
	HM0203	Carton Box	5PCS	0.2	0.2	0.2	
	HU0099	P.MTL/Carton	FRONT DR605	1	1	1	
	HU0159	P.MTL/Carton	Fixture	1	1	1	
	HU0161	P.MTL/Carton	Fixture 5PCS	0.4	0.4	0.4	
	PR0345	Label	T	3	3	3	T,TG
	PT0004A	Label	SERIAL NO.FOR CARTON	2	2	2	

ACCESSORIES

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
	ADFM78	Bracket	DR130	1	1	1	
	ADUA38	Power cable	R-B2.0X3M RECEPT.15A	1	1	1	
	EMS53	Microphone		1	1	1	E,EG
	EMS56	Microphone		1	-	-	
	EMS57	Microphone	Remote control	-	1	1	T,TG
	HP0009	Plastic bag	5X125X250(ADUA38)	1	1	1	
	HP0035	Plastic bag	5X200X250(DR135)	1	1	1	
	PH0009A		Registration Card	1	1	1	T,TG
	PK0078		Schematic Diagram DR135	1	-	-	
	PK0083		Schematic Diagram DR235	-	1	-	T,TG
	PK0085		Schematic Diagram DR435	-	-	1	
	PR0454	Label	Security Seal T	2	2	2	
	PS0370	Manual	INSTRUCTION DR235T	1	1	1	
	UX1259	Wire	SCR1	1	1	1	
	UX1260	Wire	SCR2	1	1	1	

ACCESSORIES (SCREW SET)

Ref. No.	Parts No.	Description	Parts Name	Qty			Ver
				DR-135	DR-235	DR-435	
	AA0013	Screw	M5+20 Fe/Zn	4	4	4	
	AE0012	Screw	HEXH/D M4+8 Fe/B.Zn	4	4	4	
	AJ0003	Screw	T5+20 Fe/Zn	4	4	4	
	AJ0003	Nut	N5x0.8 Fe/Zn	4	4	4	
	AZ0009	Washer	5x9.2x1.3 Fe/Zn	4	4	4	
	AZ0010	Washer	5x12x0.8 Fe/Zn	4	4	4	
	EF0005	Fuse	FGBO 125V 15A	2	2	2	
	FM0079Z	SPANNER	DR130	1	1	1	
	HP0006	Plastic bag	5X90X170	1	1	1	
	YZ0121	Tape	Tape 10mm	2	2	2	

TNC (EJ41U)

Ref.No.	Parts No.	Description	Parts Name	Qty
BAT1	ED0006	Battery	BR2032 1F2	1
C1	CS0408	Chip Tantal	6MCM156MATER	1
C2	CS0408	Chip Tantal	6MCM156MATER	1
C3	CU3035	Chip C.	C1608JB1H102KT-AS	1
C4	CU3111	Chip C.	C1608JB1C104KT-N	1
C5	CU9018	Chip C.	C3216JB1C105MT-N	1
C6	CU3047	Chip C.	C1608JB1H103KT-N	1
C7	CU3047	Chip C.	C1608JB1H103KT-N	1
C8	CU3111	Chip C.	C1608JB1C104KT-N	1
C9	CU3051	Chip C.	C1608JB1E223KT-NS	1
C10	CU3111	Chip C.	C1608JB1C104KT-N	1
C11	CU3111	Chip C.	C1608JB1C104KT-N	1
C12	CU9018	Chip C.	C3216JB1C105MT-N	1
C13	CU3051	Chip C.	C1608JB1E223KT-NS	1
C14	CU3116	Chip C.	C1608CH1H471JT-AS	1
C15	CU3051	Chip C.	C1608JB1E223KT-NS	1
C16	CU3051	Chip C.	C1608JB1E223KT-NS	1
C17	CU3045	Chip C.	C1608JB1H682KT-NS	1
C18	CU3045	Chip C.	C1608JB1H682KT-NS	1
C19	CU3047	Chip C.	C1608JB1H103KT-N	1
C20	CU9018	Chip C.	C3216JB1C105MT-N	1
C21	CU3111	Chip C.	C1608JB1C104KT-N	1
C22	CU3035	Chip C.	C1608JB1H102KT-AS	1
C23	CU3111	Chip C.	C1608JB1C104KT-N	1
C24	CU3004	Chip C.	C1608CH1H030CT-AS	1
C25	CU3047	Chip C.	C1608JB1H103KT-N	1
C26	CU3027	Chip C.	C1608CH1H221JT-AS	1
C27	CU3023	Chip C.	C1608CH1H101JT-AS	1
C28	CU3111	Chip C.	C1608JB1C104KT-N	1
C29	CU3111	Chip C.	C1608JB1C104KT-N	1
C30	CU3111	Chip C.	C1608JB1C104KT-N	1
C31	CU3062	Chip C.	C1608CH1H160JT-A	1
C32	CU3111	Chip C.	C1608JB1C104KT-N	1
C33	CS0049	Chip Tantal	TMCSA1C105MTR	1
C34	CS0394	Chip Tantal	TMCMB0J476MTR	1
C35	CU3111	Chip C.	C1608JB1C104KT-N	1
C36	CU3019	Chip C.	C1608CH1H470JT-AS	1
C37	CU3043	Chip C.	C1608JB1H472KT-NS	1
C38	CU3111	Chip C.	C1608JB1C104KT-N	1
C39	CU3047	Chip C.	C1608JB1H103KT-N	1
C40	CU3045	Chip C.	C1608JB1H682KT-NS	1
C41	CU3116	Chip C.	C1608CH1H471JT-AS	1
C42	CU9018	Chip C.	C3216JB1C105MT-N	1
C43	CU3039	Chip C.	C1608JB1H222KT-AS	1
C44	CU3051	Chip C.	C1608JB1E223KT-NS	1
C45	CU3045	Chip C.	C1608JB1H682KT-NS	1
C46	CU3039	Chip C.	C1608JB1H222KT-AS	1
C48	CU3111	Chip C.	C1608JB1C104KT-N	1
CN1	UE0402	Connector	PI28B11M	1
D1	XL0036	LED	SML-310MTT86	1
D2	XL0035	LED	SML-310UTT86	1
D3	XL0036	LED	SML-310MTT86	1
D4	XL0036	LED	SML-310MTT86	1
D5	XD0291	Diode	MA729-TX	1
D6	XD0291	Diode	MA729-TX	1
IC1	XA0678	IC	TGT0210Q	1
IC2	XA0463	IC	TA75S393F(TE85L)	1
IC3	XA0679	IC	TMT0110Q	1
IC4	XA0224	IC	NJM2904M T1	1
IC5	XA0326	IC	NJM2903(T1)	1
IC6	XA0680	IC	ADM232AARN-REEL	1
IC7	XA0668	IC	S-80829ALNP-EAS-T2	1
L2	QB0044	Chip Coil	BK1608HM601-T	1
Q1	XT0095	Transister	2SC4081 T106R	1
Q2	XT0094	Transister	2SA1576A T106R	1
Q3	XT0094	Transister	2SA1576A T106R	1
Q4	XT0094	Transister	2SA1576A T106R	1
Q5	XE0029	FET	2SK1580-T1	1
Q6	XT0095	Transister	2SC4081 T106R	1
Q7	XU0078	Transister	UN521L-TX	1
Q8	XT0095	Transister	2SC4081 T106R	1
Q9	XT0094	Transister	2SA1576A T106R	1
Q10	XT0095	Transister	2SC4081 T106R	1
Q11	XT0095	Transister	2SC4081 T106R	1
R1	RK3062	Chip R.	MCR03EZHJ104	1
R2	RK3062	Chip R.	MCR03EZHJ104	1
R3	RK3062	Chip R.	MCR03EZHJ104	1
R4	RK3062	Chip R.	MCR03EZHJ104	1
R5	RK3034	Chip R.	MCR03EZHJ471	1
R6	RK3034	Chip R.	MCR03EZHJ471	1
R7	RK3034	Chip R.	MCR03EZHJ471	1
R8	RK3032	Chip R.	MCR03EZHJ331	1
R9	RK3038	Chip R.	MCR03EZHJ102	1
R10	RK3050	Chip R.	MCR03EZHJ103	1
R11	RK3066	Chip R.	MCR03EZHJ224	1
R12	RK3038	Chip R.	MCR03EZHJ102	1

Ref.No.	Parts No.	Description	Parts Name	Qty
R13	RK3038	Chip R.	MCR03EZHJ102	1
R14	RK3038	Chip R.	MCR03EZHJ102	1
R15	RK3038	Chip R.	MCR03EZHJ102	1
R16	RK3038	Chip R.	MCR03EZHJ102	1
R17	RK3050	Chip R.	MCR03EZHJ103	1
R18	RK3050	Chip R.	MCR03EZHJ103	1
R19	RK3038	Chip R.	MCR03EZHJ102	1
R20	RK3038	Chip R.	MCR03EZHJ102	1
R21	RK3053	Chip R.	MCR03EZHJ183	1
R22	RK3054	Chip R.	MCR03EZHJ223	1
R23	RK3050	Chip R.	MCR03EZHJ103	1
R24	RK3071	Chip R.	MCR03EZHJ564	1
R25	RK3050	Chip R.	MCR03EZHJ103	1
R26	RK3050	Chip R.	MCR03EZHJ103	1
R27	RK3050	Chip R.	MCR03EZHJ103	1
R28	RK3048	Chip R.	MCR03EZHJ682	1
R29	RK3050	Chip R.	MCR03EZHJ103	1
R30	RK3044	Chip R.	MCR03EZHJ332	1
R32	RK3042	Chip R.	MCR03EZHJ222	1
R33	RK3050	Chip R.	MCR03EZHJ103	1
R34	RK3051	Chip R.	MCR03EZHJ123	1
R35	RK3051	Chip R.	MCR03EZHJ123	1
R36	RK3054	Chip R.	MCR03EZHJ223	1
R37	RK3051	Chip R.	MCR03EZHJ123	1
R38	RK3051	Chip R.	MCR03EZHJ123	1
R39	RK3050	Chip R.	MCR03EZHJ103	1
R40	RK3051	Chip R.	MCR03EZHJ123	1
R41	RK3054	Chip R.	MCR03EZHJ223	1
R42	RK3044	Chip R.	MCR03EZHJ332	1
R44	RK3001	Chip R.	MCR03EZHJ000	1
R45	RK3030	Chip R.	MCR03EZHJ221	1
R46	RK3057	Chip R.	MCR03EZHJ393	1
R47	RK3050	Chip R.	MCR03EZHJ103	1
R48	RK3050	Chip R.	MCR03EZHJ103	1
R49	RK3046	Chip R.	MCR03EZHJ472	1
R50	RK3038	Chip R.	MCR03EZHJ102	1
R51	RK3061	Chip R.	MCR03EZHJ823	1
R52	RK3058	Chip R.	MCR03EZHJ473	1
R53	RK3054	Chip R.	MCR03EZHJ223	1
R54	RK3001	Chip R.	MCR03EZHJ000	1
R55	RK3062	Chip R.	MCR03EZHJ104	1
R56	RK3064	Chip R.	MCR03EZHJ154	1
R57	RK3058	Chip R.	MCR03EZHJ473	1
R58	RK3050	Chip R.	MCR03EZHJ103	1
R59	RK3001	Chip R.	MCR03EZHJ000	1
R60	RK3044	Chip R.	MCR03EZHJ332	1
R61	RK3001	Chip R.	MCR03EZHJ000	1
R62	RK3060	Chip R.	MCR03EZHJ683	1
R63	RK3029	Chip R.	MCR03EZHJ181	1
R64	RK3050	Chip R.	MCR03EZHJ103	1
R65	RK3050	Chip R.	MCR03EZHJ103	1
R66	RK3059	Chip R.	MCR03EZHJ563	1
R67	RK3050	Chip R.	MCR03EZHJ103	1
R68	RK3054	Chip R.	MCR03EZHJ223	1
R69	RK3050	Chip R.	MCR03EZHJ103	1
R70	RK3050	Chip R.	MCR03EZHJ103	1
R71	RK3050	Chip R.	MCR03EZHJ103	1
R72	RK3050	Chip R.	MCR03EZHJ103	1
R73	RK3001	Chip R.	MCR03EZHJ000	1
R74	RK3058	Chip R.	MCR03EZHJ473	1
R75	RK3062	Chip R.	MCR03EZHJ104	1
R76	RK3064	Chip R.	MCR03EZHJ154	1
R77	RK3030	Chip R.	MCR03EZHJ221	1
R78	RK3050	Chip R.	MCR03EZHJ103	1
R79	RK3050	Chip R.	MCR03EZHJ103	1
R80	RK3058	Chip R.	MCR03EZHJ473	1
R81	RK3058	Chip R.	MCR03EZHJ473	1
R82	RK3044	Chip R.	MCR03EZHJ332	1
R83	RK3074	Chip R.	MCR03EZHJ105	1
R84	RK3050	Chip R.	MCR03EZHJ103	1
R85	RK3046	Chip R.	MCR03EZHJ472	1
R87	RK3062	Chip R.	MCR03EZHJ104	1
R88	RK3062	Chip R.	MCR03EZHJ104	1
VR1	RH0142	Trim.Pot	MVR22HXBRN103	1
VR2	RH0142	Trim.Pot	MVR22HXBRN103	1
W2	UX1253	Connector	WIRE TNC	1
X1	XQ0124	Xtal	AT-49 7.9872MHZ	1
	UP0402	PCB	EJ41U (TNC)	0.125
	FF0033	VELCRO	A	1
	FG0040	Cushion		2
	TZ0024	Insulator	LITHIUM BATT.	1
	TZ0056	Insulator	SILICON 49U	1
	YZ0131	Tape	#9110 12X1mm	25

TNC (EJ41U) Packing Parts

Ref.No.	Parts No.	Description	Parts Name	Qty
	FD0001	Floppy-Disc	(WIN2HD)	1
	FF0034	VELCRO	B	1
	FG0040	Cushion		1
	HK0487	Package	Item Carton EJ41U	1
	HP0029	Plastic bag	5X100X100	1
	HP0040	Plastic bag	8X130X200	1
	PF0061	SHEET	EJ41U	1
	PR0449	Label	EJ41U	1
	PS0354	Manual	INSTRUCTION EJ41U	1
	PS0355	Manual	INST-DISC EJ41U	1
	UZ0030	Plug	MP-013LC 3.5mm Plug	1

DR-135 ADJUSTMENT

1) Adjustment Spot

Power Supply Voltage 13.8 V

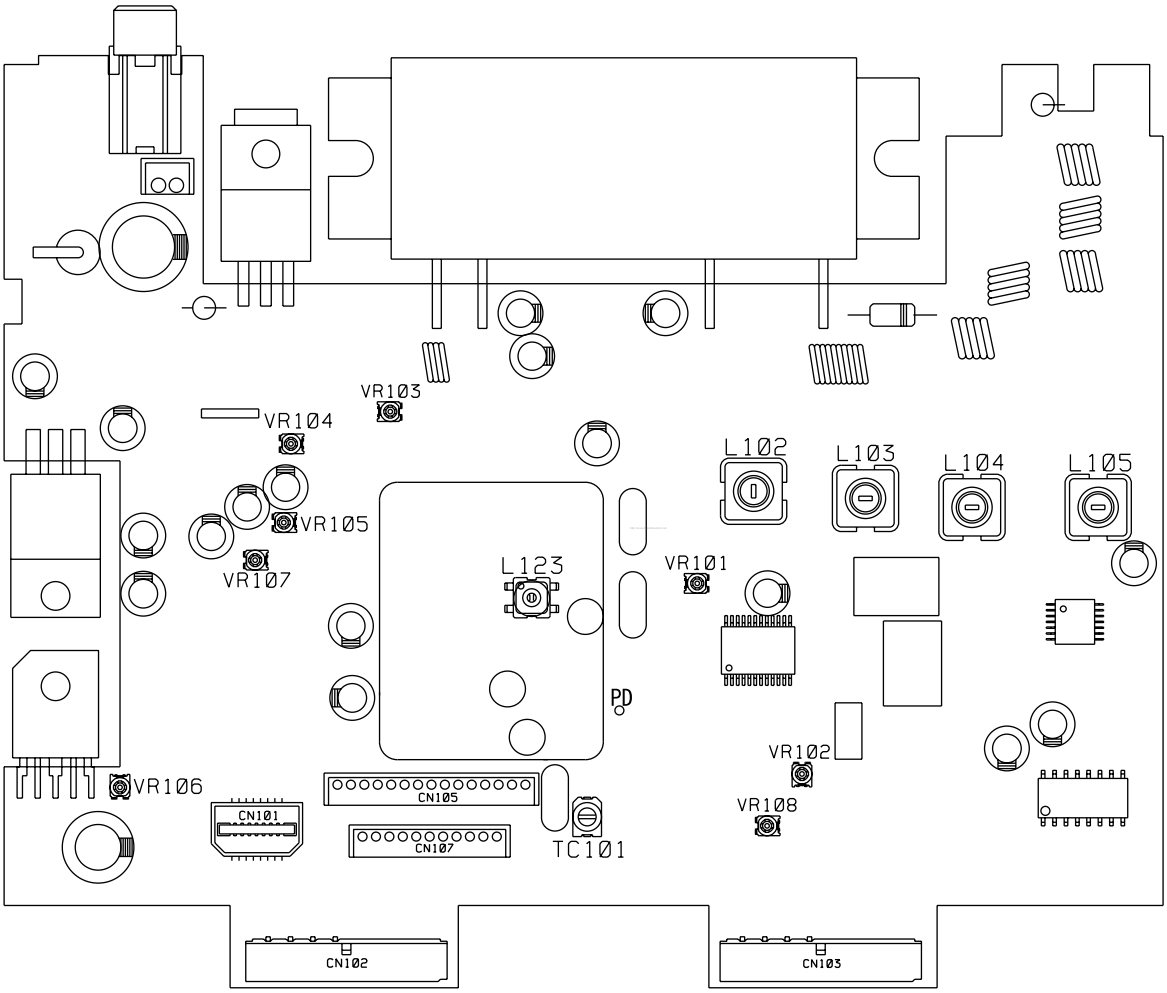
Output of SSG is all EMF indication

If without instruction, WIDE mode

If without instruction, SSG output is MOD 1KHz WIDE DEV 3.5KHz/DEV, NARROW DEV 1.75KHz/DEV

Standard Modulation is also based above.

Speaker load is 8Ω and Output is 50~100 mV.



Attention:Don't set the variable resistor into its open position.

2) VCO and RX Adjustment Specification

ITEM	CONDITION	UNIT	ADJ.SPOT	ADJUSTING METHOD
Adjustment Frequency	145.90MHz TX	MAIN	TC101	Adjust so that Tx Frequency becomes within 145.90MHz±100Hz
VCO Adjustment	136.00MHz RX	MAIN	L123	Adjust so that PD voltage becomes 1.5V
VCO Confirmation	173.99MHz RX	MAIN		Confirm if PD voltage becomes less than 7.3 V
Rx Signal Sensitivity Adjustment	146.05MHz 136.05MHz 146.05MHz 173.95MHz	MAIN	L105, L104 L103, L102	Repeatedly adjust so that the Rx sensitivity becomes in maximum. Confirm: At -7dBu SINAD more than 12dB At -8dBu SINAD more than 12dB At -6dBu SINAD more than 12dB
Squelch Adjustment	146.05MHz SSG OFF Indication 01	MAIN	VR101	Adjust so that the squelch stops at perfectly close location
S Meter Adjustment	146.05MHz SSG20dBu 1KHz 3.5KHz/DEV	MAIN	VR102	Adjust so that all the indicator appears

3) Tx Adjustment Specification

ITEM	CONDITION	UNIT	ADJ.SPOT	ADJUSTING METHOD
HI POWER Adjustment	146.00MHz HI POWER	MAIN	VR103	Adjust to 50.0±1.0W
MID POWER Adjustment	146.00MHz MID POWER	MAIN	VR104	Adjust to 10.0±1.0W
LOW POWER Confirmation	146.00MHz LOW POWER	MAIN		Confirm if it becomes 4.0 ±1.0W
Maximum Deviation Adjustment	146.00MHz MOD 1KHz40mVemf WIDE	MAIN	VR107	4.5±0.1KHz/DEV
Maximum Deviation Adjustment	146.00MHz MOD 1KHz40mVemf NARROW	MAIN	VR105	2.2±0.1KHz/DEV
Mic Gain Adjustment	146.00MHz MOD 1KHz4mVemf WIDE	MAIN	VR106	3.0±0.1KHz/DEV
CTCSS Modulation Level Confirmation	146.00MHz 88.5Hz	MAIN		800±200Hz/DEV 3KHz LPF ON
DCS Modulation Level Adjustment	146.00MHz 255 Code	MAIN	VR108	800±50Hz/DEV 3KHz LPF ON
1750Hz Modulation Level Confirmation	146.00MHz 1750Hz	MAIN		3.0±0.5KHz/DEV
DTMF Modulation Level Confirmation	146.00MHz DTMF① Press the V/M key during TX	MAIN		3.0±0.5KHz/DEV

4) Rx Test Specification

TEST ITEM	CONDITION	ADJ STANDARD	TEST STANDARD	NOTE
RX Sensitivity	136.05MHz 146.05MHz 173.95MHz	Less than -7dBu Less than -8dBu Less than -6dBu	Less than -6dBu Less than -7dBu Less than -5dBu	12dBSINAD
	146.05MHz NARROW	Less than -8dBu	Less than -7dBu	
	135.05MHz	Less than 9dBu	Less than 10dBu	AM 10dB S/N
RX Distortion	WIDE	Less than 4%	Less than 5%	SSG OUT PUT 30dBu
	NARROW			
RX S/N	WIDE	More than 40dB	More than 38dB	SSG OUT PUT 30dBu 0.3~3KHzBPF OFF
	NARROW	More than 34dB	More than 32dB	
Squelch Sensitivity	146.05MHz Indication 02	Squelch Open	Squelch Open	SSG Output -10dBu
		Squelch Close	Squelch Close	SSG Output OFF
S Meter	146.05MHz 1KHz 3.5KHz/DEV	All appears at 20dBu	All appears at 25dBu	Decrease SSG level and decrease S Meter level
AF Output	146.05MHz	More than 2W	More than 2W	SSG Output 30dBu
CTCSS Sensitivity	WIDE	Openat 500Hz/DEV	Open at 500Hz/DEV	SSG Output 0dBu 88.5Hz
	NARROW	Open at 250Hz/DEV	Open at 250Hz/DEV	
DCS Sensitivity	WIDE	Opens when Test Equipment is in Tx	Opens when Test Equipment is in Tx	255 code
	NARROW	Opens when Test Equipment is in Tx	Opens when Test Equipment is in Tx	255 code
Drain Current	146.05MHz	Less than 0.65A	Less than 0.65A	MAX VR
Power Off Current	146.05MHz	Less than 10mA	Less than 10mA	Power Off
Howling	146.05MHz	Don't occur	Don't occur	SSG Output 60dBu MOD OFF MAX VR

5) Tx Test Specification

TEST ITEM	CONDITION	ADJ STANDARD	TEST STANDARD	NOTE
TX Output HI POWER	136.00MHz 144.00MHz 146.00MHz 148.00MHz 173.99MHz	More than 33W 50±1W More than 33W	More than 33W 50±3W 50±3W 50±3W More than 33W	←TA,TAG ONLY ←T,TG ONLY ←TA,TAG ONLY
TX Output MID POWER	146.00MHz	10±1W	10 ±2W	
TX Output LOW POWER	146.00MHz	4±1W	3~6W	
Drain Current	146.00MHz	Less than 10A	Less than 11A	
Frequency Deviation	146.00MHz	Within ±0.3KHz	Within±0.5KHz	
Spurious	136.00MHz 144.00MHz 146.00MHz 148.00MHz 173.99MHz	More than 60dB More than 65dB More than 65dB More than 65dB More than 60dB	More than 55dB← More than 60dB More than 60dB More than 60dB More than 55dB← TA,TAG ONLY	M and L standard power is also the same as of H power level
Modulation Level	WIDE 146.00MHz	3.0±0.1KHz/DEV 4.5±0.1KHz/DEV	3.0±0.2KHz/DEV 4.5±0.2KHz/DEV	MIC IN 4mVemf MIC IN 40mVemf
	NARROW 146.00MHz	2.2±0.1KHz/DEV	2.2±0.2KHz/DEV	MIC IN 40mVemf
CTCSS Modulation Level	WIDE 146.00MHz	800±200Hz/DEV	800±200Hz/DEV	88.5Hz 3KHz LPF ON
DCS Modulation Level	WIDE 146.00MHz	800±200Hz/DEV	800±200Hz/DEV	Code 255 3KHz LPF ON
	NARROW 146.00MHz	450±100Hz/DEV	450±100Hz/DEV	Code 255 3KHz LPF ON
1750Hz Modulation Level	WIDE 146.00MHz	3.0±0.5KHz/DEV	3.0±0.5KHz/DEV	
DTMF Modulation Level	WIDE 146.00MHz	3.0±0.5KHz/DEV	3.0±0.5KHz/DE V	Press the V/M key during TX
Modulation Distortion	146.00MHz	Less than 3%	Less than 4%	
TX S/N	WIDE	More than 40dB	More than 38dB	0.3 ~ 3KHz BPF ON
	NARROW	More than 34dB	More than 32dB	

DR-235 ADJUSTMENT

1) Adjustment Spot

Power Supply Voltage 13.8 V

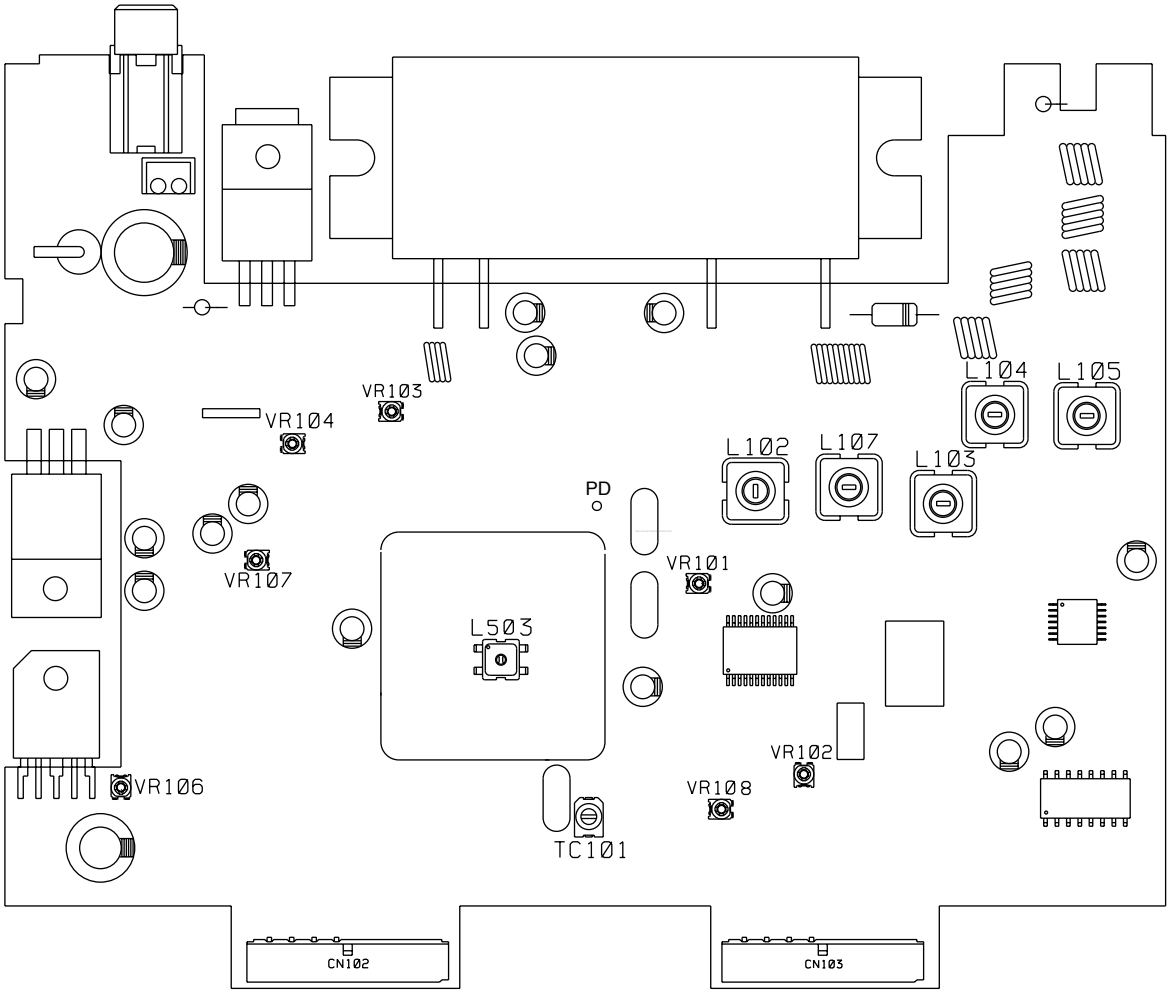
Output of SSG is all EMF indication

If without instruction, WIDE mode

If without instruction, SSG output is MOD 1KHz WIDE DEV 3.5KHz/DEV, NARROW DEV 1.75KHz/DEV

Standard Modulation is also based above.

Speaker load is 8Ω and Output is 50~100 mV.



Attention:Don't set the variable resistor into its open position.

2) VCO and RX Adjustment Specification

ITEM	CONDITION	UNIT	ADJ.SPOT	ADJUSTING METHOD
Adjustment Frequency	224.90MHz TX	MAIN	TC101	Adjust so that Tx Frequency becomes within 224.90MHz±100Hz
VCO Adjustment	225.00MHz RX	VCO	L503	Adjust so that PD voltage becomes 2.2V
VCO Confirmation	224.99MHz TX	VCO		Confirm if PD voltage becomes less than 6.2 V
Rx Signal Sensitivity Adjustment	223.50MHz 216.05MHz 223.50MHz 250.05MHz	MAIN	L105, L104 L103, L107 L102	Repeatedly adjust so that the Rx sensitivity becomes in maximum. Confirm: At -7dBu SINAD more than 12dB At -8dBu SINAD more than 12dB At -3dBu SINAD more than 12dB
Squelch Adjustment	223.50MHz SSG OFF Indication 01	MAIN	VR101	Adjust so that the squelch stops at perfectly close location
S Meter Adjustment	223.50MHz SSG20dBu 1KHz 3.5KHz/DEV	MAIN	VR102	Adjust so that all the indicator appears

3) Tx Adjustment Specification

ITEM	CONDITION	UNIT	ADJ.SPOT	ADJUSTING METHOD
HI POWER Adjustment	223.50MHz HI POWER	MAIN	VR103	Adjust to 25.0±1.0W
MID POWER Adjustment	223.50MHz MID POWER	MAIN	VR104	Adjust to 10.0±1.0W
LOW POWER Confirmation	223.50MHz LOW POWER	MAIN		Confirm if it becomes 4.5±1.0W
Maximum Deviation Adjustment	223.50MHz MOD 1KHz40mVemf WIDE	MAIN	VR107	4.5±0.1KHz/DEV
Maximum Deviation Adjustment	223.50MHz MOD 1KHz40mVemf NARROW	MAIN	VR105	2.2±0.1KHz/DEV
Mic Gain Adjustment	223.50MHz MOD 1KHz4mVemf WIDE	MAIN	VR106	3.0±0.1KHz/DEV
CTCSS Modulation Level Confirmation	223.50MHz 88.5Hz	MAIN		800±300Hz/DEV 3KHz LPF ON
DCS Modulation Level Adjustment	223.50MHz 255 Code	MAIN	VR108	800±100Hz/DEV 3KHz LPF ON
1750Hz Modulation Level Confirmation	223.50MHz 1750Hz	MAIN		3.0±0.5KHz/DEV
DTMF Modulation Level Confirmation	223.50MHz DTMF① Press the V/M key during TX	MAIN		3.0±0.5KHz/DEV

4) Rx Test Specification

TEST ITEM	CONDITION	ADJ STANDARD	TEST STANDARD	NOTE
RX Sensitivity	216.05MHz 223.50MHz 250.05MHz	Less than -7dBu Less than -8dBu Less than -3dBu	Less than -6dBu Less than -7dBu Less than -2dBu	12dBSINAD
	223.50MHz NARROW	Less than -8dBu	Less than -7dBu	
	223.50MHz	Less than+6dBu	Less than +7dBu	AM 10dB S/N
RX Distortion	WIDE	Less than 4%	Less than 5%	SSG OUT PUT 30dBu
	NARROW			
RX S/N	WIDE	More than 40dB	More than 38dB	SSG OUT PUT 30dBu 0.3~3KHzBPF OFF
	NARROW	More than 34dB	More than 32dB	
Squelch Sensitivity	223.50MHz Indication 02	Squelch Open	Squelch Open	SSG Output -10dBu
		Squelch Close	Squelch Close	SSG Output OFF
S Meter	223.50MHz 1KHz 3.5KHz/DEV	All appears at 20dBu	All appears at 25dBu	Decrease SSG level and decrease S Meter level
AF Output	223.50MHz	More than 2W	More than 2W	SSG Output 30dBu
CTCSS Sensitivity	WIDE	Open at 500Hz/DEV	Open at 500Hz/DEV	SSG Output 0dBu 88.5Hz
	NARROW	Open at 250Hz/DEV	Open at 250Hz/DEV	
DCS Sensitivity	WIDE	Opens when Test Equipment is in Tx	Opens when Test Equipment is in Tx	255 code
	NARROW	Opens when Test Equipment is in Tx	Opens when Test Equipment is in Tx	255 code
Drain Current	223.50MHz	Less than 0.65A	Less than 0.65A	MAX VR
Power Off Current	223.50MHz	Less than 10mA	Less than 10mA	Power Off
Howling	223.50MHz	Don't occur	Don't occur	SSG Output 60dBu MOD OFF MAX VR

5) Tx Test Specification

TEST ITEM	CONDITION	ADJ STANDARD	TEST STANDARD	NOTE
TX Output HI POWER	222.00MHz 223.50MHz 224.99MHz	25±1W 25±1W 25±1W	25±3W 25±3W 25±3W	
TX Output MID POWER	223.50MHz	10±1W	10±2W	
TX Output LOW POWER	223.50MHz	4.5±1W	3~6W	
Drain Current	223.50MHz	Less than 7A	Less than 8A	
Frequency Deviation	223.50MHz	Within±0.5KHz	Within±0.7KHz	
Spurious	222.00MHz 223.50MHz 224.99MHz	More than 65dB More than 65dB More than 65dB	More than 60dB More than 60dB More than 60dB	M and L standard power is also the same as of H power level
Modulation Level	WIDE 223.50MHz	3.0±0.1KHz/DEV 4.5±0.1KHz/DEV	3.0±0.2KHz/DEV 4.5±0.2KHz/DEV	MIC IN 4mVemf MIC IN 40mVemf
	NARROW 223.50MHz	2.2±0.1KHz/DEV	2.2±0.2KHz/DEV	MIC IN 40mVemf
CTCSS Modulation Level	WIDE 223.50MHz	800±200Hz/DEV	800±200Hz/DEV	88.5Hz 3KHz LPF ON
DCS Modulation Level	WIDE 223.50MHz	800±100Hz/DEV	800±200Hz/DEV	Code 255 3KHz LPF ON
	NARROW 146.00MHz	500±100Hz/DEV	450±100Hz/DEV	Code 255 3KHz LPF ON
1750Hz Modulation Level	WIDE 146.00MHz	3.0±0.5KHz/DEV	3.0±0.5KHz/DEV	
DTMF Modulation Level	WIDE 146.00MHz	3.0±0.5KHz/DEV	3.0±0.5KHz/DEV	Press the V/M key during TX
Modulation Distortion	146.00MHz	Less than 3%	Less than 4%	
TX S/N	WIDE	More than 40dB	More than 38dB	0.3~3KHz BPF ON
	NARROW	More than 34dB	More than 32dB	

DR-435 ADJUSTMENT

1) Adjustment Spot

Power Supply Voltage 13.8 V

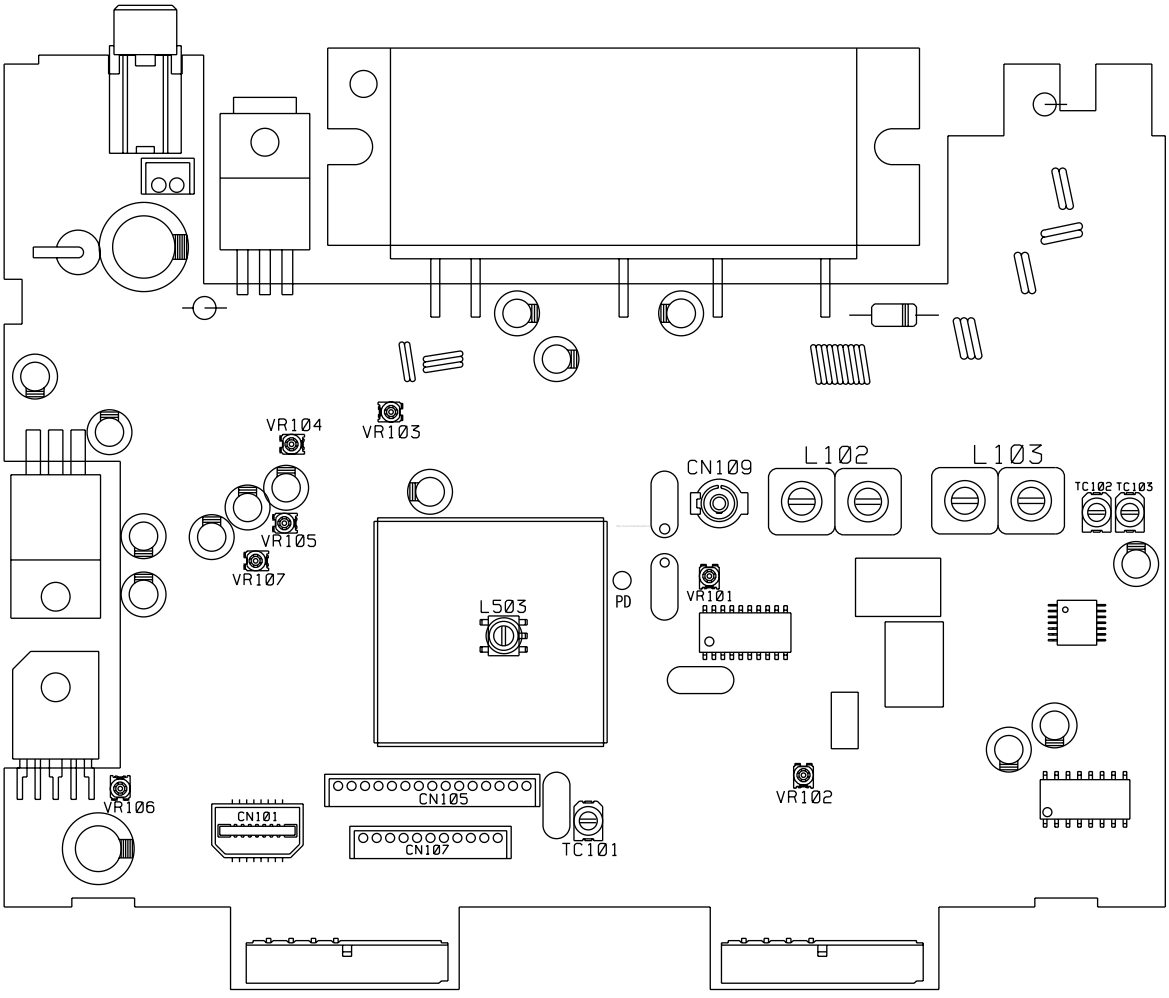
Output of SSG is all EMF indication

If without instruction, WIDE mode

If without instruction, SSG output is MOD 1KHz WIDE DEV 3.5KHz/DEV, NARROW DEV 1.75KHz/DEV

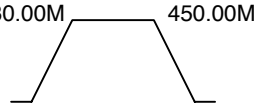
Standard Modulation is also based above.

Speaker load is 8Ω and Output is 50~100 mV.



Attention:Don't set the variable resistor into its open position.

2) VCO and RX Adjustment Specification

ITEM	CONDITION	UNIT	ADJ.SPOT	ADJUSTING METHOD
Adjustment Frequency	439.00MHz TX	MAIN	TC101	Adjust so that Tx Frequency becomes within 439.00MHz±100Hz
VCO Adjustment	425.00MHz RX	VCO	L503	Adjust so that PD voltage becomes 1.7V
VCO Confirmation	511.95MHz RX	VCO		Confirm if PD voltage becomes less than 9.0 V
Rx Signal Sensitivity Adjustment	440.05MHz 430.05MHz 440.05MHz 450.05MHz	MAIN	TC103 TC102 L103, L102	It is a tracking generator from an antenna connector. -30dBm is inputted.And when CN109 is seen with a spectrum analyzer, by the maximum gain, it becomes as it is shown in the following figure, and appearance adjustment is carried out. 430.00M 450.00M  At -7.5dBu SINAD more than 12dB At -7.5dBu SINAD more than 12dB At -7.5dBu SINAD more than 12dB
Squelch Adjustment	440.05MHz SSG OFF Indication 01	MAIN	VR101	Adjust so that the squelch stops at perfectly close location
S Meter Adjustment	440.05MHz SSG20dBu 1KHz 3.5KHz/DEV	MAIN	VR102	Adjust so that all the indicator appears

3) Tx Adjustment Specification

ITEM	CONDITION	UNIT	ADJ.SPOT	ADJUSTING METHOD
HI POWER Adjustment	440.00MHz HI POWER	MAIN	VR103	Adjust to 35.0±1.0W
MID POWER Adjustment	440.00MHz MID POWER	MAIN	VR104	Adjust to 10.0±1.0W
LOW POWER Confirmation	440.00MHz LOW POWER	MAIN		Confirm if it becomes 5.0±1.0W
Maximum Deviation Adjustment	440.00MHz MOD 1KHz40mVemf WIDE	MAIN	VR107	4.5±0.1KHz/DEV
Maximum Deviation Adjustment	440.00MHz MOD 1KHz40mVemf NARROW	MAIN	VR105	2.2±0.1KHz/DEV
Mic Gain Adjustment	440.00MHz MOD 1KHz4mVemf WIDE	MAIN	VR106	3.0±0.1KHz/DEV
CTCSS Modulation Level Confirmation	440.00MHz 88.5Hz	MAIN		800±200Hz/DEV 3KHz LPF ON
DCS Modulation Level Confirmation	440.00MHz 255 Code	MAIN		800±200Hz/DEV 3KHz LPF ON
1750Hz Modulation Level Confirmation	440.00MHz 1750Hz	MAIN		3.0±0.5KHz/DEV
DTMF Modulation Level Confirmation	440.00MHz DTMF ① Press the V/M key during TX	MAIN		3.0±0.5KHz/DEV

4) Rx Test Specification

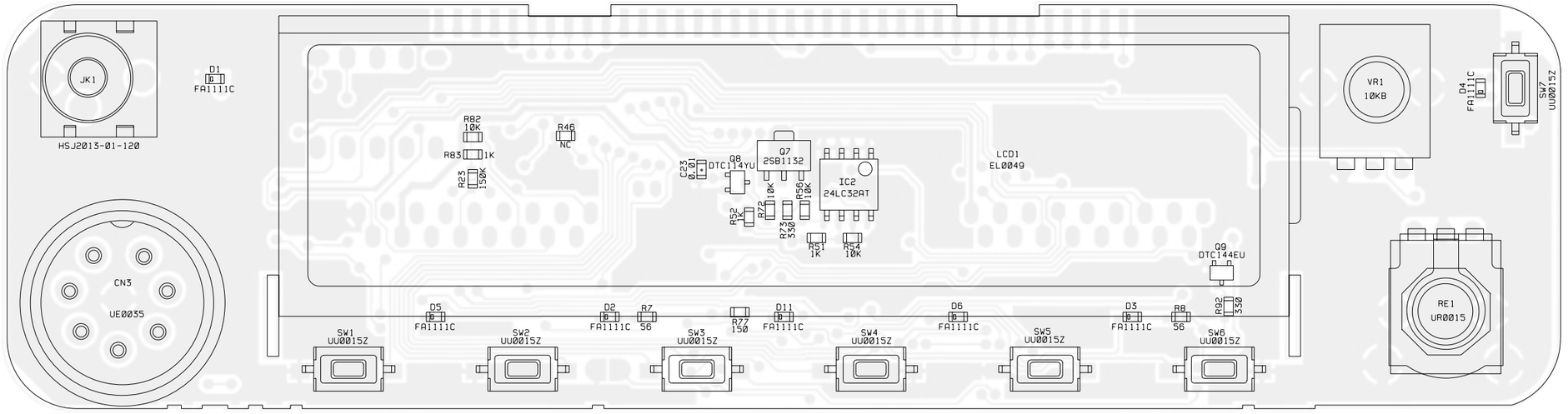
TEST ITEM	CONDITION	ADJ STANDARD	TEST STANDARD	NOTE
RX Sensitivity	350.05MHz 430.05MHz 440.05MHz 450.05MHz 511.95MHz	Less than -1dBu Less than -7.5dBu Less than-7.5dBu Less than-7.5dBu Less than +1dBu	Less than 0dBu Less than-6.5dBu Less than-6.5dBu Less than-6.5dBu Less than +2dBu	12dBSINAD
	440.05MHz NARROW	Less than-7.5dBu	Less than-6.5dBu	
RX Distortion	WIDE	Less than 4%	Less than 5%	SSG Output 40dBu
	NARROW			
RX S/N	WIDE	More than 40dB	More than 38dB	SSG Output 40dBu 0.3~3KHzBPF OFF
	NARROW	More than 34dB	More than 32dB	
Squelch Sensitivity	440.05MHz Indication 02	Squelch Open	Squelch Open	SSG Output -10dBu
		Squelch Close	Squelch Close	SSG Output OFF
S Meter	440.05MHz 1KHz 3.5KHz/DEV	All appears at 20dBu	All appears at 25dBu	Decrease SSG level and decrease S Meter level
AF Output	440.05MHz	More than 2W	More than 2W	SSG Output 40dBu
CTCSS Sensitivity	WIDE	Open at 500Hz/DEV	Open at 500Hz/DEV	SSG Output 0dBu 88.5Hz
	NARROW	Open at 250Hz/DEV	Open at 250Hz/DEV	
DCS Sensitivity	WIDE	Opens when Test Equipment is in Tx	Opens when Test Equipment is in Tx	255 code
	NARROW	Opens when Test Equipment is in Tx	Opens when Test Equipment is in Tx	255 code
Drain Current	440.05MHz	Less than 0.7A	Less than 0.7A	MAX VR
Power Off Current	440.05MHz	Less than 10mA	Less than 10mA	Power Off
Howling	440.05MHz TP,TPG WIDE MODE OTHER NARROW MODE	Don't occur	Don't occur	SSG Output 60dBu MOD OFF MAX VR

5) Tx Test Specification

TEST ITEM	CONDITION	ADJ STANDARD	TEST STANDARD	NOTE
TX Output HI POWER	430.00MHz 440.00MHz 450.00MHz	35±1W	35±3W 35±3W 35±3W	← T,TG ONLY
TX Output MID POWER	440.00MHz	10±1W	10±2W	
TX Output LOW POWER	440.00MHz	5±1W	5±2W	
Drain Current	440.00MHz	Less than 9A	Less than 10A	
Frequency Deviation	440.00MHz	Within ±0.5KHz	Within ±1.0KHz	
Spurious	430.00MHz 440.00MHz 450.00MHz	More than 62dB More than 62dB More than 62dB	More than 60dB More than 60dB More than 60dB 450MHz T,TG ONLY	M and L standard power is also the same as of H power level
Modulation Level	WIDE 440.00MHz	3.0±0.1KHz/DEV 4.5±0.1KHz/DEV	3.0±0.2KHz/DEV 4.5±0.2KHz/DEV	MIC IN 4mVemf MIC IN 40mVemf
	NARROW 440.00MHz	2.2±0.1KHz/DEV	2.2±0.2KHz/DEV	MIC IN 40mVemf
CTCSS Modulation Level	WIDE 440.00MHz	800±200Hz/DEV	800±200Hz/DEV	88.5Hz 3KHz LPF ON
DCS Modulation Level	WIDE 440.00MHz	800±200Hz/DEV	800±200Hz/DEV	Code 255 3KHz LPF ON
	NARROW 440.00MHz	450±100Hz/DEV	450±100Hz/DEV	Code 255 3KHz LPF ON
1750Hz Modulation Level	WIDE 440.00MHz	3.0±0.5 KHz/DEV	3.0±0.5 KHz/DEV	
DTMF Modulation Level	WIDE 440.00MHz	3.0±0.5 KHz/DEV	3.0±0.5 KHz/DEV	Press the V/M key during TX
Modulation Distortion	440.00MHz	Less than 3%	Less than 4%	
TX S/N	WIDE	More than 40dB	More than 38dB	0.3~3KHz BPF ON
	NARROW	More than 34dB	More than 32dB	

PC BOARD VIEW

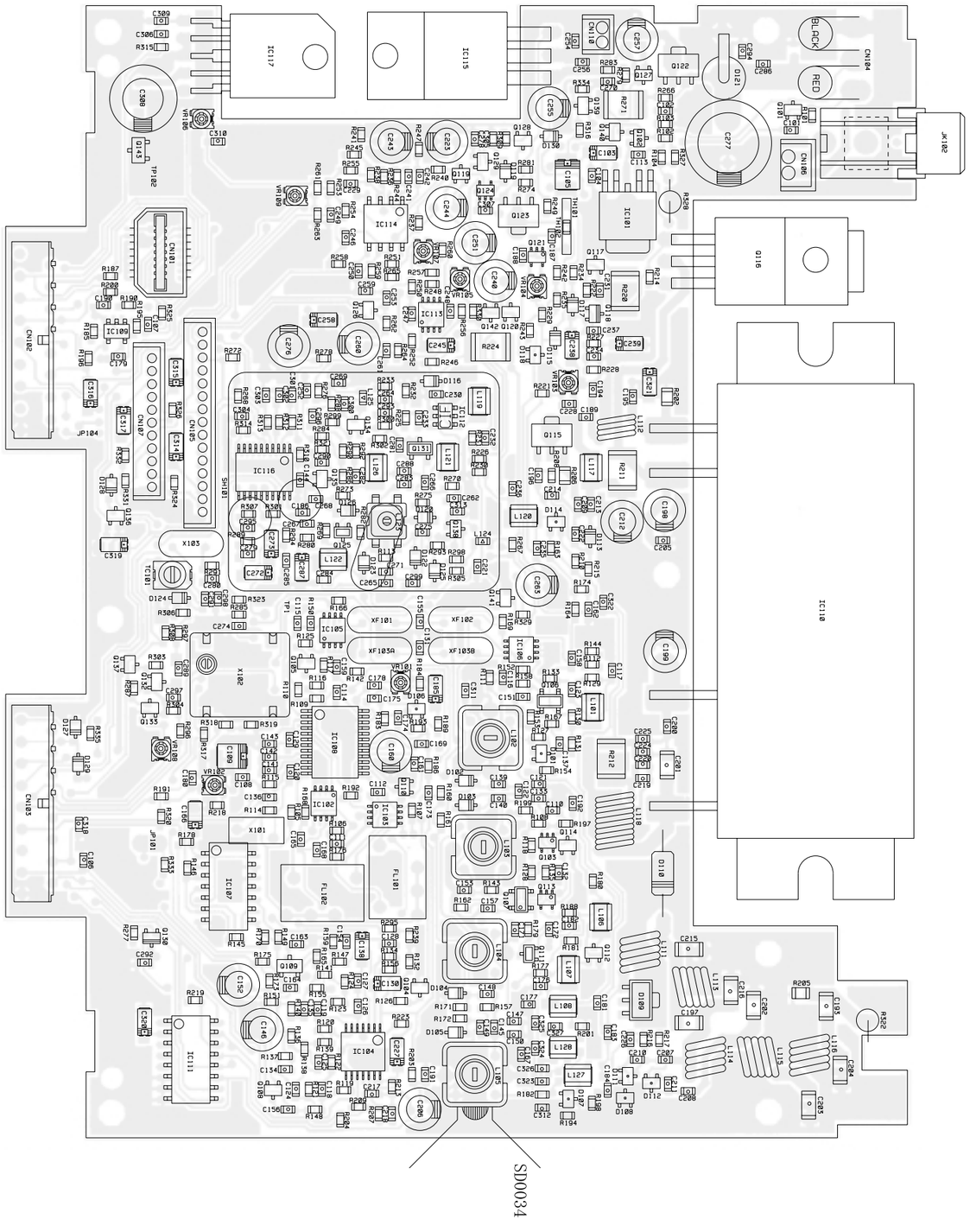
1) CPU Unit Side A DR-135 (UP 0400B) DR-235 (UP 0414) DR-435 (UP 0415)



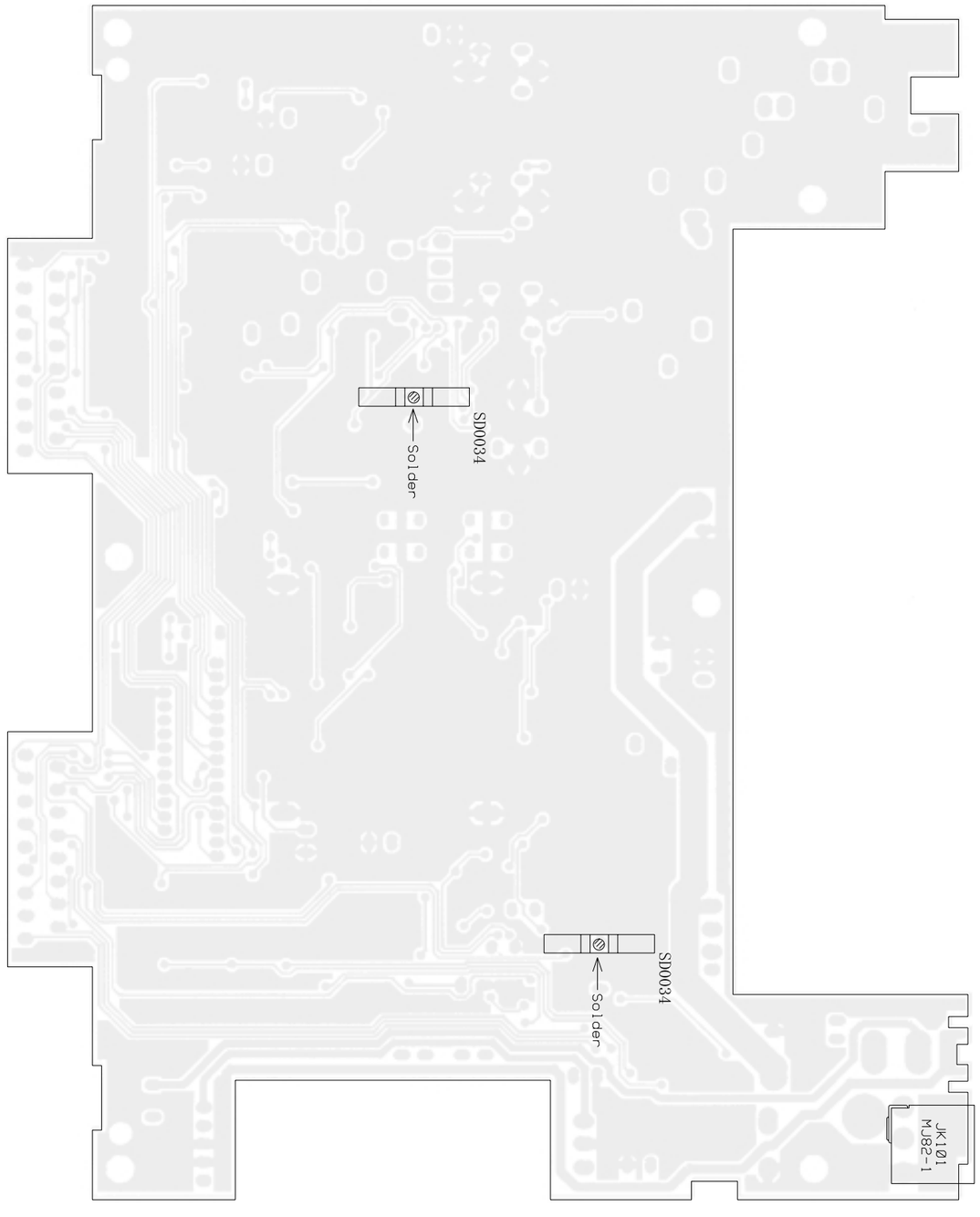
2) CPU Unit Side B DR-135 (UP 0400B) DR-235 (UP 0414) DR-435 (UP 0415)

	R2	R13	R15	R16	JP3
DR135 T, TG	NC	NC	NC	0	JUMPER
DR135 E, EG	NC	0	NC	NC	JUMPER
DR135 TA, TAG	NC	NC	NC	0	NC
DR235 T, TG	0	NC	NC	0	JUMPER
DR435 T, TG	NC	NC	0	0	JUMPER
DR435 E,EG	NC	0	0	NC	JUMPER

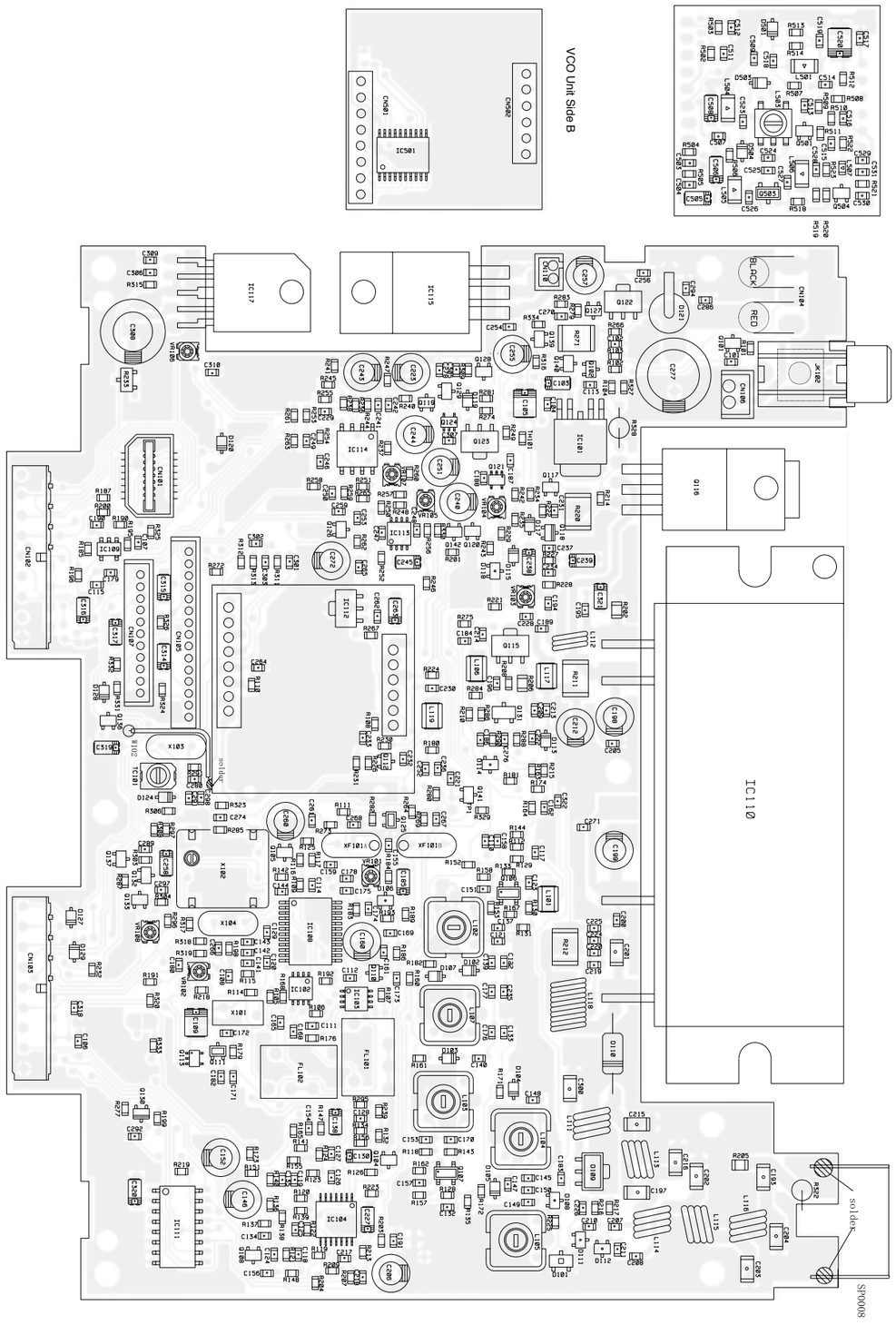
3) MAIN Unit Side A DR-135 (UP 0400B)



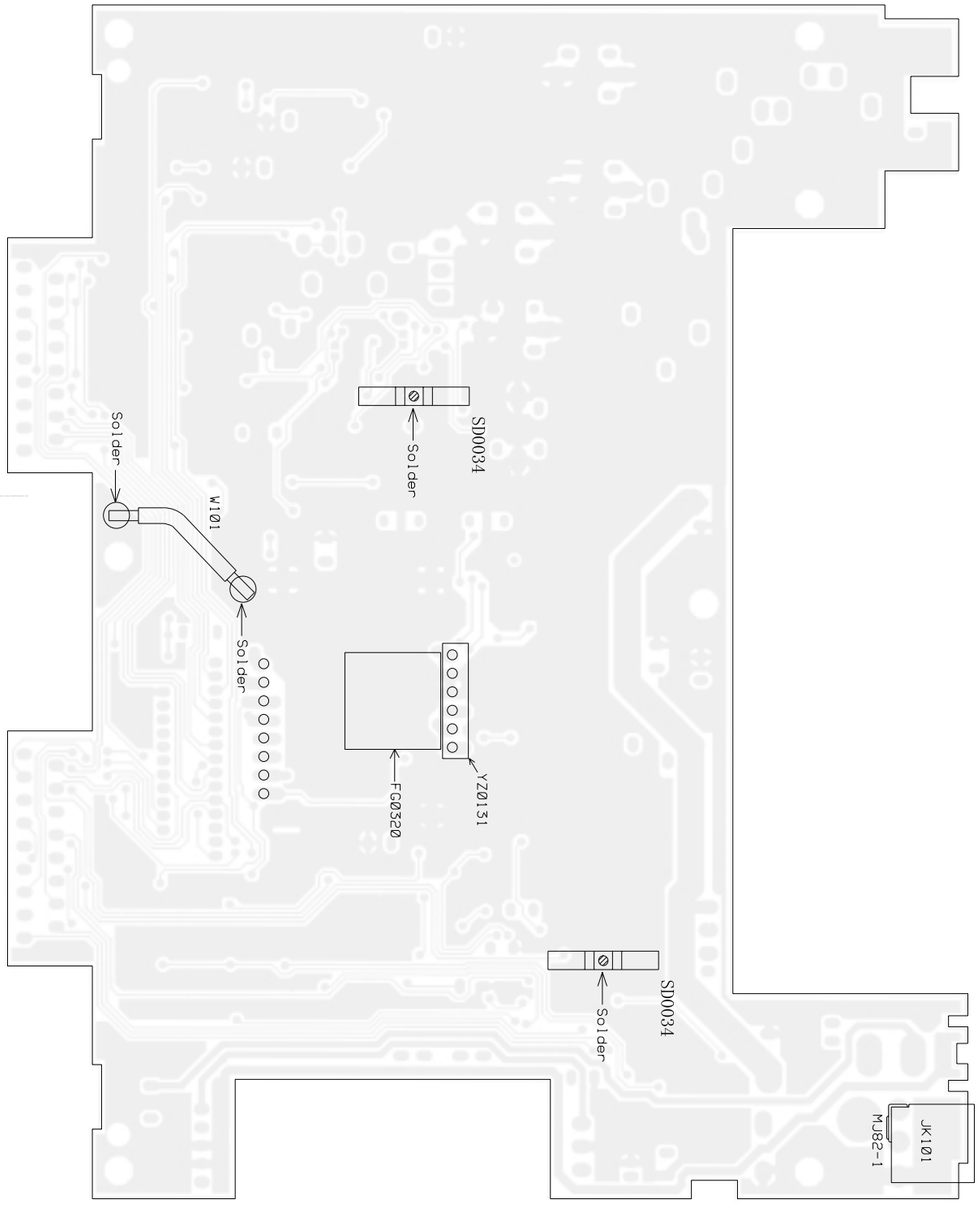
4) MAIN Unit Side B DR-135 (UP 0400B)



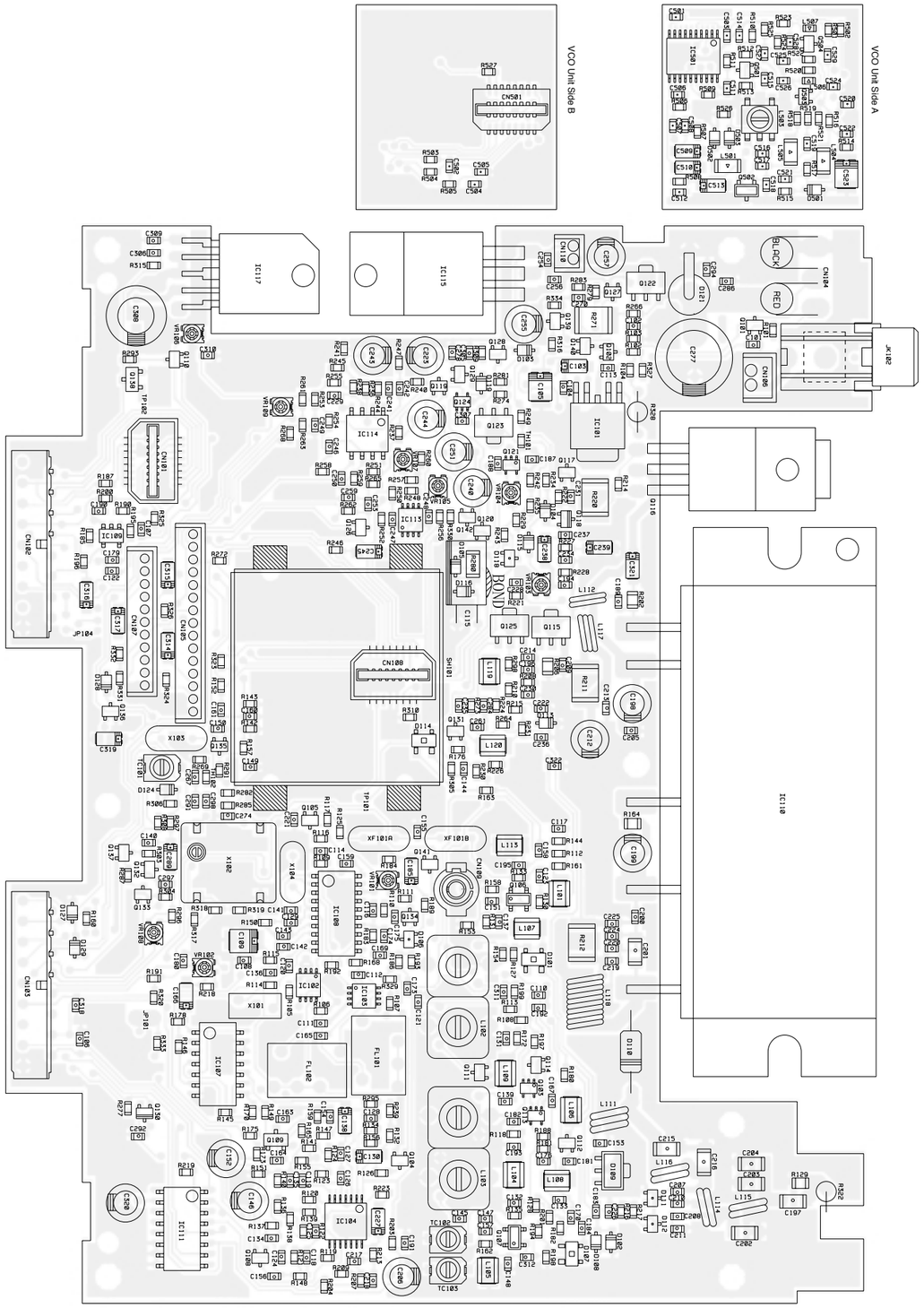
5) MAIN Unit Side A DR-235 (UP 0414)



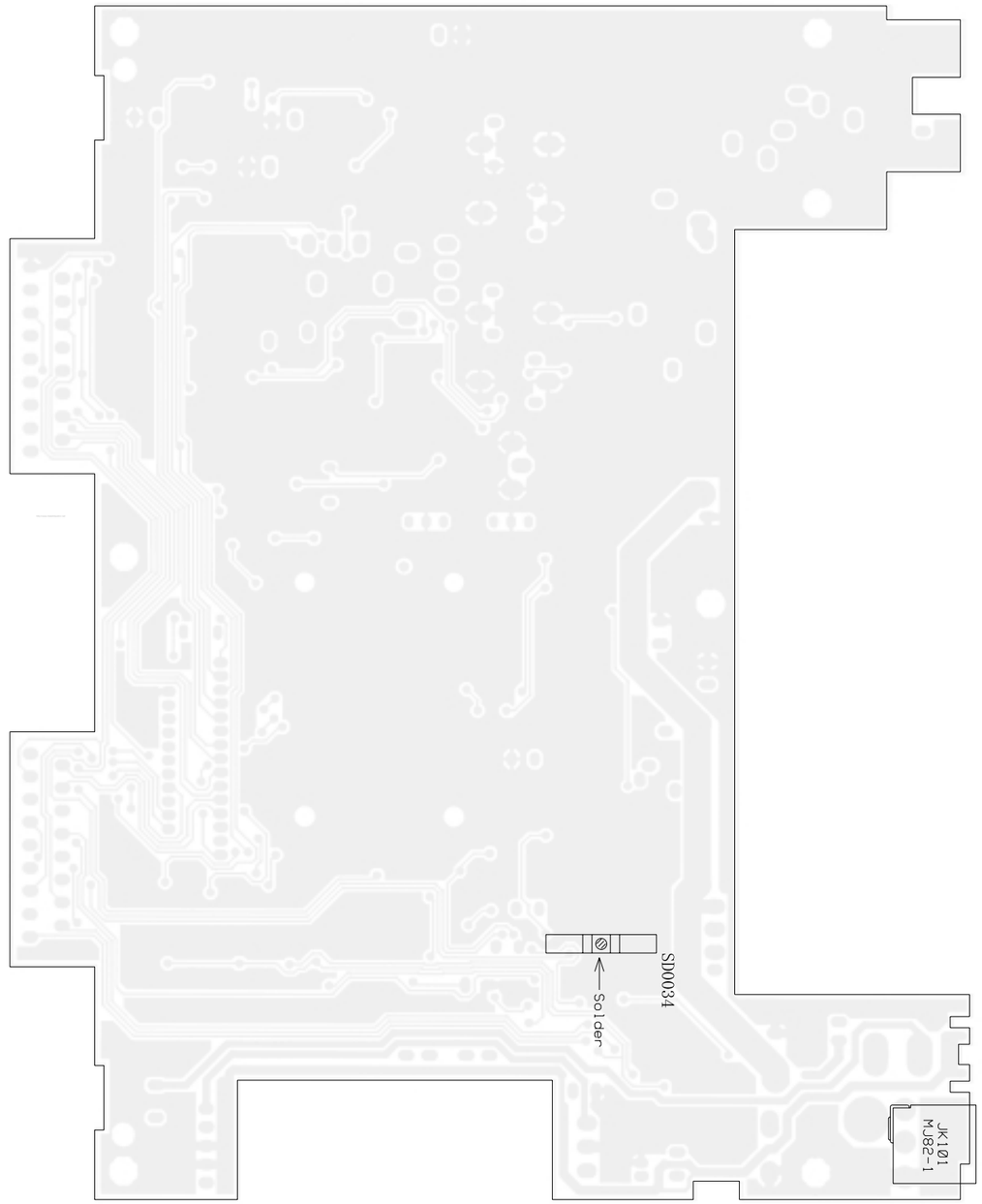
6) MAIN Unit Side B DR-235 (UP 0414)



7) MAIN Unit Side A DR-435 (UP 0415)

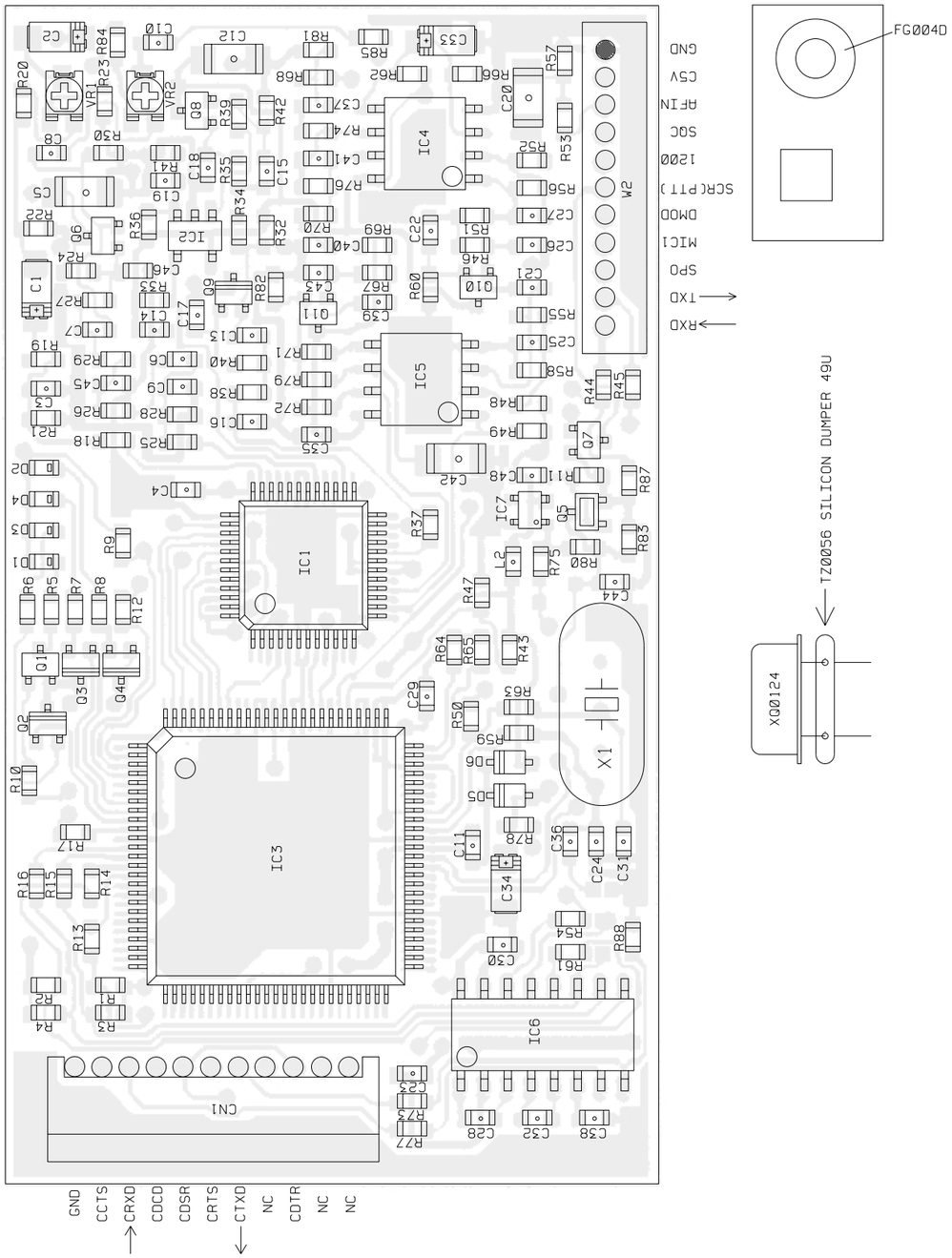


8) MAIN Unit Side B DR-435 (UP 0415)

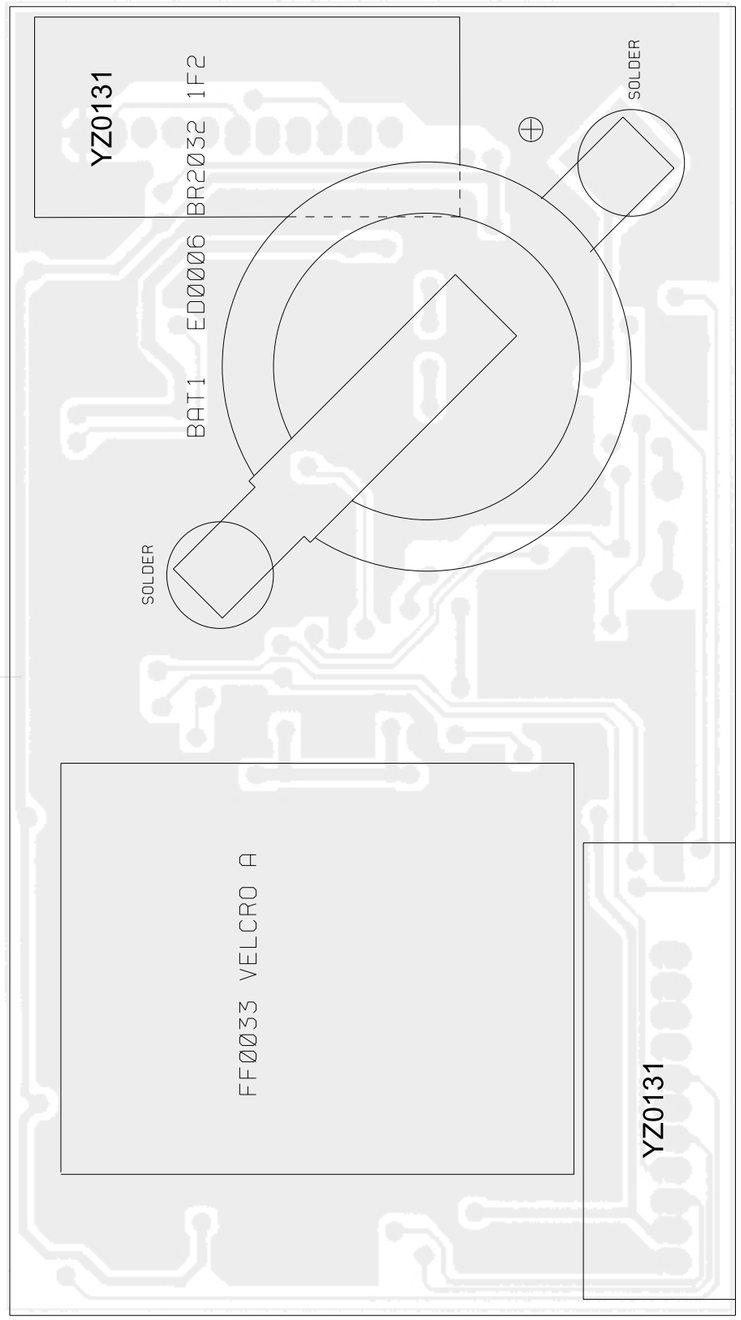


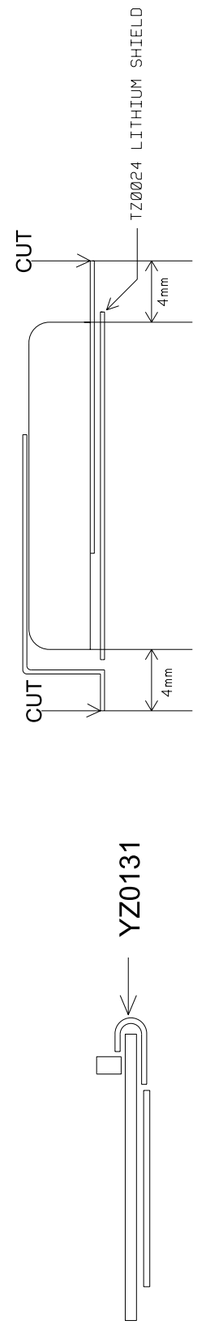
9) TNC Unit Side A (UP 0402) (DR-135TP only)

OPTION unit (EJ41U)



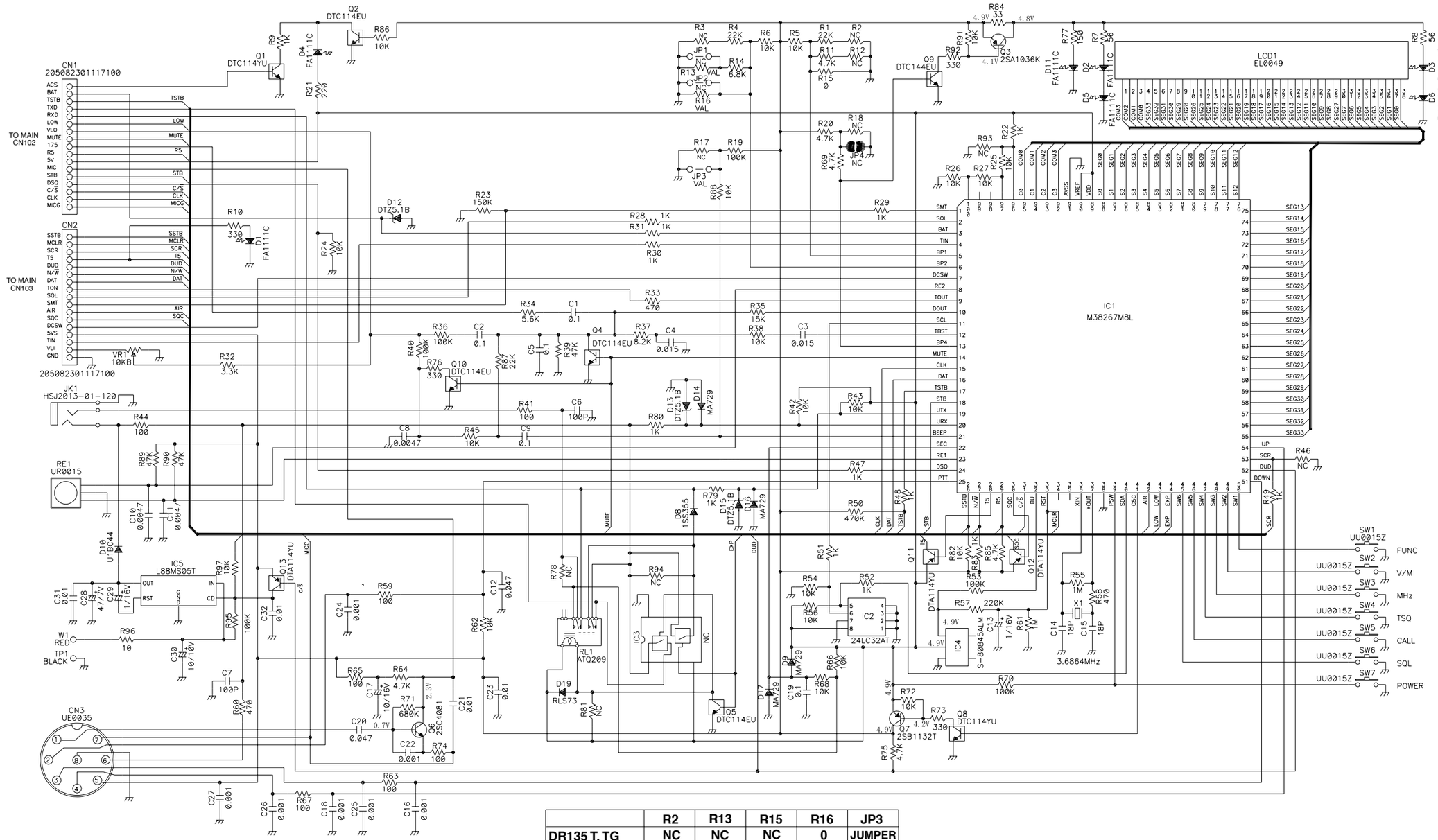
10) TNC Unit Side B (UP 0402) (DR-135TP only)





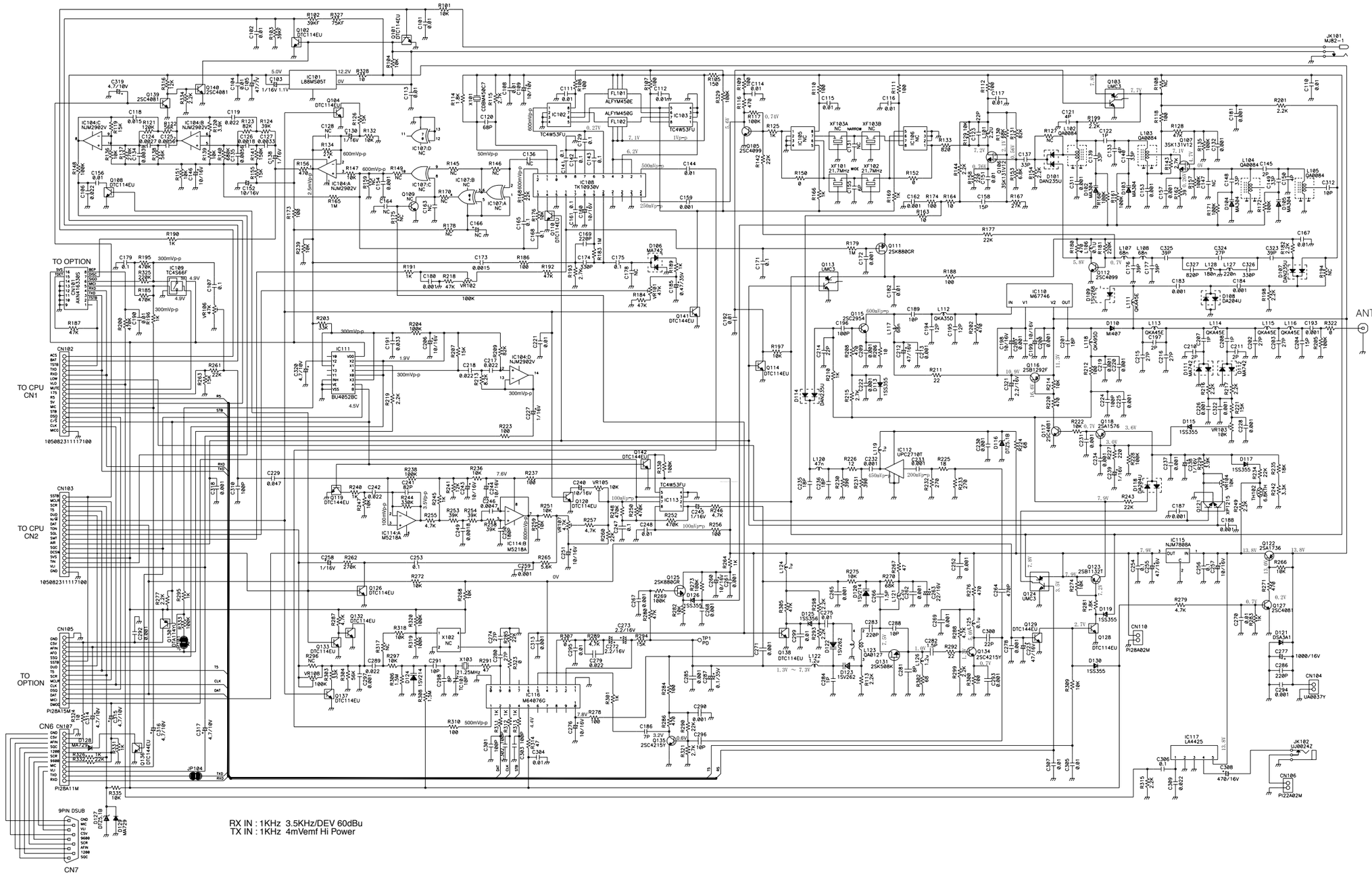
SCHMATIC DIAGRAM

1) CPU Unit DR-135 / DR-235 / DR-435

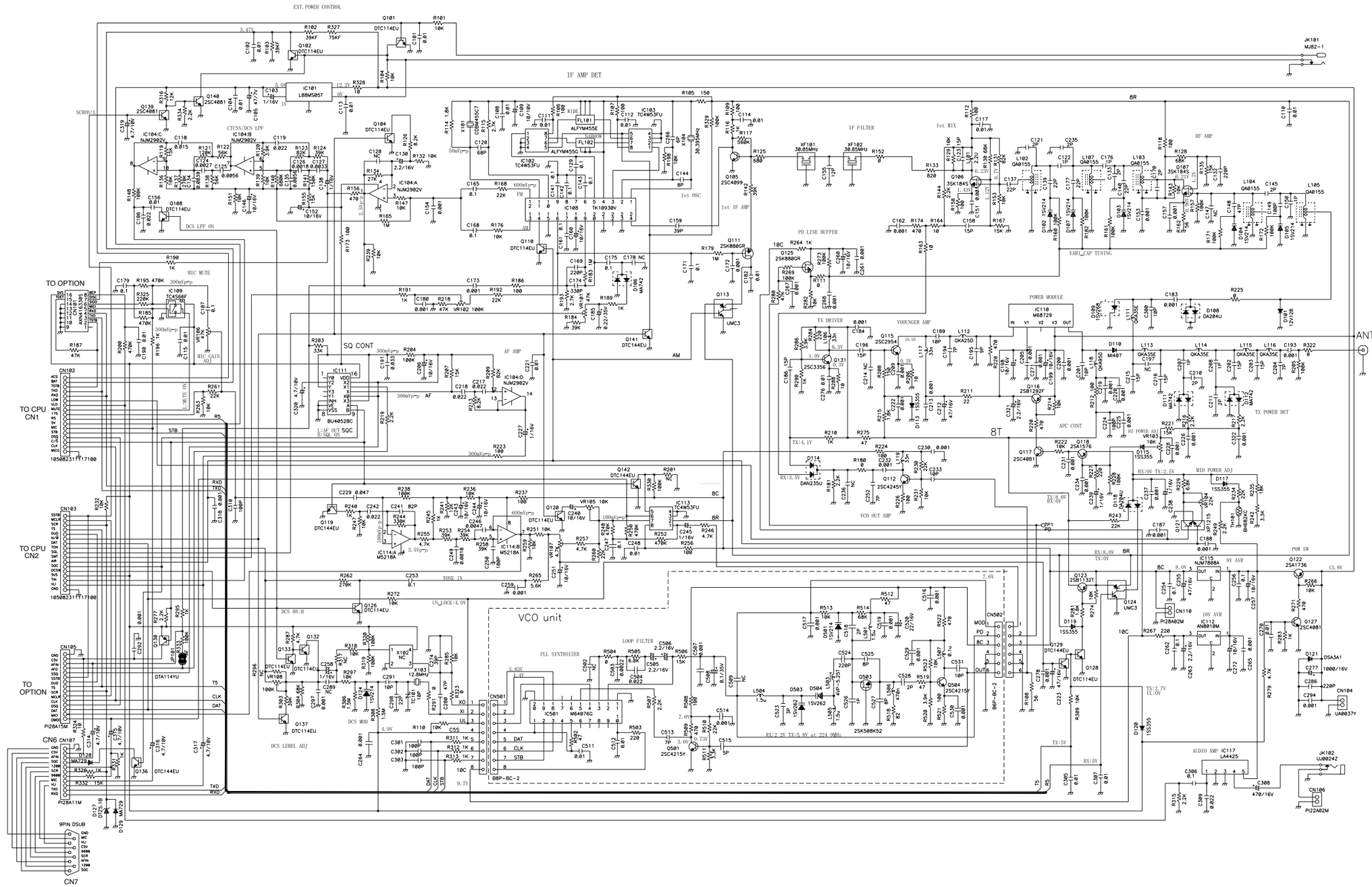


	R2	R13	R15	R16	JP3
DR135 T, TG	NC	NC	NC	0	JUMPER
DR135 E, EG	NC	0	NC	NC	JUMPER
DR135 TA, TAG	NC	NC	NC	0	NC
DR235 T, TG	0	NC	NC	0	JUMPER
DR435 T, TG	NC	NC	0	0	JUMPER
DR435 E, EG	NC	0	0	NC	JUMPER

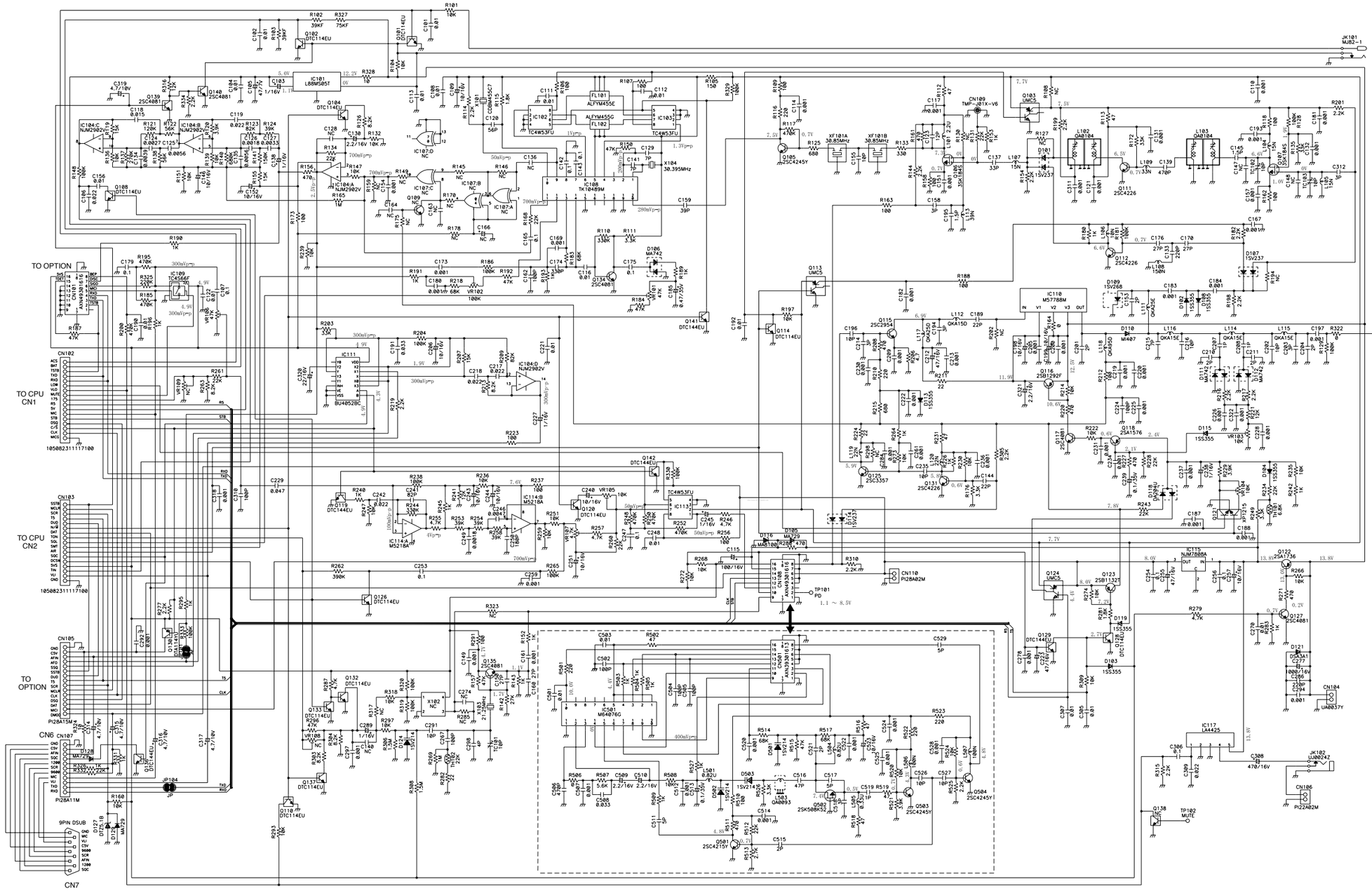
2) MAIN Unit DR-135



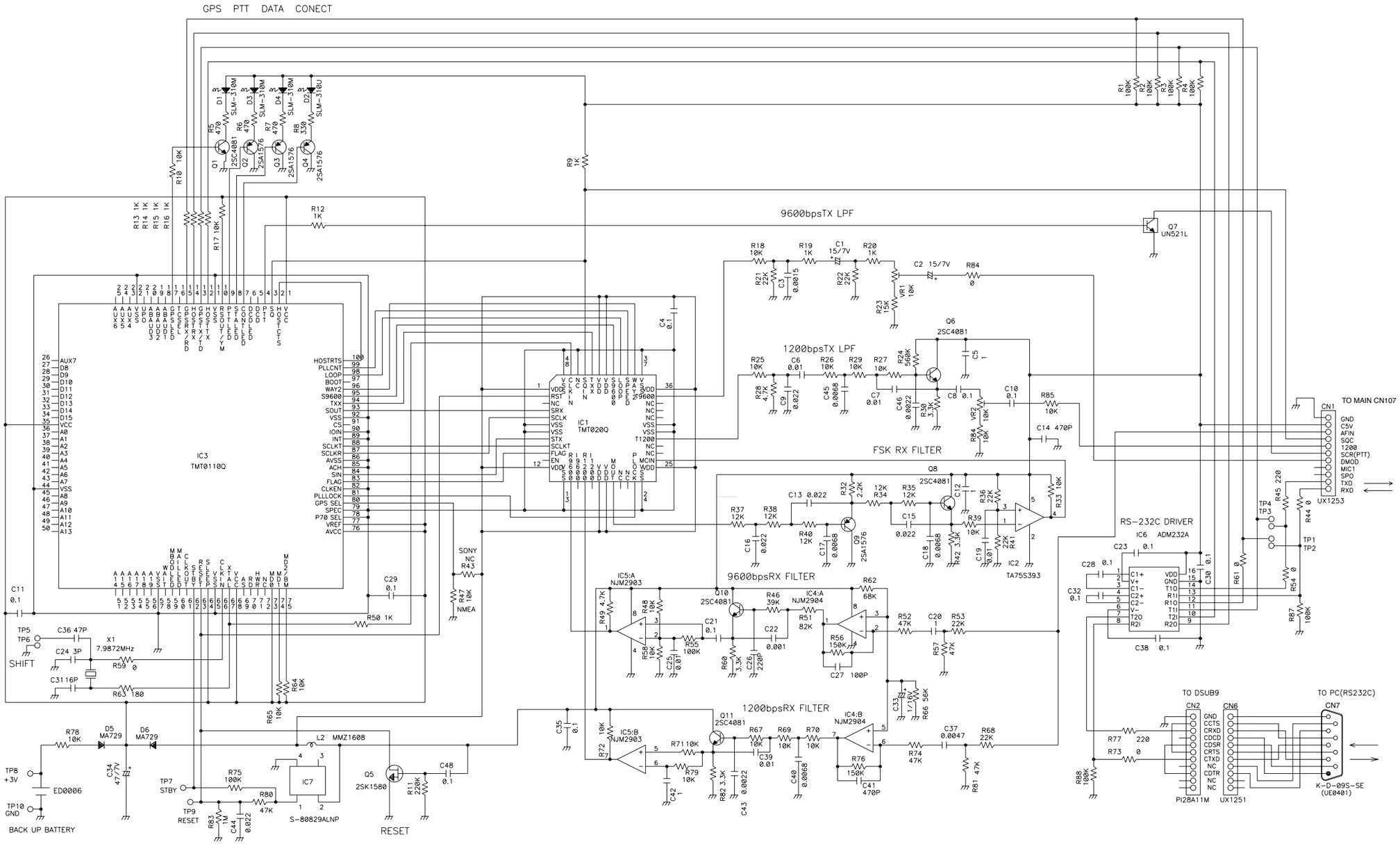
3) MAIN Unit DR-235



4) MAIN Unit DR-435

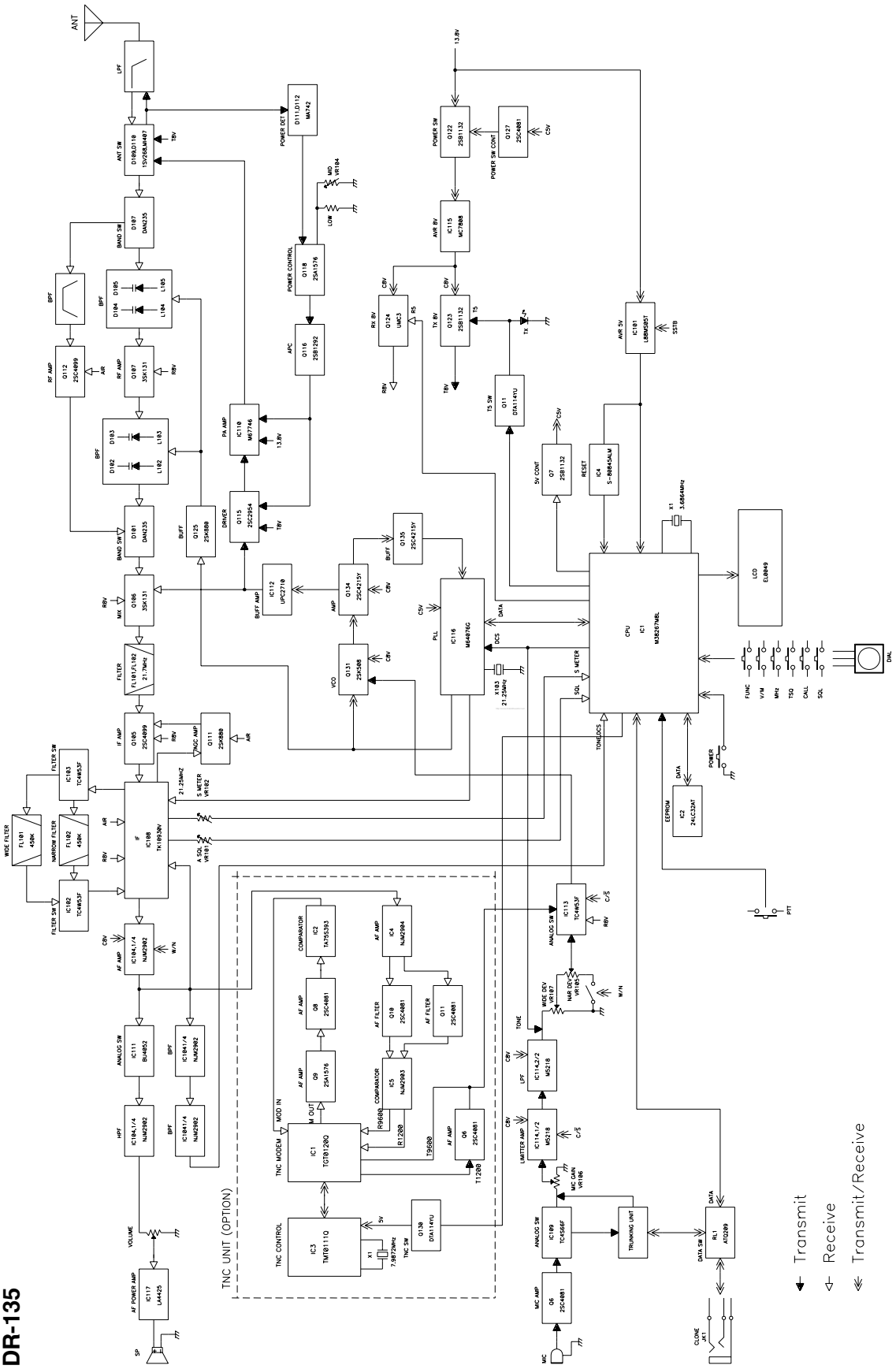


5) TNC Unit (DR-135TP only) or option

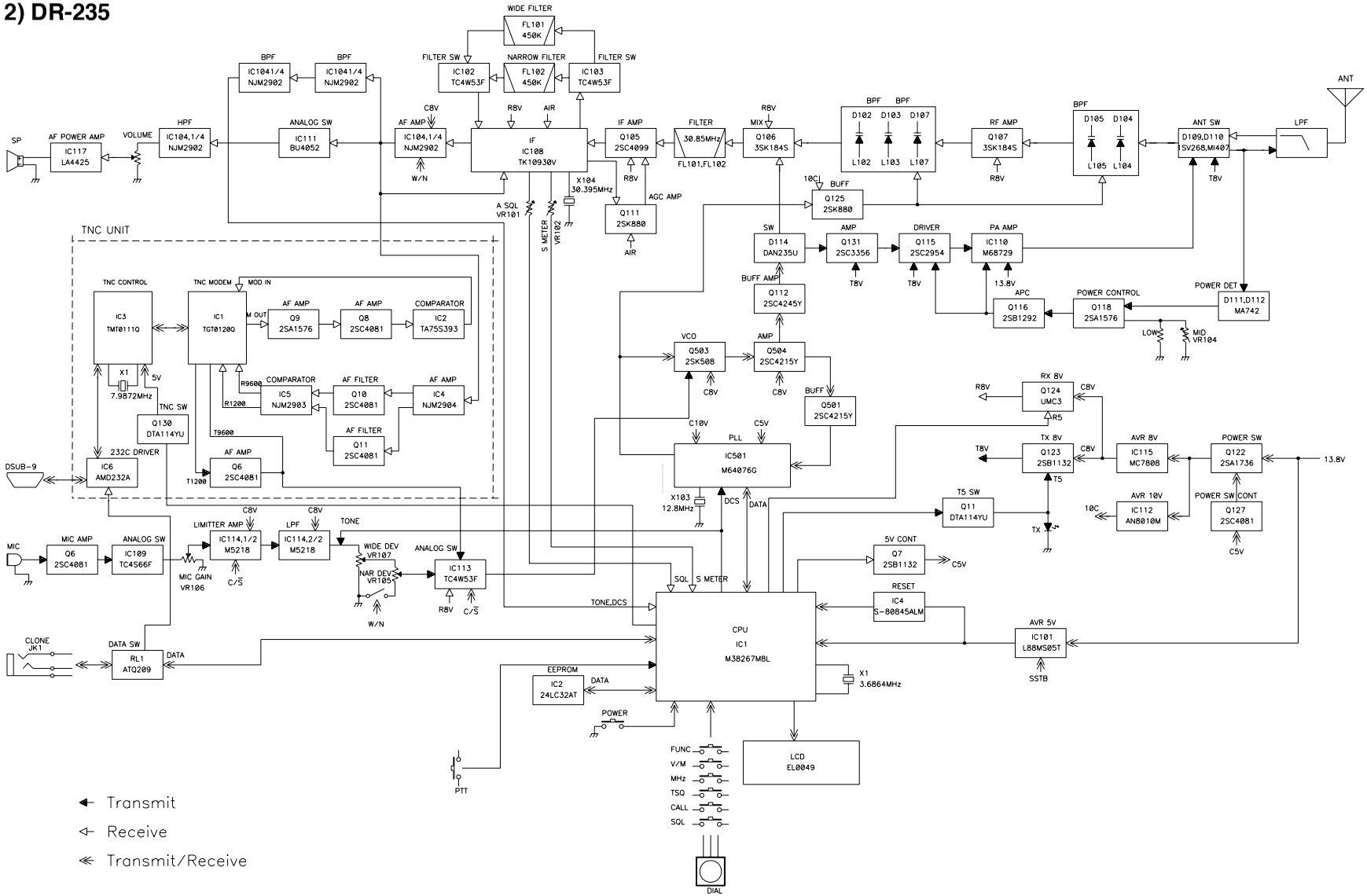


BLOCK DIAGRAM

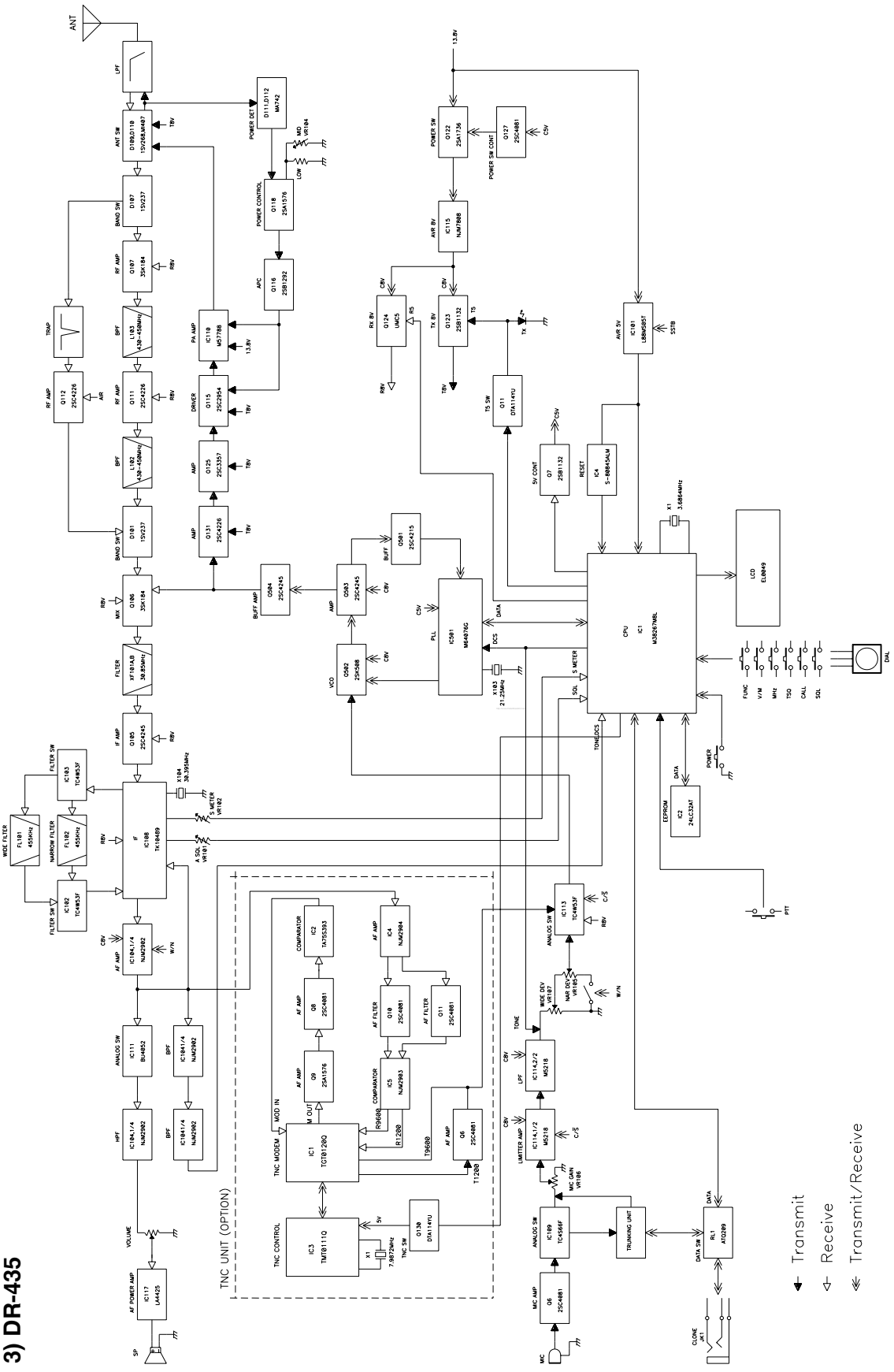
1) DR-135



2) DR-235


WIDE FILTER
FL101 450K
NARROW FILTER
FL102 450K
FILTER SW
IC102 TC4W53F
IC103 TC4W53F
BPF
IC1041/4 NJM2902
ANALOG SW
IC111 BU4052
HPF
IC104,1/4 NJM2902
VOLUME
AF POWER AMP
IC117 LA4425
SP
AF AMP
IC104,1/4 NJM2902
W/N
C8V
R8V
AIR
IF
IC108 TK10930V
X104 30.395MHz
A SQL VR101
S METER VR102
IF AMP
Q105 2SC4099
AGC AMP
Q111 2SK880
FILTER
30.85MHz
FL101,FL102
MIX
Q106 3SK184S
BPF
D102 D103 D107
L102 L103 L107
RF AMP
Q107 3SK184S
D105 D104
L105 L104
ANT SW
D109,D110 1SV268,MI407
T8V
LPF
ANT
10C
BUFF
Q125 2SK880
SW
D114 DAN235U
AMP
Q131 2SC3356
DRIVER
Q115 2SC2954
PA AMP
IC110 M68729
13.8V
APC
Q116 2SB1292
POWER CONTROL
Q118 2SA1576
POWER DET
D111,D112 MA742
LOW
MID VR104
BUFF AMP
Q112 2SC4245Y
VCO
Q503 2SK508
AMP
Q504 2SC4215Y
BUFF
Q501 2SC4215Y
RX 8V
Q124 UMC3
R5
TX 8V
Q123 2SB1132
T5
TX
T5 SW
Q11 DTA114YU
AVR 8V
IC115 MC7808
AVR 10V
IC112 AN8010M
POWER SW
Q122 2SA1736
POWER SW CONT
Q127 2SC4081
C5V
PLL
IC501 M64076G
X103 12.8MHz
DCS
DATA
TNC UNIT
TNC CONTROL
IC3 TMT0111Q
TNC MODEM
MOD IN
IC1 TGT0120Q
M OUT
AF AMP
Q9 2SA1576
Q8 2SC4081
COMPARATOR
IC2 TA75S393
X1 7.9872MHz
5V
TNC SW
Q130 DTA114YU
R9600
R1200
T9600
T1200
COMPARATOR
IC5 NJM2903
AF FILTER
Q10 2SC4081
Q11 2SC4081
AF AMP
IC4 NJM2904
Q6 2SC4081
232C DRIVER
IC6 AMD232A
DSUB-9
MIC
MIC AMP
Q6 2SC4081
ANALOG SW
IC109 TC4S66F
MIC GAIN VR106
C/S
LIMITTER AMP
IC114,1/2 M5218
LPF
IC114,2/2 M5218
TONE
WIDE DEV VR107
NAR DEV VR105
W/N
ANALOG SW
IC113 TC4W53F
R8V
C/S
TONE,DCS
SQL
S METER
5V CONT
Q7 2SB1132
C5V
RESET
IC4 S-80845ALM
AVR 5V
IC101 L88MS05T
SSTB
CPU
IC1
M38267M8L
X1 3.6864MHz
CLONE JK1
DATA SW
RL1 ATQ209
DATA
EEPROM
IC2 24LC32AT
DATA
POWER
PTT
FUNC
V/M
MHz
TSQ
CALL
SQL
DIAL
LCD
EL0049
Transmit
Receive
Transmit/Receive

3) DR-435


ANT
LPF
ANT SW
BAND SW
RF AMP
BPF
TRAP
MIX
FILTER
IF AMP
IF
IC108
TK10489
X104
38.950MHz
S METER
VR102
SQL
VR101
WIDE FILTER
NARROW FILTER
FILTER SW
AF AMP
ANALOG SW
HPF
BPF
VOLUME
AF POWER AMP
IC117
LA4425
SP
TNC UNIT (OPTION)
TNC MODEM
IC1
TC8012BO
TNC CONTROL
IC3
TMP87111O
X1
7.6873MHz
TNC SW
Q130
DTA114YU
MOD IN
M OUT
COMPARATOR
IC2
TA75S393
IC4
NJM2904
IC5
NJM2903
R9600
R1200
T9600
T1200
AF FILTER
Q10
2SC4881
Q11
2SC4881
Q6
2SC4881
Q8
2SC4881
Q9
2SA1576
IC1841/4
NJM2902
IC111
BU4052
IC113
TC4W53F
IC114-2/2
M5218
LIMITTER AMP
LPF
TONE
WIDE DEV
VR107
NAR DEV
VR106
W/N
C/S
MIC GAIN
VR108
MIC AMP
Q5
2SC4881
MIC
CLONE
JACK
ANALOG SW
IC109
TC4S66F
TRUNKING UNIT
DATA SW
RL1
ATQ209
DATA
PTT
POWER
EEPROM
IC2
24LC32AT
CPU
IC1
M38267MBL
X1
3.68864MHz
RESET
IC4
S-80845ALM
AVR SW
IC101
L88MS05T
SSTB
5V CONT
Q7
2SB1132
TS SW
Q11
DTA114YU
TX
RX 8V
Q124
UMC5
TX 8V
Q123
2SB1132
AVR 8V
IC115
NJM7808
POWER SW
Q122
2SA1736
POWER SW CONT
Q127
2SC4881
13.8V
PLL
IC501
MB40760
VCO
Q502
2SK508
BUFF
Q501
2SC4215
AMP
Q503
2SC4245
BUFF AMP
Q504
2SC4245
Q131
2SC4226
AMP
Q125
2SC3357
DRIVER
Q115
2SC2954
PA AMP
IC110
M57788
APC
Q116
2SB1202
POWER CONTROL
Q118
2SA1576
POWER DET
D111,D112
MA742
MID
VR104
LOW
Q112
2SC4226
Q111
2SC4226
L102
438~458MHz
L103
438~458MHz
D101
1SV237
D107
1SV237
D109,D110
1SV268,MA4P7
Q107
3SK184
Q105
2SC4245
Q106
3SK184
X103
21.25MHz
LCD
EL0849
FUNC
V/M
MHz
TSQ
CALL
SQL
DIAL
TONE/DCS
S METER
DATA
Transmit
Receive
Transmit/Receive

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