

APPENDIX 3
FUNCTION OF DEVICES

THREE (3) PAGES OF SEMICONDUCTOR FUNCTIONS FOLLOW THIS SHEET

FUNCTION OF DEVICES
FCC ID: MGPNR-100

APPENDIX 3

FUNCTIONAL DESCRIPTION OF ACTIVE COMPONENTS

Ref.	Part Number	Description of Parts	Functional Description of Parts
D001	DDE2-1K60	RF Diode (1N60)	RF Detector for Noise Blanker circuit
D002	DDE2-1K60	RF Diode (1N60)	RF Detector for Noise Blanker circuit
D003	DDE1N4148	Switch Diode (1N4148)	Switching Diode for NB noise shunting transistor TR7
D007	DDE1N4148	Switch Diode (1N4148)	Switching Diode - voltage gating - Rx AGC
D008	DDE1N4148	Switch Diode (1N4148)	Switching Diode - AGC input
D009	DDE1N4148	Switch Diode (1N4148)	Switching Diode - AM AGC attack time control
D010	DDE2-1K60	RF Diode (1N60)	IF Level Detector - for Rx Signal Meter and AGC
D011	DDE2-1K60	RF Diode (1N60)	IF Level Detector - for Rx Signal Meter and AGC
D012	DDE1N4148	Switch Diode (1N4148)	Switching Diode - voltage gating for Signal Meter signal
D014	DDE1N4148	Switch Diode (1N4148)	Switching Diode - voltage gating
D015	DDEMI301	Pin Diode	Protect Receiver Front end from excessive signal (AGC RF Control)
D016	DDEMI301	Pin Diode	Protect Receiver Front end from transmitter signal
D018	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Provide 10.695MHz signal to TX mixer in AM Tx Mode
D019	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Provide 10.695MHz signal to FL3 in AM Tx Mode
D123	DDE1N4148	Switch Diode (1N4148)	Switching Diode PLL VCO circuit
D023	DDE2-1K60	RF Diode (1N60)	AM Demodulator
D024	DDE2-1K60	RF Diode (1N60)	AM Demodulator
D026	DDE1N4148	Switch Diode (1N4148)	ANL circuit
D028	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Mute Rx audio in Tx Mode
D029	DDE1N4007	Power Diode	Voltage Clamping
D030	DDESVC251	VC Diode	PLL VCO
D033	DDE1N4148	Switch Diode (1N4148)	Switching Diode PLL VCO circuit
D038	DDE1N4148	Switch Diode (1N4148)	Switching Diode - voltage gating
D039	DDE1N4148	Switch Diode (1N4148)	Voltage Clamping
D061	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Mute Squelch when PLL is out of lock
D065	DDE1N4148	Switch Diode (1N4148)	Voltage Clamping
D066	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Disable PTT when PLL is out of lock
D067	DDE1N4148	Switch Diode (1N4148)	Audio Detector for automatic mic audio level control
D068	DDE1N4148	Switch Diode (1N4148)	Audio Detector for automatic mic audio level control
D069	DDE1N4148	Switch Diode (1N4148)	Audio Detector for automatic mic audio level control
D070	DDE1N4148	Switch Diode (1N4148)	Switching Diode - ALC operation
D071	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Mute Mic audio during receive mode
D076	DDE-C5V1G	Zener 5.1v $\pm 2\%$ On S505	Voltage offset for Rx active voltage switch TR36/TR38
D077	DDEMA29TA	VR Diode (KB362)	Switching Diode for Tx active voltage switch TR38
D078	DDE-C7V5G	Zener 7.5V $\pm 2\%$	Reference voltage source for 8V voltage regulator TR40/TR41
D079	DDEMA29WA	VR Diode (KB262)	Bias Diode for 8V voltage regulator TR40/TR41
D080	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Mute AF Power amplifier in Tx Mode
D081	DDE1N4148	Switch Diode (1N4148)	Switching Diode - PTT keying control
D082	DDE1N4148	Switch Diode (1N4148)	Switching Diode - PTT keying control
D083	DDE2-1K60	RF Diode (1N60)	Audio Detector for ALC operation
D086	DDE1N4148	Switch Diode (1N4148)	Transmit level detector for TX Power meter
D087	DDE1N4148	Switch Diode (1N4148)	Transmit level detector for TX Power meter

Ref.	Part Number	Description of Parts	Functional Description of Parts
D091	DDE1N4148	Switch Diode (1N4148)	Voltage Clamping
D092	DDE1N4148	Switch Diode (1N4148)	Bias Control for TR53
D093	DDE1N4004	Power Diode	Secondary Power Supply polarity reversal protection
D094	DDE1N4148	Switch Diode (1N4148)	Switching Diode - enable 2nd offset oscillator in TX Mode
D094a	DDESVC251	VC Diode	PLL VCO
D113	DDE1N4148	Switch Diode (1N4148)	Switching Diode - Disable Rx audio during PA operation
D124	DDESVC251	VC Diode	PLL offset frequency oscillator - Clarifier frequency control
D125	DDE1N4148	Switch Diode (1N4148)	AGC - Control IF Gain
D309	LED-R-0021RGM	LED DIA.3mm Red/Green	Tx/Rx Indicator
D401	DDE2-1K60	RF Diode (1N60)	SWR signal detector
D402	DDE2-1K60	RF Diode (1N60)	SWR signal detector
D501	DDE6A05	Diode 6A/50V On DC Socket	Primary Power Supply polarity reversal protection
D701	DDE1N4148	Switch Diode (1N4148)	Clock Input Switch for IC706
FL001	FLRB00M455A5	Ceramic Filter 455KHz	AM Second IF Filter
FL002	FLRB10M700A1A	Ceramic Filter 10.7MHz	AM First IF Filter
IC001	ICT324N	LM324N	Amplifier for : Signal Meter, Squelch Control, Receiver AGC
IC004	ICT4558D	NJM4558D	Amplifier for : Microphone Audio, PTT control
IC707	ICT145106P	MC145106P	PLL Synthesizer IC
IC008	ICT7222AP	TA7222AP	4W Audio Power Amplifier IC
IC009	ICT6130-5	TDA6130-5	RF Mixer IC for Tx frequency generation
IC010	ICT7310P	TA7310P	RF Mixer with buffer amplifier for PLL offset frequency generation
IC701	ICPZ0408	Z86E0408P	CPU For Channel Switch
IC702	ICT93LC46P-A	HT93LC46	EEPROM for CPU
IC703	ICT7805	LM7805	5V DC Regulator IC
IC704	ICT74LS164N	SN74LS164N	Channel display LED Latch Driver
IC705	ICT74LS164N	SN74LS164N	Channel display LED Latch Driver
IC706	ICT74HC164	TC74HC164AP	Latch driver for PLL programmable divider
IC901	ICKA8507	KA8507	Comander Circuit
Q261	TTR2SC945P	2SC945P	PA Tone Amplifier
Q701	TTR9013H-A	STS9013H	Driver for Channel display LED
Q703	KTC3876Y	KTC3876Y	Driver for PLL programmable divider
TR001	TTR2SC1675K	2SC1675K	Noise Blanker RF amplifier
TR002	TTR2SC1675K	2SC1675K	Noise Blanker RF amplifier
TR003	TTR2SC945P	2SC945P	Noise Blanker RF amplifier
TR004	TTR2SC945P	2SC945P	AGC Control for Noise Blanker RF amplifier
TR005	TTR2SC945P	2SC945P	Noise Blanker - Audio Noise amplifier
TR006	TTR2SA733P	2SA733P	Noise Blanker - Audio Noise amplifier
TR007	TTR2SC945P	2SC945P	Noise Blanker - IF Shunting transistor
TR008	TTR2SC1674L	2SC1674L	Second IF Mixer
TR009	TTR2SC1675K	2SC1675K	455KHz IF Amplifier
TR010	TTR2SC1675K	2SC1675K	455KHz IF Amplifier
TR011	TTR2SC1675K	2SC1675K	455KHz IF Amplifier
TR013	TTR2SC945P	2SC945P	Signal meter adjustment - AM Mode
TR016	TTR2SC945P	2SC945P	Switch - disable receiver audio

Ref.	Part Number	Description of Parts	Functional Description of Parts
TR018	FETJ310	J310 (FET)	First IF Mixer
TR023	TTR2SC945P	2SC945P	Switch - AM Demodulator control
TR024	TTR2SC1675K	2SC1675K	10.24MHz Reference Frequency crystal oscillator
TR025	TTR2SC1675K	2SC1675K	PLL VCO
TR026	TTR2SC1675K	2SC1675K	PLL VCO
TR030	TTR2SC1675K	2SC1675K	Second offset frequency crystal oscillator
TR032	TTR2SC945P	2SC945P	ALC audio shunting transistor
TR034	TTR2SA733P	2SA733P	Audio Detector for ALC operation
TR036	TTR2SA1282	2SA1282	Rx Active voltage control
TR037	TTR2SC945P	2SC945P	Rx Active voltage control
TR038	TTR2SA1282	2SA1282	TX Active voltage control
TR040	TTR2SC945P	2SC945P	8V Power supply regulator
TR041	TTR2SB1566E	2SB1566E	8V Power supply regulator
TR042	TTR2SC945P	2SC945P	Audio pre-amplifier for received audio
TR043	TTR2SC1969	2SC1969	RF Power Transistor
TR044	TTR2SC2166C	2SC2166C	RF Power Driver
TR045	TTR2SC1957	2SC1957	RF Power Pre-Driver
TR046	TTR2SC1906	2SC1906	RF amplifier
TR049	TTR2SC945P	2SC945P	AM RF Power control and AM Modulator
TR050	TTR2SA1282	2SA1282	AM RF Power control and AM Modulator
TR051	TTR2SB754Y	2SB754Y	AM RF Power control and AM Modulator
TR053	TTR2SC945P	2SC945P	AM Modulation Control
TR061	FET3SK77GR	3SK77GR	Receiver front end amplifier
TR901	TTR2SC945P	2SC945P	PA Bridge Amplifier
TR351	TTR2SC945	2SC945P	E.L. Back Light Inverter
X001	XTLB10M2400A2	Crystal 10.2400MHz (YUWA)	Crystal for PLL reference frequency oscillator
X002	XTLB14M0100A1	Crystal 14.0100MHz (YUWA)	Crystal for PLL offset frequency mixer oscillator
X004	XTLB10M6975A1	Crystal 10.6975MHz (YUWA)	Crystal for second offset frequency oscillator
X701	XTLC08M0000A1	Crystal 8.0MHz	Clock Crystal for Channel Switch CPU