

RF Board Active Parts BOM

AD30-100104		ITU RF Board		
Part No.	Qty.	Description	Manufacturer 1	Brief Description of Function
3000-04401	6	Transistor, SMT, Gen Pur, NPN, Amplifier, MMBT4401, SOT 23	Fairchild, MMBT4401	Power Switching control to various sections of the RF board
3000-F2222	2	Transistor, SMT, Gen Pur, NPN, FMMD2222ACT, SOT 23	Zetex, FMMD2222ACT	Buffer between the DDS and the HF PA
3010-04403	1	Transistor, SMT, Gen Pur, PNP, Amplifier, MMBT4403, SOT 23	Fairchild, MMBT4403	used as switch for PLL lock indication
3010-05089	1	Transistor, SMT, Gen Pur, PNP, Bipolar, MMBT5089, SOT 23	Fairchild, MMBT5089	connected to Vdd of FM demod for power supply decoupling and isolation
3030-00336	5	Transistor, SMT, Gen Pur, FET, P-Channel, -1.2A, -20V, Rds(on)=0.27 Ohm@-2.7V, 0.2 Ohm@-4.5V, NDS336P, SOT-23	Fairchild, NDS336P	Power Switching control to various sections of the RF board
3100-00561	2	Transistor, SMT, RF, NPN, MRF581A, Macro X	Motorola, MRF581A	First stage of RF transmit amplification class A
3120-25139	1	Transistor, SMT, RF, FET, N-Channel, NE25139T1U72, SOT 143	NEC, NE25139T1U72	Buffer amp between synthesizer and DDS for the modulation clock to the DDS
3130-00456	1	Transistor, SMT, RF, FET, P-Channel, Rds(on)=0.45 Ohm@-4.5V, Vdss=-30V, Id=7.5A, Pd=3W, NDT456P, SOT 223	National Semi, NDT456P	Power switch control for 12V_Tx
3140-01969	2	Transistor, TH, RF, NPN, 2SC1969, TO 220	Mitsubishi, 2SC1969	Final stage of HF transmit amplification class AB
3140-02078	2	Transistor, TH, RF, NPN, 2SC2078, TO 220	Sanyo, 2SC2078	2nd stage of HF transmit amplification class AB
3300-00914	2	Diode, SMT, Signal, Silicon Planar High Speed Switching, FMMD914-5D, SOT-23	Zetex, FMMD914-5D	used as an antenna clamp from the antenna in a back to back configuration
3300-04148	3	Diode, SMT, Signal, High Speed Switching Rectifier, LL4148, DL 35	Diodes Inc, LL4148	used for switching control of power to different sections of the RF PCB
3310-00043	1	Diode, SMT, Signal, Schottky, Vrs=30V, Is=100mA, Ifs=20mA, Pd=200mW, LL43, MiniMELF	Vishay, LL43	Acts detector for the RF power reflected back from the antenna
3400-00S2A	2	Diode, SMT, Power, Glass Passivated Rectifier, S2A/A, SMA	Vishay, S2A/A	biasing for the HF PA 2nd stage and final stage transistors
3500-00056	1	Transistor, SMT, Gen Purp, Icm=1.5A, Isc=1A, Ptot=2W, NPN Silicon Planar, Vcb=100V, Vce=80V, Veb=5V, BCP56T1, SOT223	Zetek, BCP56T1	series pass regulator transistor for voltage supply to MRF581 RF amplifier section
3500-84C15	1	Diode, SMT, Zener, Voltage Regulator, BZX84C15L, SOT 23	Motorola, BZX84C15L	voltage reference for series pass transistor BCP56
3500-84C43	2	Diode, SMT, Zener, 4.3V, BZX84C43ZXCT, SOT 23	Zetex, BZX84C43ZX	limiter for the inputs to op amps 6032 and 8351
3700-01450	5	Diode, SMT, Varactor (Tuning), KV1450, SOT 23	Toko, KV1450	used in 5 places for tuning the LO synthesizer and the FM RF signal chain
4020-00066	2	I.C., SMT, Digital, 74HC Series, 74VHC4066M, SOIC 14	Fairchild, 74VHC4066M	Analog switch used for switching control signals from the digital board to RF board components
4020-00244	1	I.C., SMT, Digital, 74HC Series, Octal Tri-State Buffer, 74HC244, SOIC 20	National Semi, 74HC244	Buffer used for buffering the data bus from the digital board to the DDS
4200-05812	1	I.C., SMT, Controller, Serial Relay Driver, UCN5812EPF, PLCC 28	Allegro, UCN5812EPF	used to decode signals from the digital board that control the relays on the RF board
4215-08591	1	I.C., SMT, A/D Converter, 8 bit A/D and D/A, PCF8591, SOIC 16	Phillips, PCF8591	reads RSSI, multipath indication, high power PA test, low power PA test, and reflected power level measurements
4340-09850	1	I.C., SMT, Digital, Synthesizer, D/A Frequency Generator, AD9850BRS, SOGIC 28	Analog Devices, AD9850BRS	Direct Digital Synthesizer (DDS) generates encoded data RF modulated for direct use to the HF PA
4500-00184	1	I.C., SMT, Analog, OP Amplifier, OP184FS, SOIC 8	Analog Devices, OP184FS	op amp in ALC output level control loop. Output voltage a function of HF PA bias current. Vov=0.033% buffer amp circuit for reverse (reflected) power sense on output of HF PA. Amplifies the DC voltage generated by the detector diode
4500-06032	1	I.C., SMT, Analog, OP Amplifier, Quad, LMC6032IM, SOIC 8	National Semi, LMC6032IM	
4500-08531	1	I.C., SMT, Analog, OP Amplifier, AD8531AR, SOIC 8	Analog Devices, AD8531AR	wired as integrator to the output of the current sense circuit described above to set the bias of HF PA transistors
4520-52063	1	I.C., SMT, RF Amplifier, INA-52063-TR, SOT 363	Hewlett Packard, INA-52063-TR	LNA for FM RF input
4620-06588	1	I.C., SMT, Demodulator, RDS/RBDS Pre-processor, SAA6588, SOIC 20	Phillips, SAA6588	RDS info decoder for extracting RDS info from FM broadcast stations
4630-02301	1	I.C., SMT, Phase Lock Loop, 160 MHz Frequency, LMX2301, SOLIC 20	National Semi, LMX2301	PLL for synthesizing the LO fed to the FM demod
4830-00626	1	I.C., SMT, RF, Mixer, Low Voltage FM IF System w/ High Speed RSSI, SA626D, SOLIC 20	Phillips, SA626D	complete FM broadcast band demod from RF to baseband. Used for receiving RDS info from FM broadcast stations
8150-01680	1	TCXO, SMT, 16.8MHz, KT11-ECU50N-16.800MT, 8mm X 7.62mm	AVX, KT11-ECU50N-16.800MT	oscillator module supplying a 16.8 MHz reference to PLL and also the clock for the microprocessor on the digital board.