

VECTOR

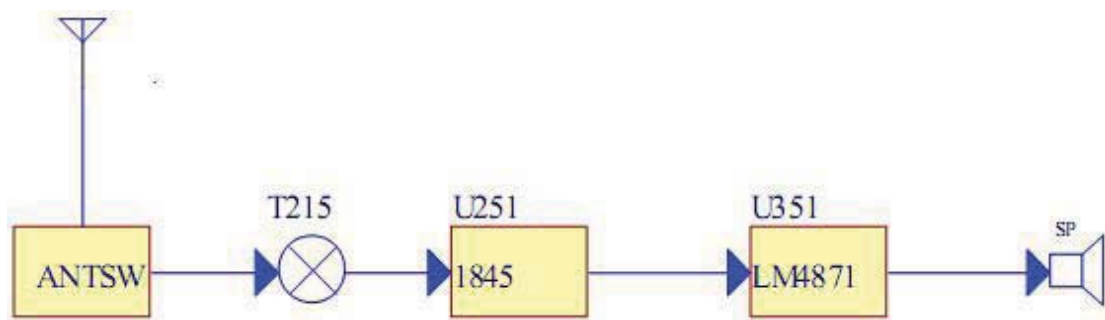


SERVICE MANUAL VECTOR VT- 43 R-2

CIRCUIT DESCRIPTION

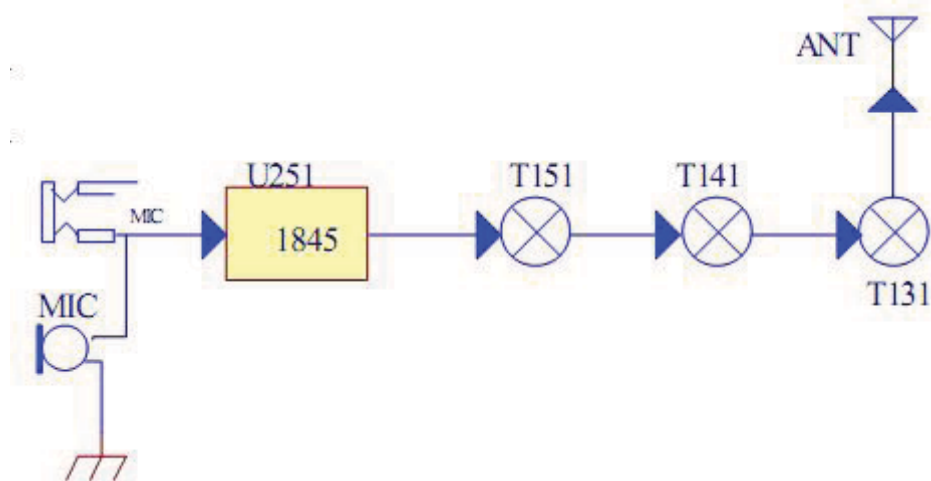
一. RECEIVER

The signal from the antenna is passed through a transmission/reception selector circuit and is amplified by T215. The signal after amplified enter to 1845 for processing then output the audio, the audio signal is amplified by LM4871 and output by the speaker at last.



二. TRANSMITTER

The signal from the microphone passes through 1845 ,after modulation in the carrier modulation, the modulation signal with the carrier promotes by buffer T151,T141,and amplified by T131 then sends to the antenna terminals.



三. TRANSMISSION/RECEPTION SELECTOR CIRCUIT

The transmission output is passed through the transmission/reception selector circuit and low-pass filter to the antenna. The transmission/reception selector circuit, which consists of diodes D121, D122, D211 and D212 , is turned on during transmission and off during reception to switch the signal.

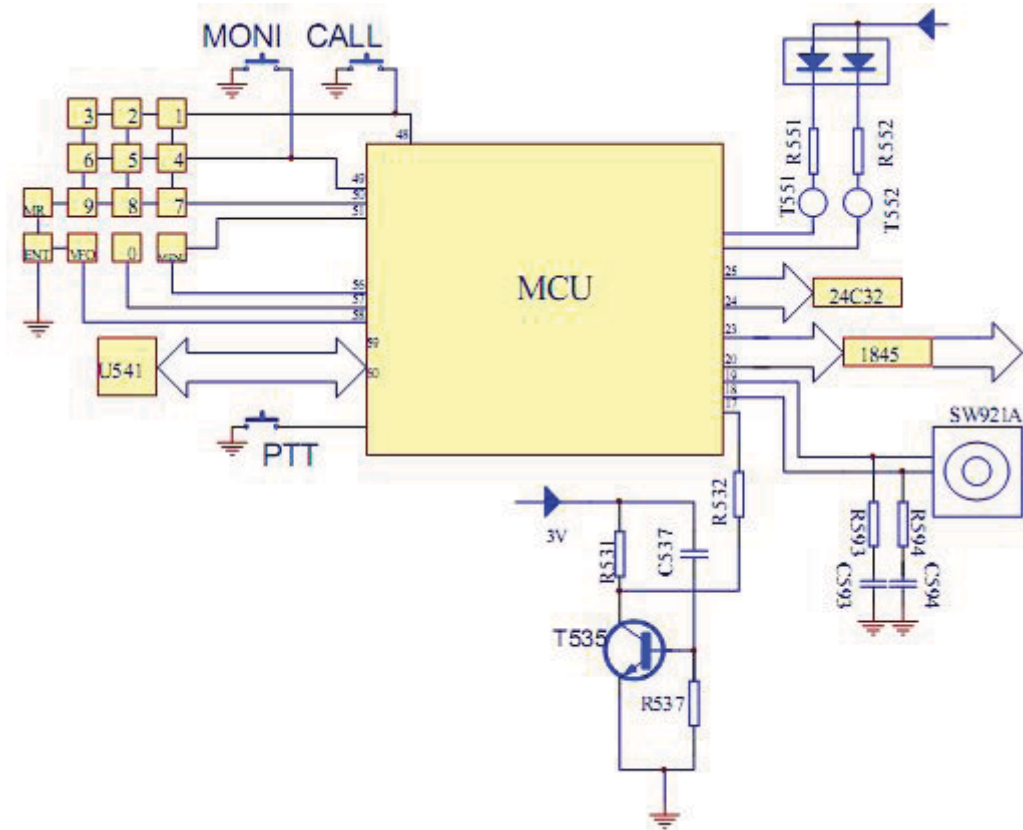
CONTROL CIRCUIT

The control circuit consists of a microprocessor (U511) and its peripheral circuits.

U511 mainly functions as follow:

- 1) Switching between transmission and reception by the PTT signal input.

2) Reading system, group, frequency, and program data from the memory circuit.



1. Reset and backup circuits

When the SB is turned on, a high-level pulse is output from the reset circuit consisting of T535, C537, and R537 to reset microprocessor. If the SB is turned off, the voltage detection MCU detects a 5 V drop, and outputs a low signal, it outputs data to U821(24C32) and enters backup mode.

2. Memory Circuit

Memory circuit consists of the MCU(U511) and an EEPROM (U821). An EEPROM has a capacity of 32k bits that contains the transceiver control program for the MCU and data such as transceiver channels and operating features.

3. Battery save circuit

The squelch is off during receive. The power circuit enters battery save mode if no key has been pressed for five seconds.

This circuit is controlled by microprocessor directly.

4. Low Battery Warning

The battery voltage is checked using by the microprocessor. The transceiver generates a warning tone when it falls below the warning voltage.

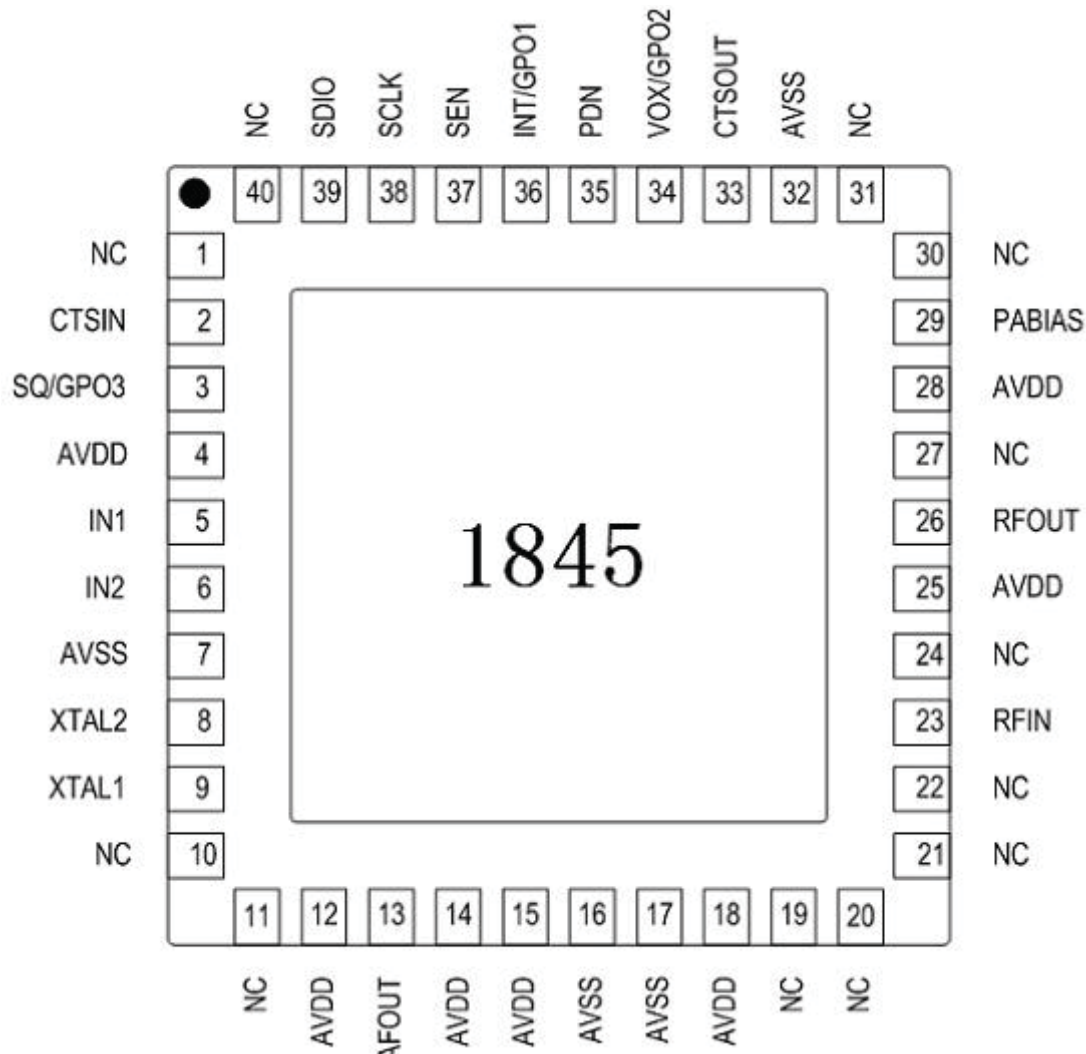
5. Keys and rotary encoder circuit

The signal from keys and rotary encoder input to microprocessor directly.

6.LCD control circuit

The LCD control circuit is turned on or off by directly flowing current to the microprocessor ports.

1845 DESCRIPTION



MAINLY SECTION DESCRIPTION

1.DSP consists of IF amplifier, FM modulation, RSSI calculator, AFC control circuit, audio/audio mixer filter, CTCSS/DCS filter and so on.

2.Synthesizer mainly functions:

- ① The synthesizer produces a local oscillator signal, used to switch the RF input to a continuous low medium frequency.
- ② Synthesizer provides the base clock to adjust the VCO frequency.

3.BASE CLOCK

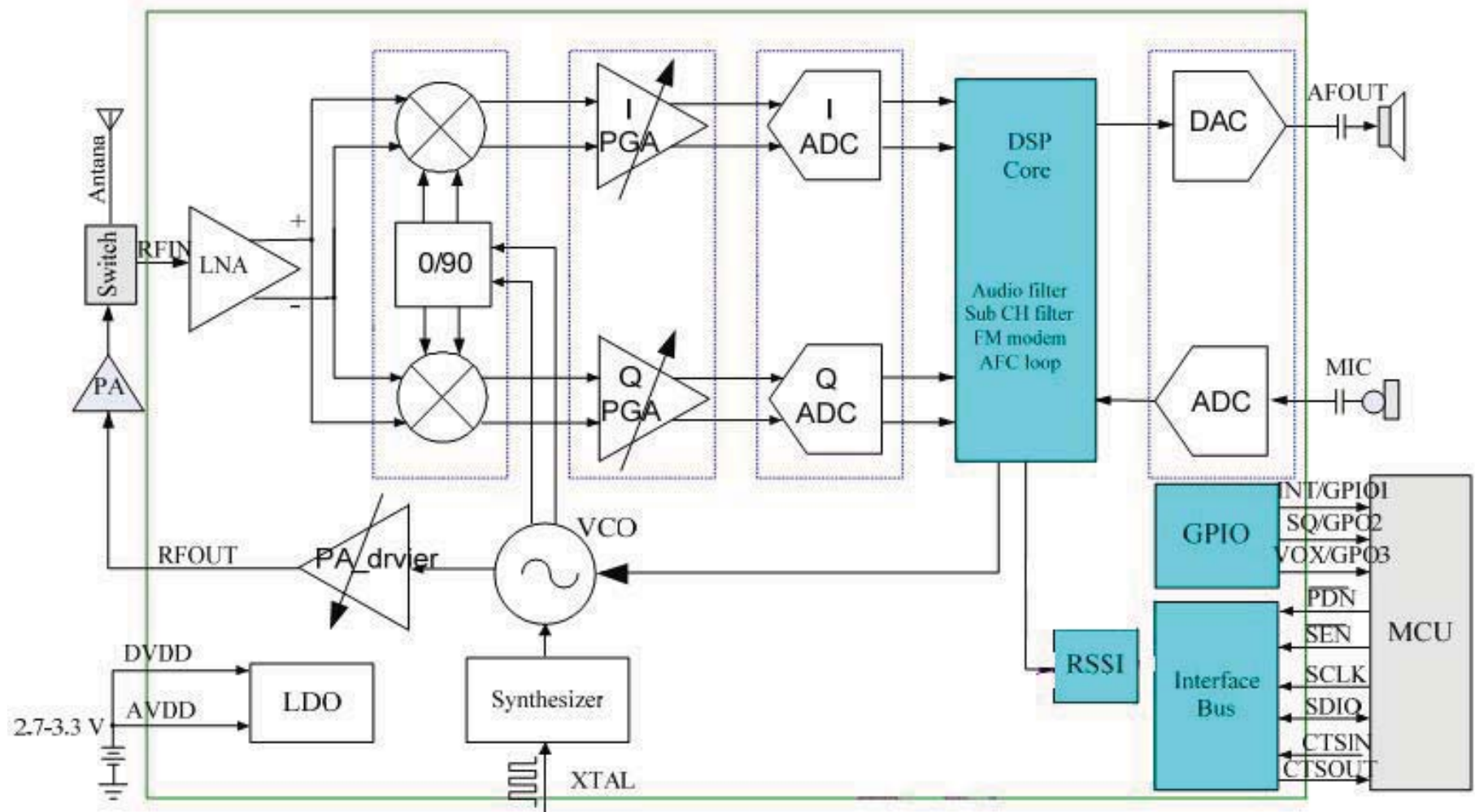
1848 ports more base clocks, for example, 12.8 MHz,13MHz and so on.

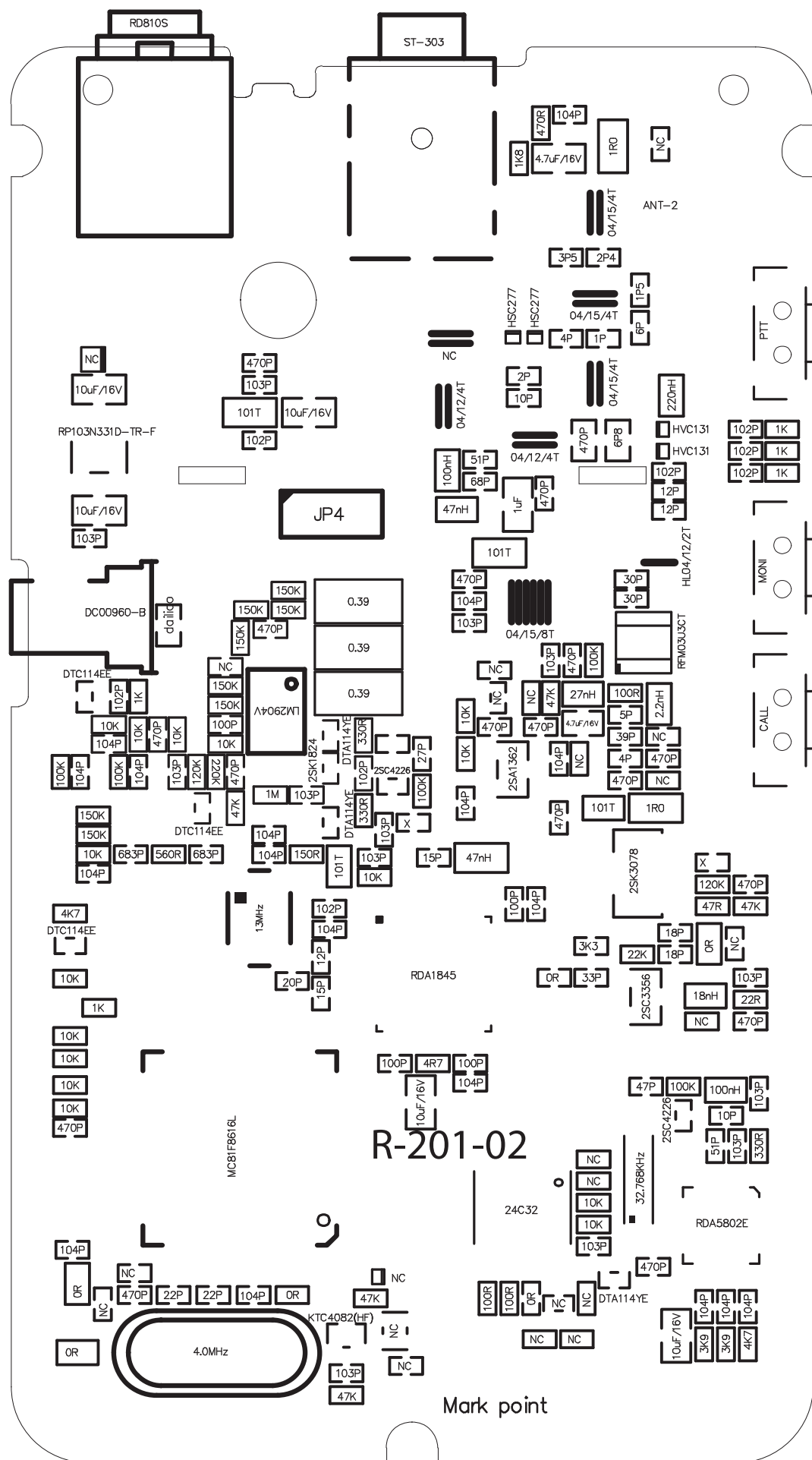
4.SERIAL CONTROL INTERFACE

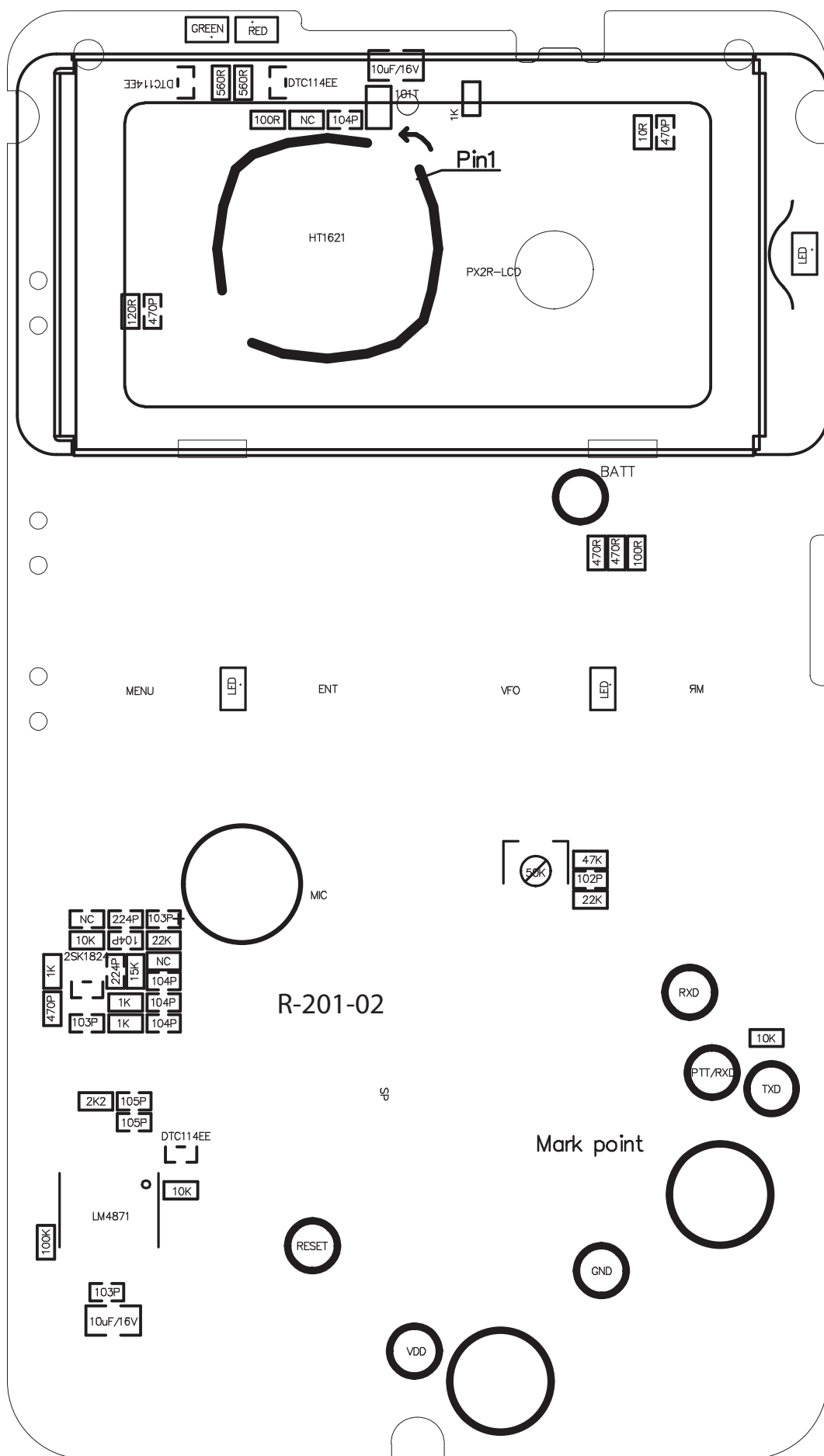
A three lines serial control interface is used to read the main IC and 1845 control record. Serial control is 24 characters in length, 18 bit numeric string and 6 bit address string.

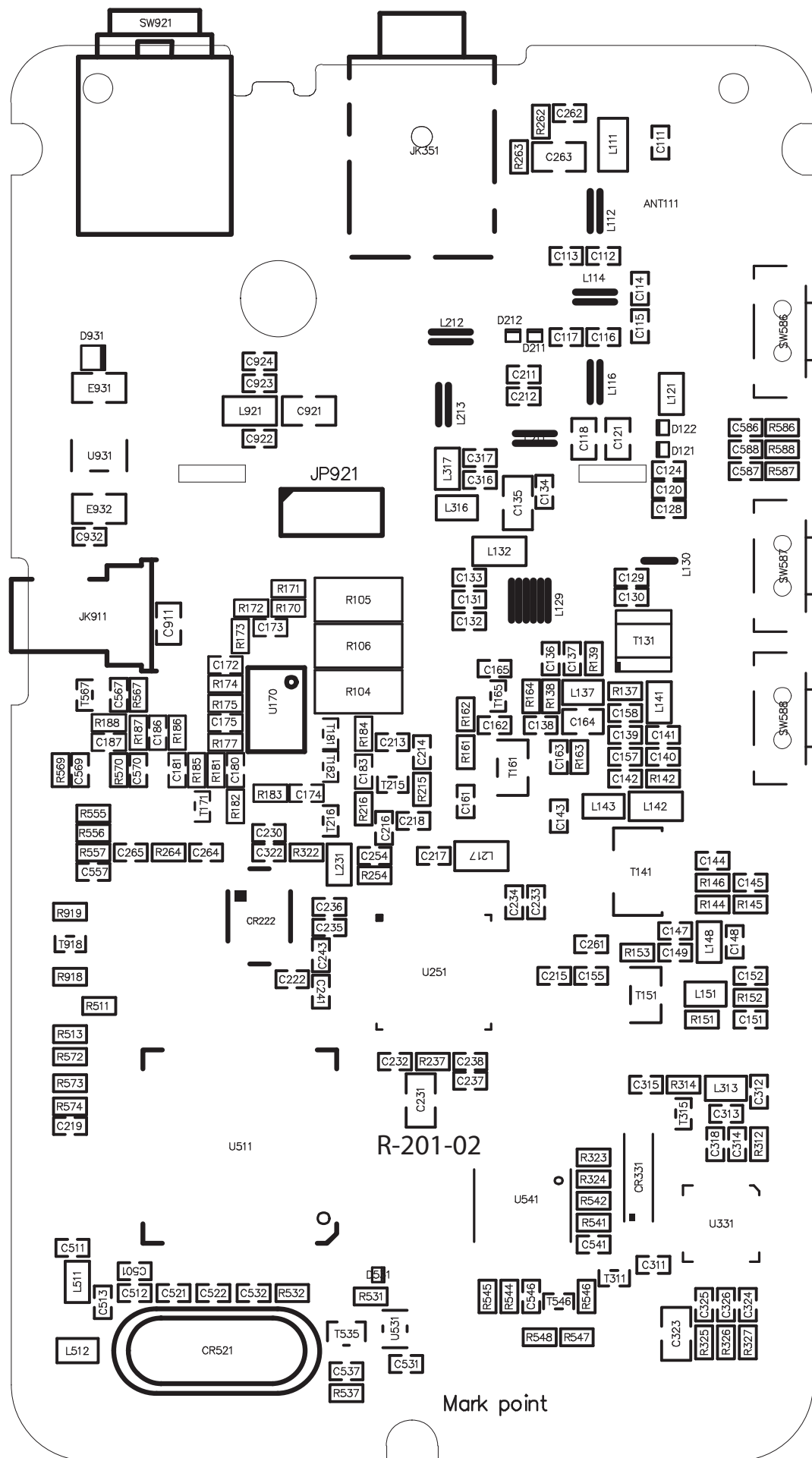
Programming software main functions

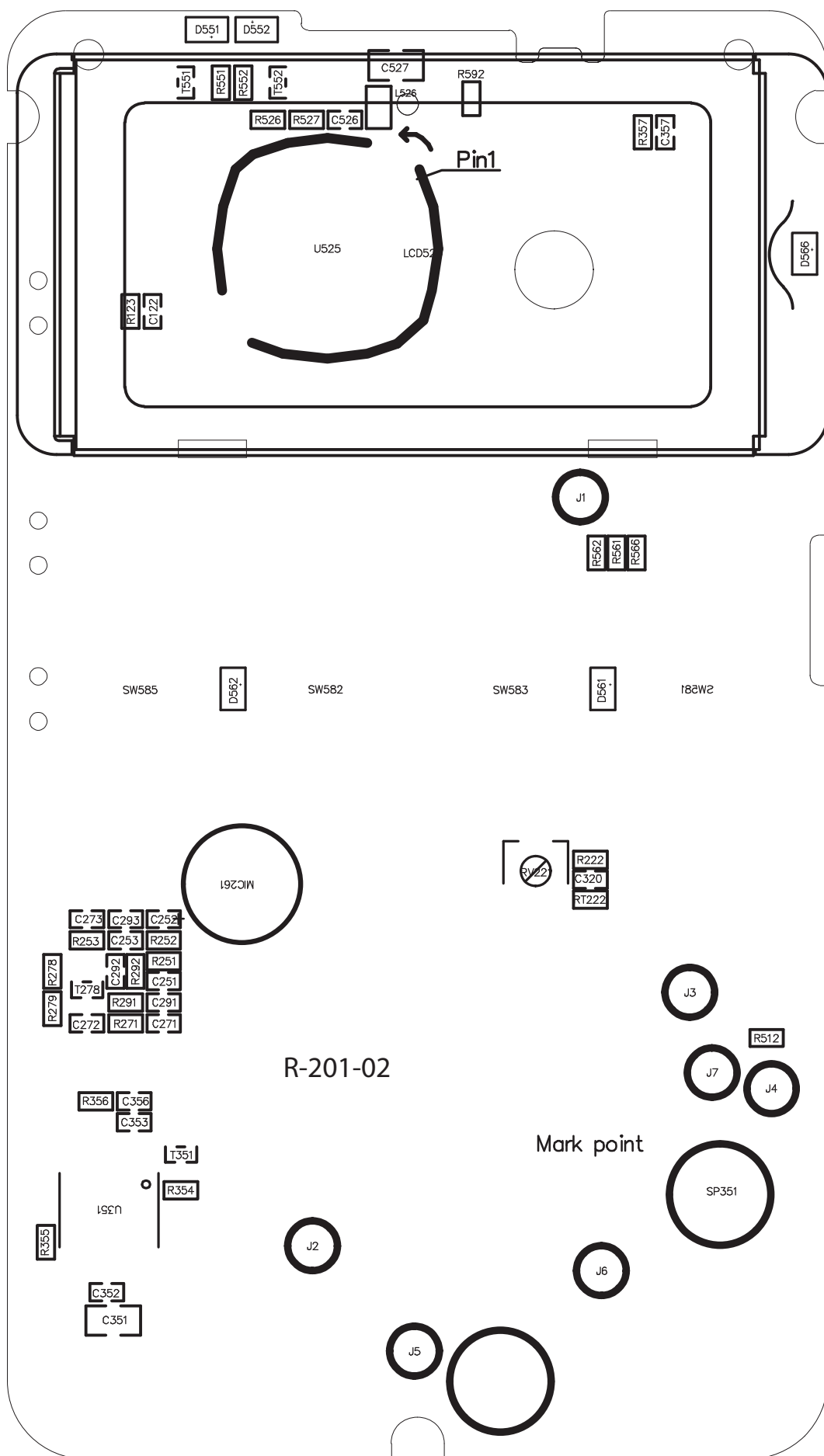
- 1) English-Chinese programming software
- 2) Receiving frequency and transmitting frequency
- 3) Receiving tone and Transmitting tone
- 4) Time-Out Timer
- 5) Squelch level(1-9) selectable
- 6) Power save
- 7) frequency step
- 8) Store channels
- 9) VOX sensitivity
- 10) SCAN TYPE: TO/CO/SE

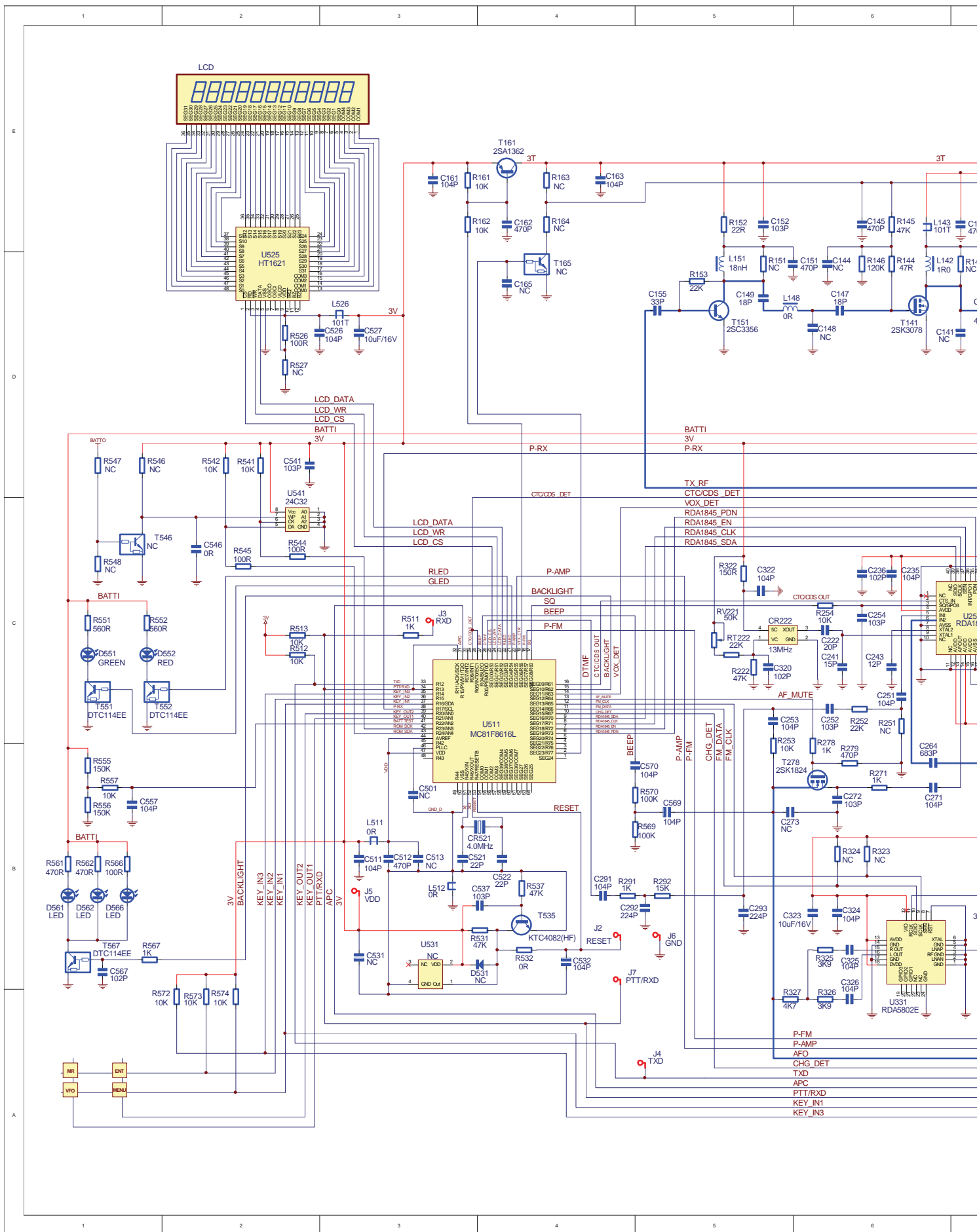


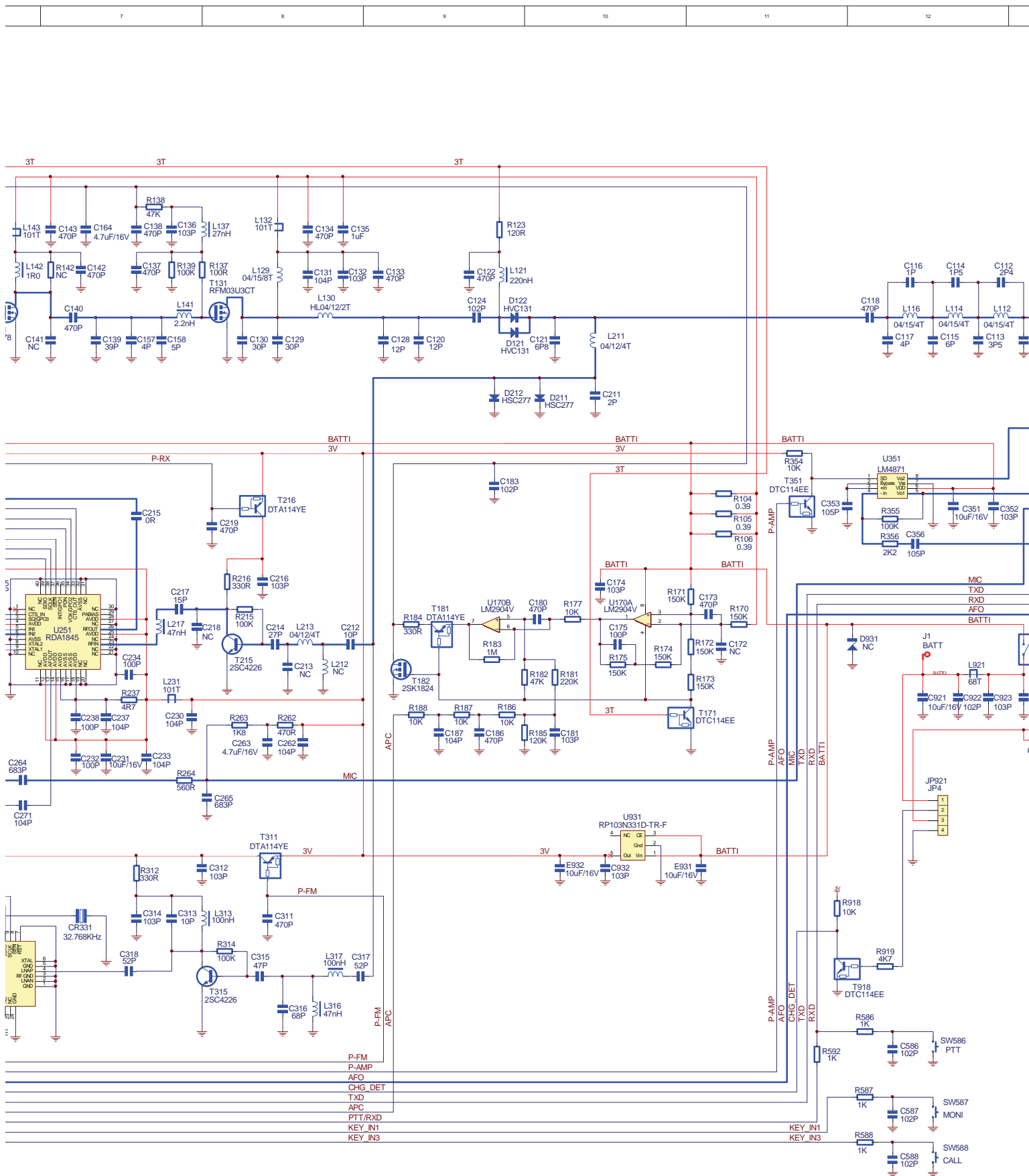




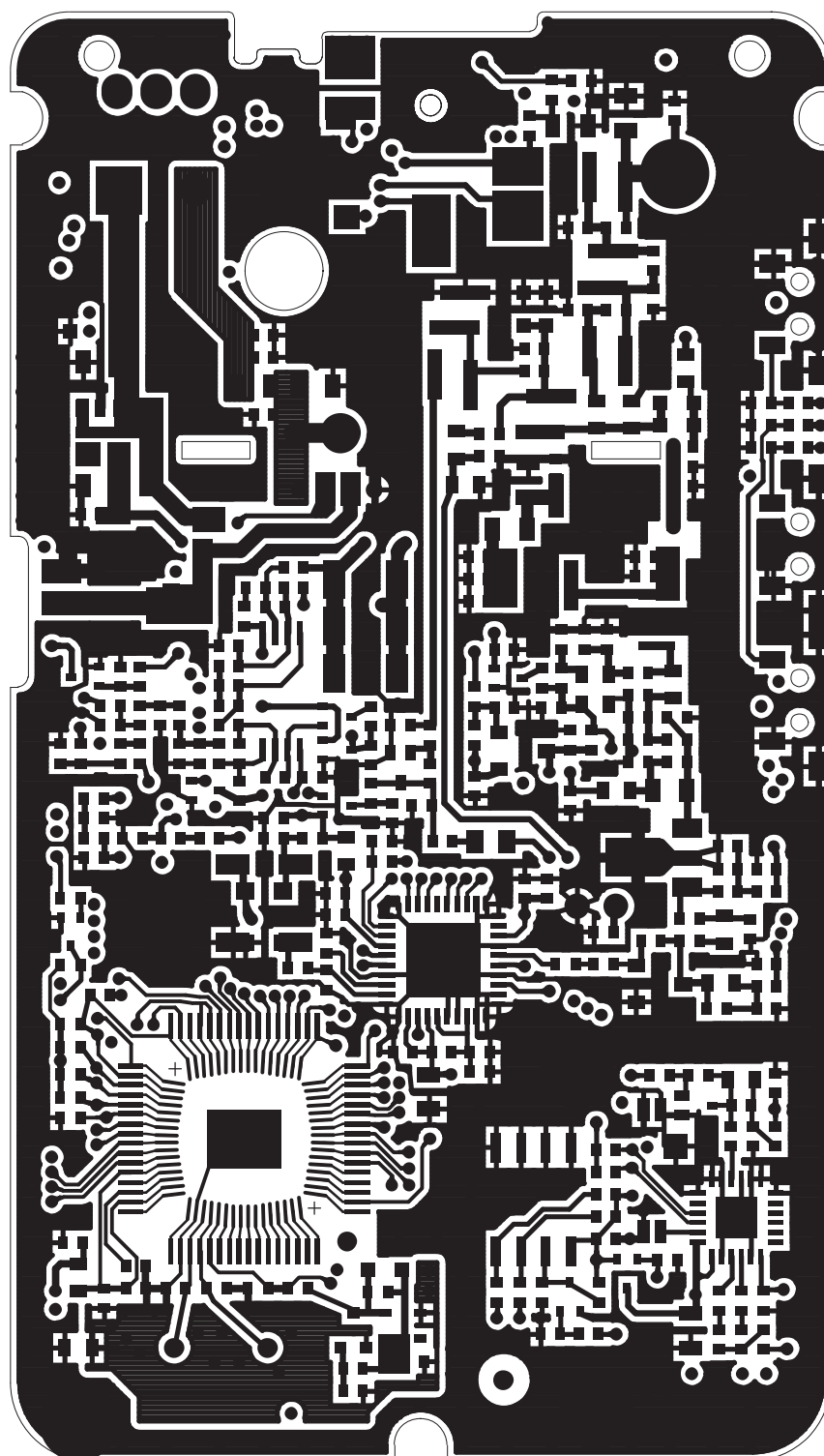


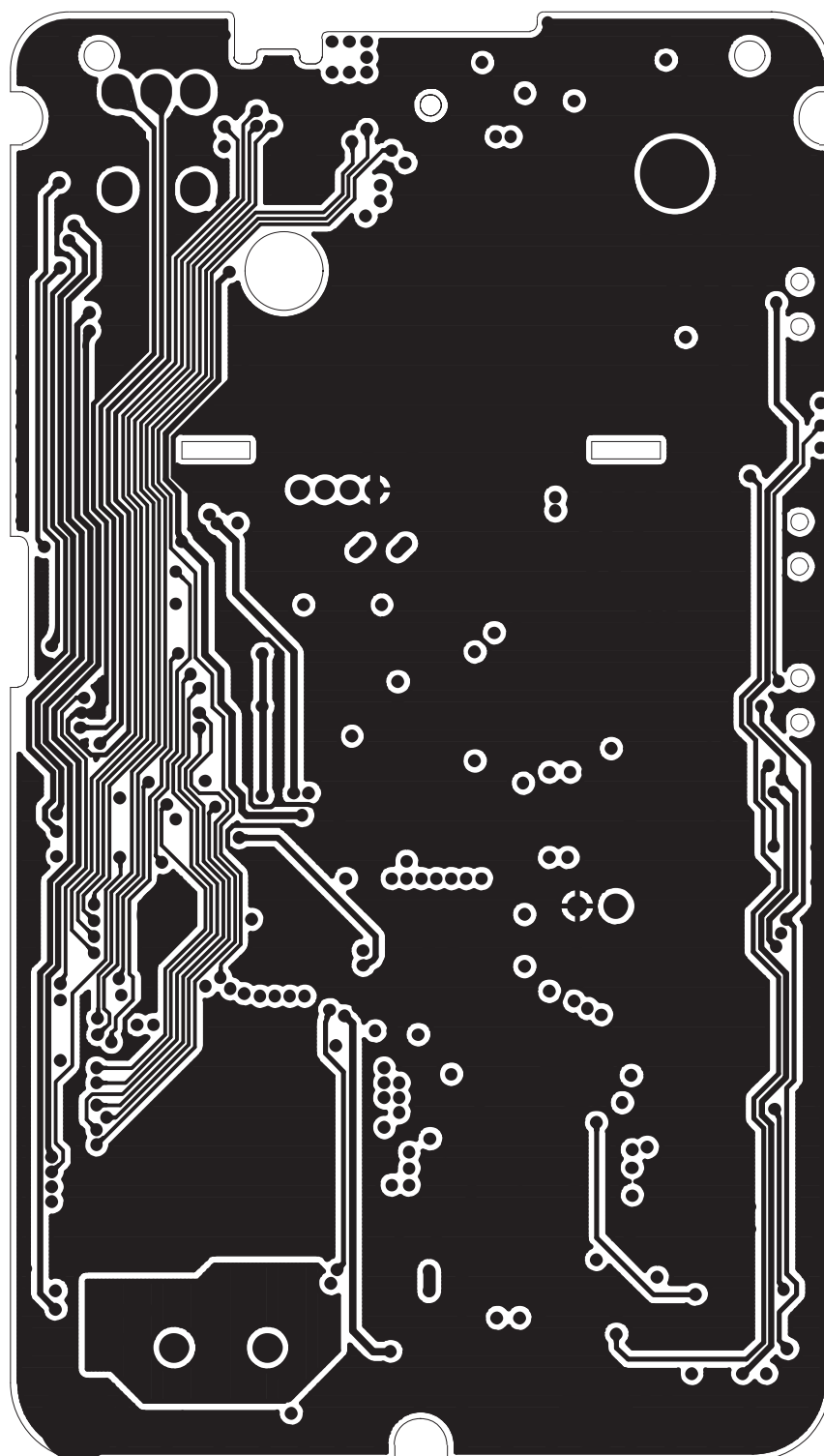


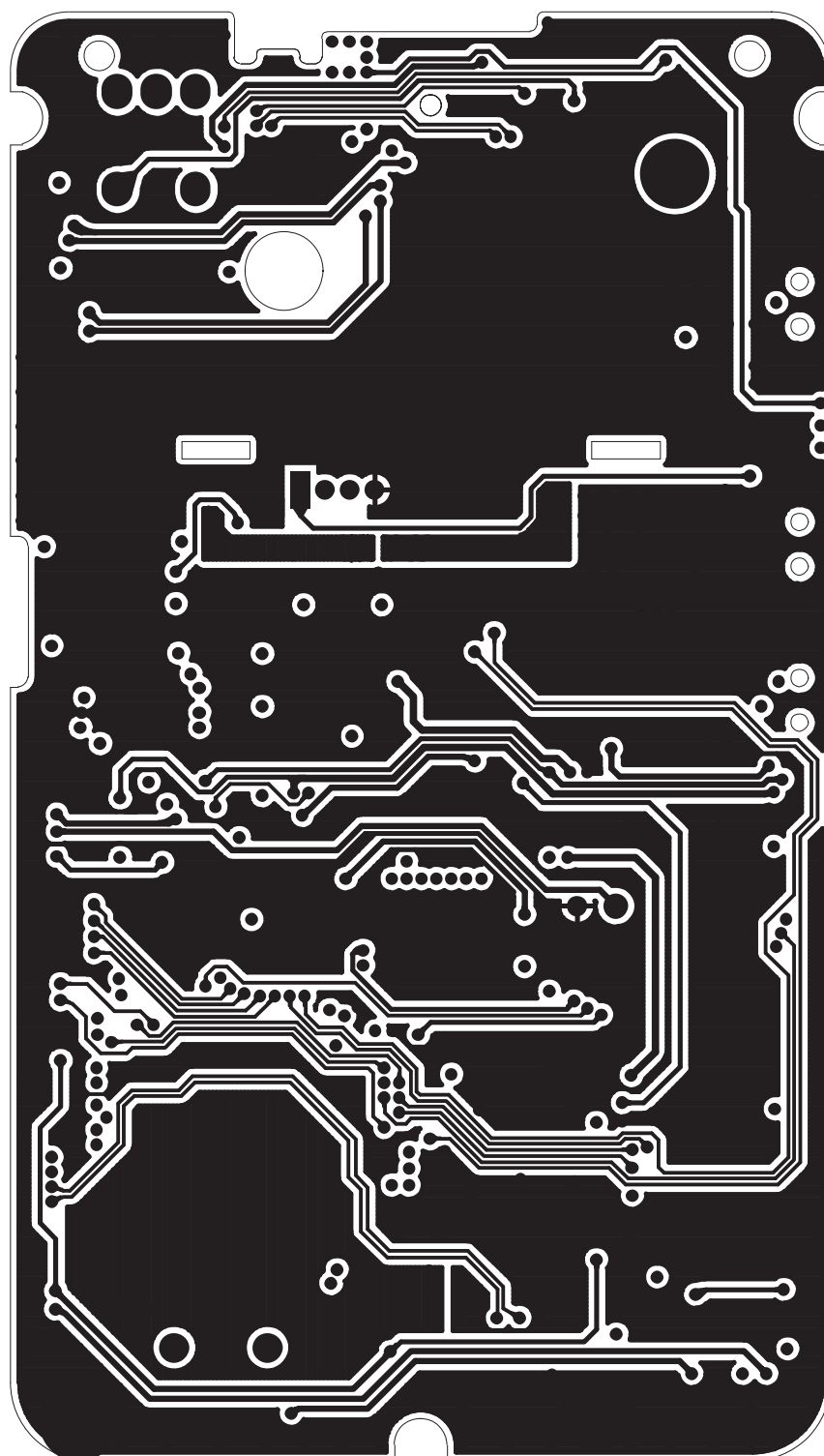


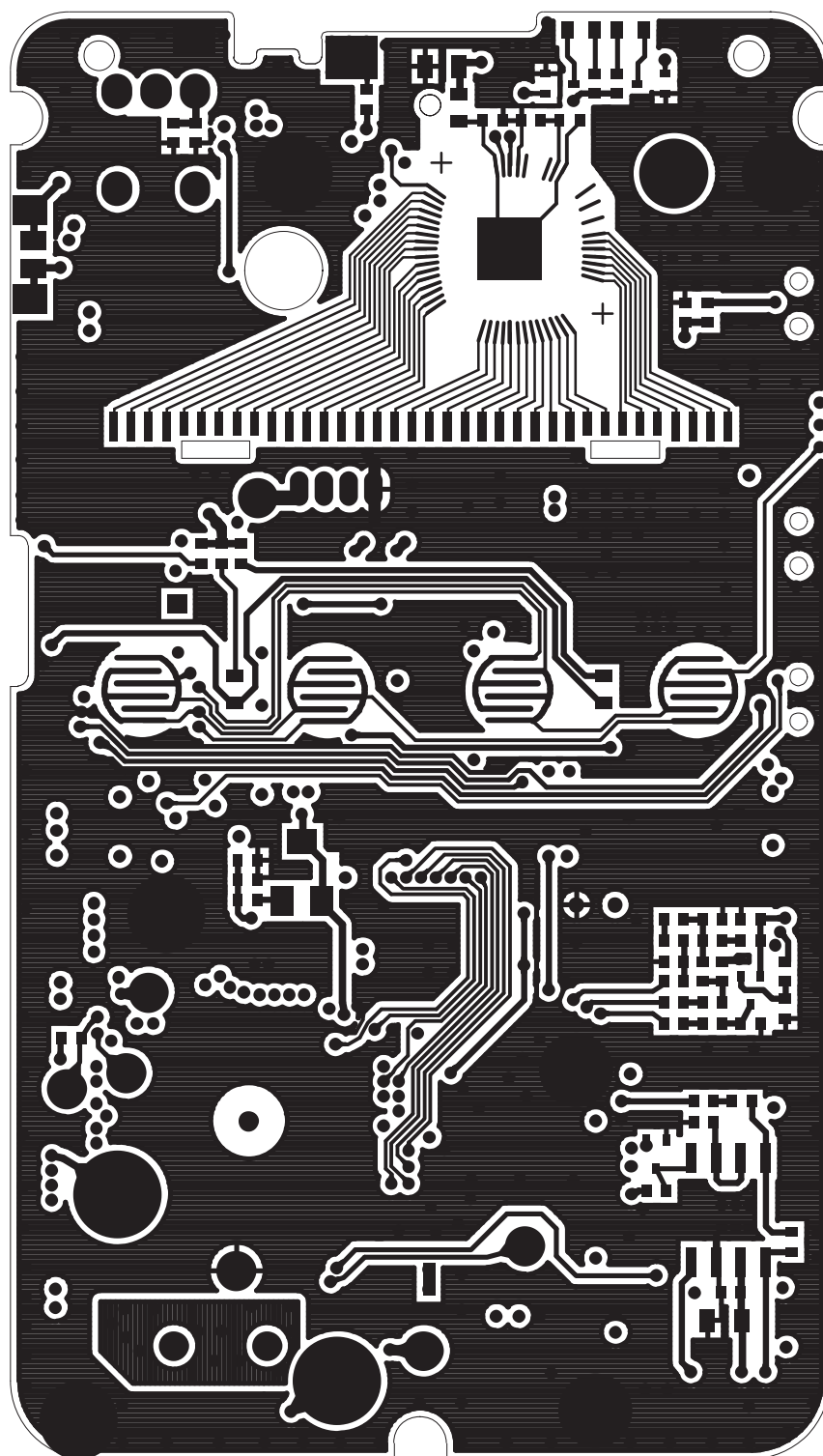












| 01-08 BOM | | | | | | | | | |
|-----------|---------|-----|----------|------|------|------|------|-----------|------|
| | | | | | | | | 2009-7-22 | |
| FREQ | 400-470 | | | | | | | | |
| MODEL | SPECS | QTY | POSITION | | | | | | MARK |
| CAPACITOR | | | | | | | | | |
| 1P5 | C0402 | 1 | C116 | | | | | | |
| 2P | C0402 | 1 | C211 | | | | | | |
| 2P4 | C0402 | 1 | C114 | | | | | | |
| 3P | C0402 | 3 | C112 | C113 | C218 | | | | |
| 4P | C0402 | 2 | C117 | C157 | | | | | |
| 5P | C0402 | 2 | C115 | C158 | | | | | |
| 10P | C0402 | 3 | C214 | C212 | C313 | | | | |
| 12P | C0402 | 4 | C217 | C120 | C128 | C243 | | | |
| 15P | C0402 | 1 | C241 | | | | | | |
| 18P | C0402 | 2 | C147 | C149 | | | | | |
| 20P | C0402 | 1 | C222 | | | | | | |
| 22P | C0402 | 2 | C521 | C522 | | | | | |
| 27P | C0402 | 1 | C139 | | | | | | |
| 30P | C0402 | 2 | C129 | C130 | | | | | |
| 33P | C0402 | 1 | C155 | | | | | | |
| 51P | C0402 | 2 | C317 | C318 | | | | | |
| 47P | C0402 | 1 | C315 | | | | | | |
| 68P | C0402 | 1 | C316 | | | | | | |
| 100P | C0402 | 3 | C232 | C234 | C238 | | | | |
| 102P | C0402 | 6 | C922 | C236 | C586 | C587 | C588 | C567 | |
| 103P | C0402 | 17 | C216 | C923 | C132 | C152 | C252 | C312 | |
| | | | C352 | C513 | C541 | C754 | C932 | C314 | |
| | | | C136 | C354 | C593 | C594 | C537 | | |
| 104P | C0402 | 20 | C271 | C163 | C161 | C230 | C131 | C233 | |
| | | | C235 | C237 | C251 | C253 | C262 | C324 | |
| | | | C325 | C326 | C511 | C515 | C523 | | |
| | | | C532 | C557 | C526 | | | | |
| 105P | C0402 | 2 | C353 | C356 | | | | | |
| 220P | C0402 | 1 | C140 | | | | | | |
| 223P | C0402 | 1 | C272 | | | | | | |
| 470P | C0402 | 17 | C924 | C165 | C162 | C124 | C133 | C134 | |
| | | | C137 | C138 | C142 | C143 | C144 | C145 | |
| | | | C151 | C311 | C512 | C122 | C357 | | |
| 470P | R0402 | 1 | R279 | | | | | | |
| 473P | C0402 | 1 | C265 | | | | | | |
| 683P | C0402 | 1 | C264 | | | | | | |
| 7P | C0603 | 1 | C121 | | | | | | |

| | | | | | | | | | |
|--------------|--------|----|-------|------|------|------|------|------|--|
| 470P | C0603 | 1 | C118 | | | | | | |
| 4. 7uF/6. 3V | C0603 | 1 | C164 | | | | | | |
| 1uF/16V | C0805 | 1 | C135 | | | | | | |
| 10uF/10V | C0805 | 7 | C231 | C323 | C351 | C921 | E931 | E932 | |
| | | | C527 | | | | | | |
| 4. 7uF/10V | C0805 | 1 | C263 | | | | | | |
| RESISTOR | | | | | | | | | |
| 0R | C0402 | 4 | C215 | C546 | R327 | R532 | | | |
| 1K | R0402 | 10 | R511 | R278 | R271 | R325 | R326 | R586 | |
| | | | R587 | R588 | R567 | R592 | | | |
| 1K8 | R0402 | 1 | R263 | | | | | | |
| 2K2 | R0402 | 1 | R356 | | | | | | |
| 3K3 | R0402 | 1 | C261 | | | | | | |
| 4R7 | R0402 | 1 | R237 | | | | | | |
| 4K7 | R0402 | 1 | R919 | | | | | | |
| 5K6 | R0402 | 1 | R164 | | | | | | |
| 10R | R0402 | 1 | R357 | | | | | | |
| 10K | R0402 | 14 | R163 | R162 | R161 | R541 | R542 | R557 | |
| | | | R354 | R513 | R571 | R572 | R573 | R574 | |
| | | | R918 | R512 | | | | | |
| 22K | R0402 | 1 | R153 | | | | | | |
| 22R | R0402 | 1 | R152 | | | | | | |
| 47R | R0402 | 1 | R144 | | | | | | |
| 47K | R0402 | 7 | R145 | R138 | R531 | R222 | R593 | R594 | |
| | | | R537 | | | | | | |
| 56K | R0402 | 1 | R215 | | | | | | |
| 82K | R0402 | 1 | R253 | | | | | | |
| 100R | R0402 | 5 | R137 | R544 | R545 | R526 | R566 | | |
| 100K | R0402 | 5 | R146 | R139 | R314 | R355 | R515 | | |
| 120R | R0402 | 1 | R123 | | | | | | |
| 150K | R0402 | 2 | R555 | R556 | | | | | |
| 220R | R0402 | 1 | R216 | | | | | | |
| 330R | R0402 | 2 | R264 | R312 | | | | | |
| 470R | R0402 | 6 | R565 | R262 | R562 | R564 | R561 | R563 | |
| 560R | R0402 | 2 | R551 | R552 | | | | | |
| 820K | R0402 | 1 | R252 | | | | | | |
| 0R | R0603 | 1 | L148 | | | | | | |
| 68K | R0603 | 1 | RT222 | | | | | | |
| 50K | RV1208 | 1 | RV221 | | | | | | |
| inductance | | | | | | | | | |
| 2. 2nH | L0603 | 1 | L141 | | | | | | |
| 18nH | L0603 | 1 | L151 | | | | | | |

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|-----------------|----------------------|---|-------|-------|-------|------|------|------|--|
| 27nH | L0603 | 1 | L137 | | | | | | |
| 47nH | L0603 | 1 | L316 | | | | | | |
| 100nH | L0603 | 2 | L313 | L317 | | | | | |
| 220nH | L0603 | 1 | L121 | | | | | | |
| 101T | L0603 | 5 | L143 | L231 | L511 | L512 | L526 | | |
| 1R0 | L0805 | 2 | L142 | L111 | | | | | |
| 47nH | L0805 | 1 | L217 | | | | | | |
| 101T | L0805 | 2 | L132 | L921 | | | | | |
| 0.4*1.5*4T | 4T | 4 | L112 | L114 | L116 | L213 | | | |
| 0.4*1.5*8T | 8T | 1 | L129 | | | | | | |
| 0.4*1.2*4T | 4T | 1 | L211 | | | | | | |
| HL0.4*1.2*2T | 2T | 1 | L130 | | | | | | |
| DIODE | | | | | | | | | |
| GREEN | D0603 | 1 | D551 | | | | | | |
| LED | D0603 | 5 | D561 | D562 | D563 | D564 | D565 | | |
| RED | D0603 | 1 | D552 | | | | | | |
| B9 | D-ESC | 1 | D222 | | | | | | |
| HSC277 | D-ESC | 2 | D211 | D212 | | | | | |
| HVC131 | D-ESC | 2 | D121 | D122 | | | | | |
| dynatron | | | | | | | | | |
| 2SC4226 | T-ESM-2SC4617(S) | 2 | T215 | T315 | | | | | |
| 2SK1824 | T-ESM-2SK1824 | 1 | T278 | | | | | | |
| DTA114YE | T-ESM-DTA114EE | 2 | T216 | T311 | | | | | |
| DTC114EE | T-ESM-DTC114EE | 7 | T217 | T351 | T567 | T918 | T551 | T552 | |
| | | | T165 | | | | | | |
| RFM03U3CT | T-RF-CST3(PX2R) | 1 | T131 | | | | | | |
| 2SK3078 | T-SOT89-2SK3078 | 1 | T141 | | | | | | |
| 2SA1362 | T-TSM-2SB624 | 1 | T161 | | | | | | |
| 2SC3356 | T-TSM-2SC3356(R25) | 1 | T151 | | | | | | |
| RP103N331D-TR-F | T-TSV-R1114(SOT23-5) | 1 | U931 | | | | | | |
| KTC4082(HF) | T-USM | 1 | T535 | | | | | | |
| IC | | | | | | | | | |
| RDA5802 | U-QFN24-0404-P050 | 1 | U331 | | | | | | |
| RDA1845 | U-QFN40(RDA1845) | 1 | U251 | | | | | | |
| TMP47 | QFP64-1212-P050-L10 | 1 | U511 | | | | | | |
| 24C32 | U-SOP8 | 1 | U541 | | | | | | |
| LM4871 | U-SOP8 | 1 | U351 | | | | | | |
| HT1621 | U-CHIP48-W | 1 | U525 | | | | | | |
| OTHERS | | | | | | | | | |
| 32.768KHz | FX-MC-146 | 1 | CR331 | | | | | | |
| ST-303 | JK-ST-304-1 | 1 | JK351 | | | | | | |
| S-SS208GS16 | S-SS208GS16 | 3 | SW588 | SW586 | SW587 | | | | |

| | | | | | | | | | |
|---|--------------|---|--------|--|--|--|--|--|--|
| SP | SP-R-2 - 1 | 1 | SP351 | | | | | | |
| | | | | | | | | | |
| 12. 8MHz | FX-DS2532 | 1 | CR241 | | | | | | |
| MIC | MIC60 | 1 | MIC261 | | | | | | |
| ANT-2 | R-2-2R-A | 1 | ANT111 | | | | | | |
| 4. 0MHz | FX-HC-49 | 1 | CR521 | | | | | | |
| R08403NS- FF20C6. 0- C10/A103-20A | SW-RG820S | 1 | SW921 | | | | | | |
| LCD | R-2-2W-LD | 1 | LCD525 | | | | | | |
| | | | | | | | | | |
| DC00960-B | JK-DC00960-B | 1 | JK911 | | | | | | |