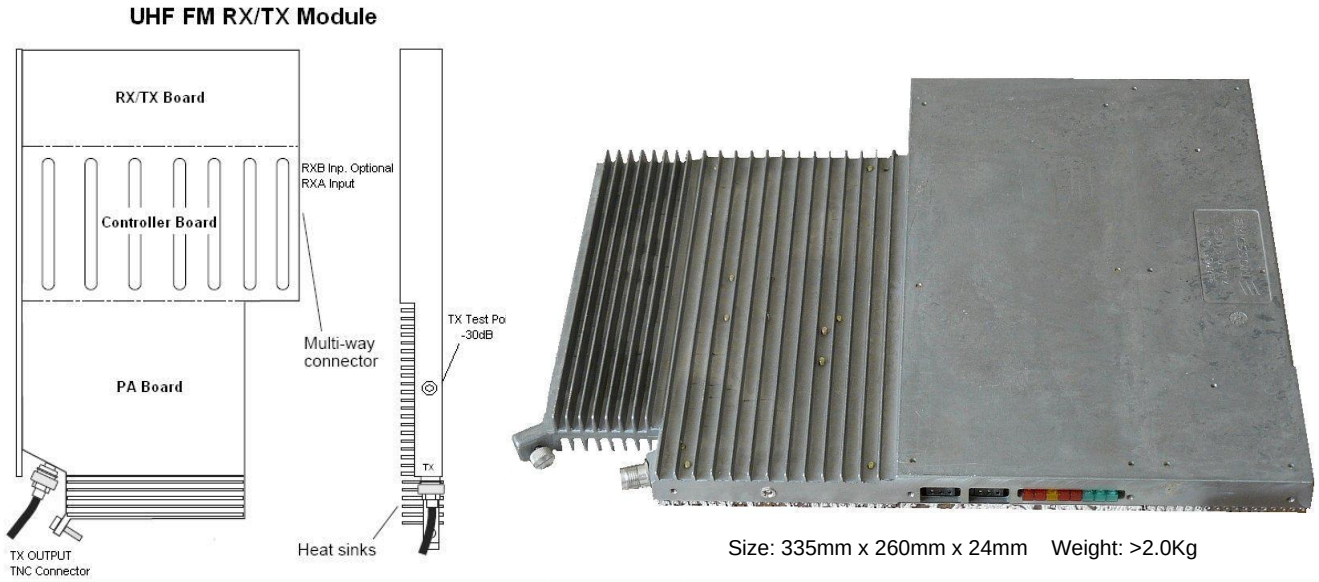
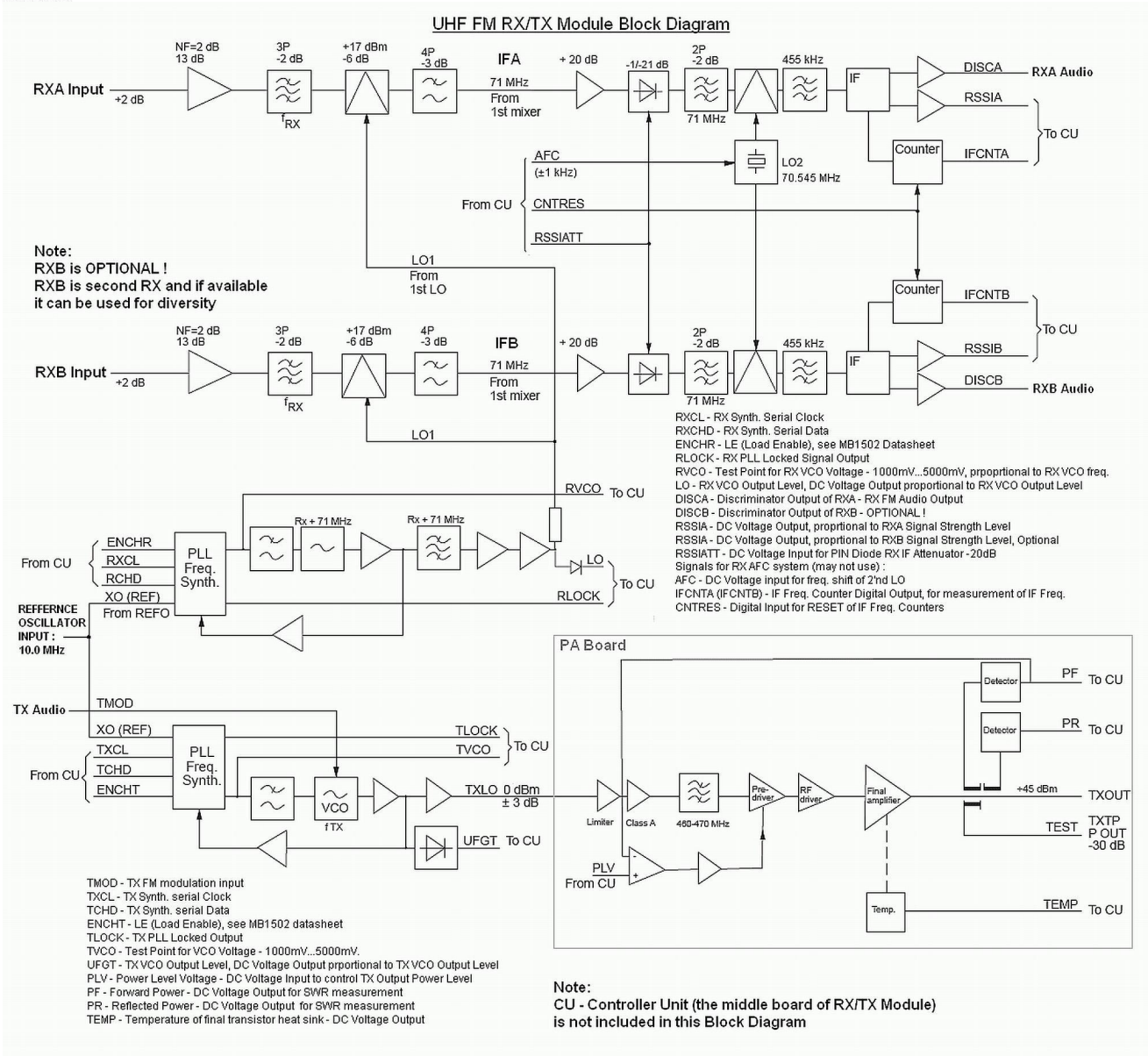
UHF FM RX/TX Module:

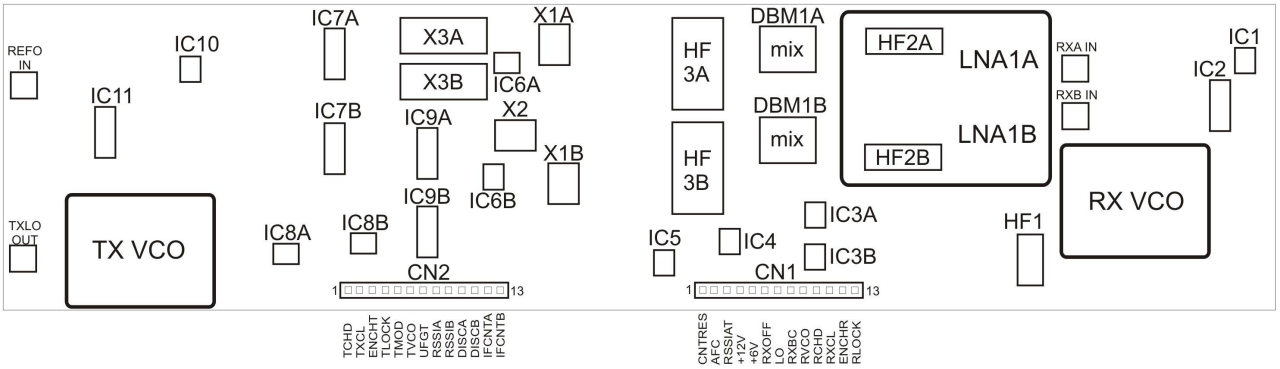
Original working frequencies: RX 455MHz +/-3MHz ; TX 465MHz +/-3MHz ; step 25kHz/12.5kHz ; Full-Duplex mode is supported. Can be modifyed to cover UHF HAM Band 430....440MHz. Single or Dual Superheterodine FM Receiver with Double-Conversion : 1'st IF=71.0MHz ; 2'nd IF=455kHz. TX Output Power Level: +45dBm (32W @ 24V DC), max. 40W @ 24V DC, or up to 15W @ 12V DC.



Size: 335mm x 260mm x 24mm Weight: >2.0Kg



UHF FM RX/TX BOARD

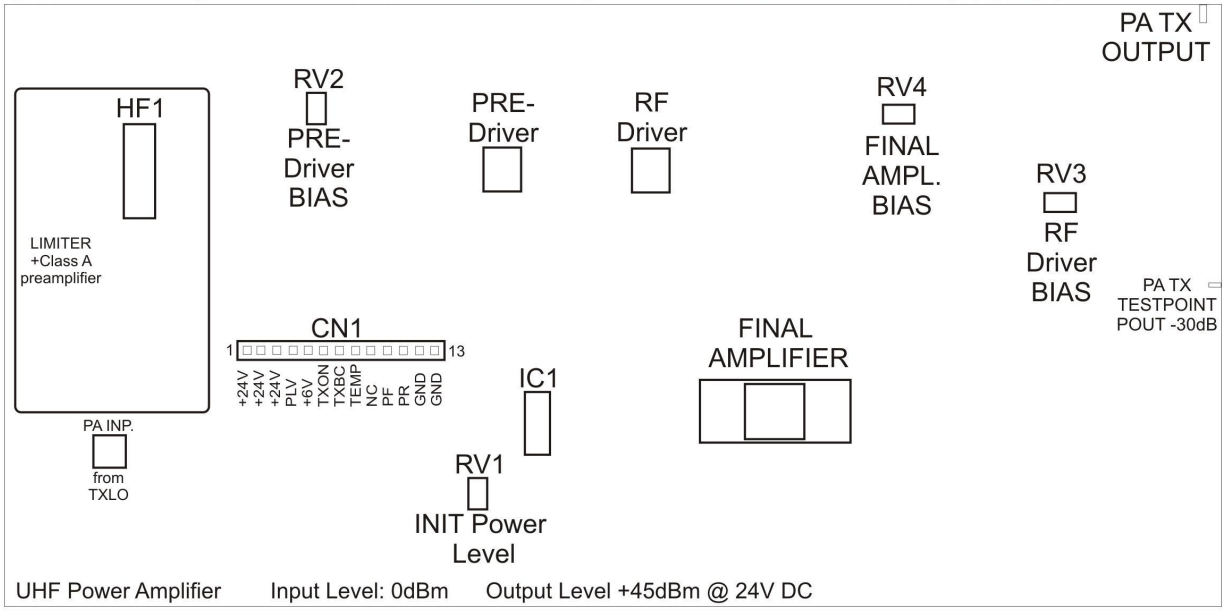


Note: Components marked with “B” at the end are not soldered in TYPE<1> Modules
For pinouts description please refer to the Block Diagram of UHF FM RX/TX Module

CN2 pinouts:
1 - TCHD TX Synth. Serial Data
2 - TXCL TX Synth. Serial Clock
3 - ENCHT TX Synth. LE, see MB1502 datasheet
4 - TLOCK TX PLL Locked Output
5 - TMOD TXFM Modulation Audio Input
6 - TVCO TX VCO Control Voltage, 1000mV...5000mV (TP)
7 - UFGT TX VCO Output Level, DC Voltage Output (TP)
8 - RSSIA RXA Signal Strength Level, DC Voltage Output
9 - RSSIB RXB Signal Strength Level, DC Voltage OPTIONAL!
10-DISCA RXA Discriminator Output, RXA Audio Output
11-DISCB RXB Discriminator Output, RXB AF Out. OPTIONAL!
12-IFCNTA IF Freq. Counter Digital Output, for AFC
13-IFCNTB IF Freq. Counter Digital Output, OPTIONAL!

CN1 pinouts:
1 - CNTRES Digital Input for RESET of IF Fereq. Counters
2 - AFC DC Voltage Input for Freq. Shift of 2’nd LO
3 - RSSIATT Input for Swich 20dB Attenuator with PIN diodes on 1’st IF
4 - VCC12V +12V DC stabilized
5 - VCC6V +6V DC (5.5V...7V)
6 - RXOFF Digital Input, RX VCC SHUTDOWN if 5V, connect to GND
7 - LO RX VCO Output Level, DC Voltage Output (TP)
8 - RXBC Output (GND when RX Board is Connected)
9 - RVCO RX VCO Control Voltage, 1000mV...5000mV (TP)
10-RCHD RX Synth. Serial Data
11-RXCL RX Synth. Serial Clock
12-ENCHR RX Synth. LE, see MB1502 datasheet
13-RLOCK RX PLL Locked Output

UHF TX POWER AMPLIFIER BOARD TYPE<2> Modules



Note: PA Boards of TYPE<1> Modules have some different components and areas,
but generally they have the same functions and pinouts, except lack of last two pins - 12 and 13.
For pinouts description please refer to the Block Diagram of UHF FM RX/TX Module

CN1 pinouts:
1 - PRE-Driver Supply Voltage +24V DC (24V...26V, work on 12V with reduced output power)
2 - FINAL AMPLIFIER Supply Voltage +24V DC (24V...26V, work on 12V with reduced output power)
3 - RF Driver Supply Voltage +24V DC (24V...26V, work on 12V with reduced output power)
4 - PLV - Power Level Voltage, DC Voltage Input to control TX Output Power Level
5 - VCC6V +6V DC (5.5V...7V), Supply Voltage for Class A, Limiter and Biases
6 - TXON Digital Input to Enable TX of PA (?PTT)
7 - TXBC TX Board Connected, (TYPE<2> resistor 22k to GND ; TYPE<1> 180R to GND)
8 - TEMP Temperature of Final Amplifier heat sink, DC Voltage Output
9 - TYPE<2> NC Not Connected ; TYPE<1> RF Power Level of RF Driver
10-PF Forward Power, DC Voltage Output for SWR Measurement
11-PR Reflected Power, DC Voltage Output for SWR Measurement
12-TYPE<2> GND ; TYPE<1> Not Used
13-TYPE<2> GND ; TYPE<1> Not Used

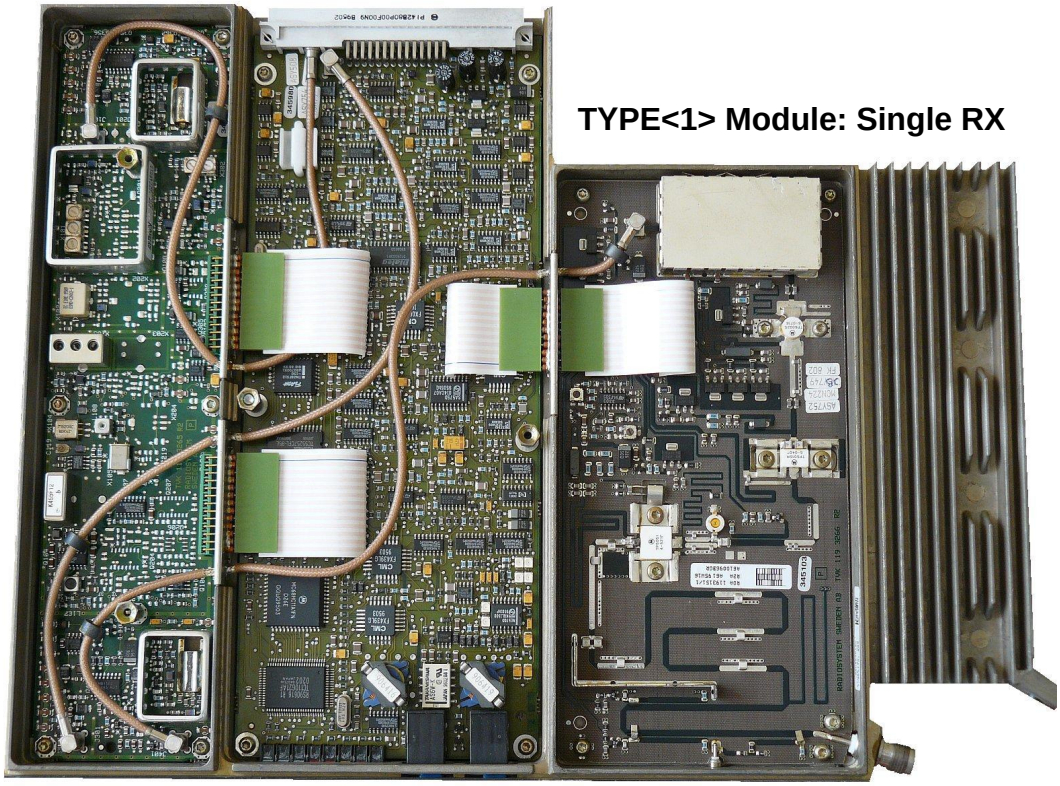
Some of components:

RX/TX Board :

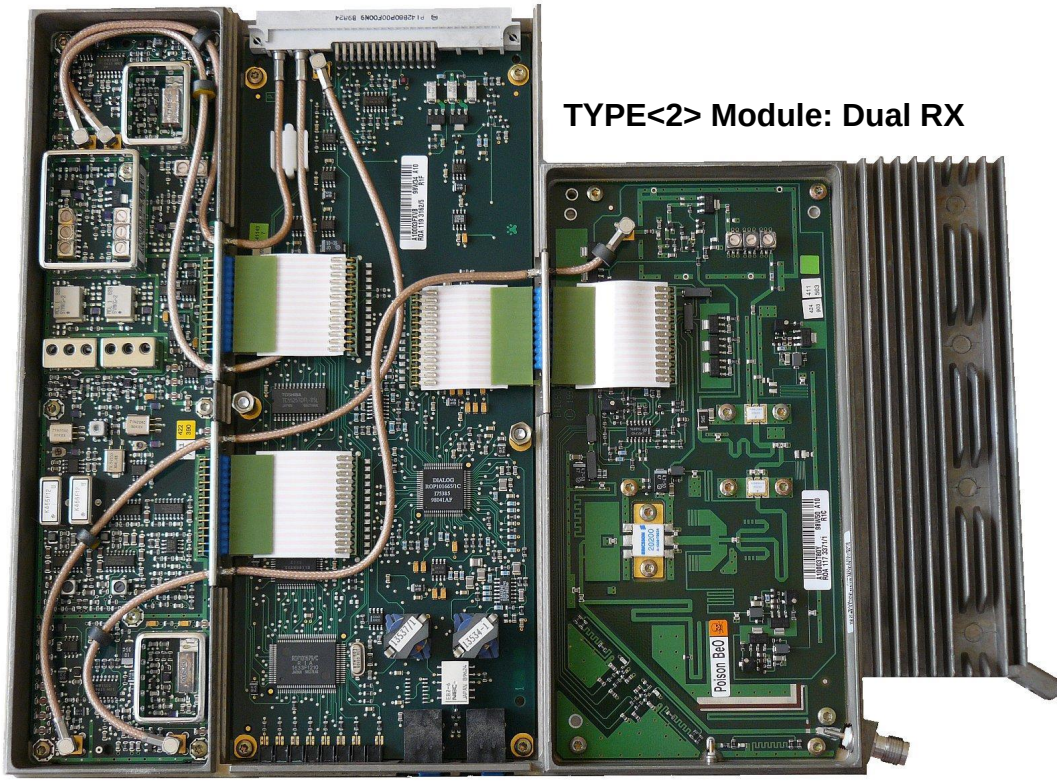
IC1 ; IC3A ; IC3B ; IC4 ; IC5 ; IC10 - DC Voltage Regulator - LP2951
IC2 RX; IC11 TX - Serial Input PLL Frequency Synthesize - MB1502
DBM1A ; DBM1B - Surface Mount Mixer - ESMD-C2HX2-1
IC6A ; IC6B - Double-balanced mixer and oscillator - SA602A
IC7A ; IC7B - High performance low power FM IF system - SA604A
IC8A ; IC8B - CMOS Dual Operational Amplifier - LMC662
IC9A ; IC9B - 14 Stage Binary Counter - MM74HC4060
LNA1A ; LNA1B - made with NPN 7GHz wideband transistor - BFG135

Power Amplifier Board :

IC1 - Low Power Quad Operational Amplifiers - LM224
Class A preamplifier Transistor - BFG135
PRE-Driver Transistor - 20204 or TP5002S or SD1390
RF Driver Transistor - 20203 or TP5051R or SD1391
Final Amplifier transistor - 20200 or TP5051or SD1393



TYPE<1> Module: Single RX



TYPE<2> Module: Dual RX