ECLIPSE MODULES – Standard Factory settings

RECEIVER				TRANSMITTER			
Function	**Level**	**Range (Vrms, dBm)**		**Function**	**Level**	**Range (Vrms, dBm)**	
Discriminator Audio output	**0.5V**	0.3V	2.0V				
Direct Audio output	**0.51V**	0.3V	1.5V	High Z input		25 mV	1V
Line Level (600 ohm) output for 60% of max deviation	**0.775V** **0dBm**	0.245V -10 dBm	2.45V 10 dBm	Line Level (600 ohm) input for 60% of max deviation	**0.388V** **-6.0dB**	0.0245V -30 dBm	2.45V 10 dBm
Noise Squelch (typical)	**0.18uV** **-122dB**	0.18uV -122dB	0.50uV -113dB				
Carrier Squelch (typical)	**Min**	1uV -150dB	999uV -47dB				
				Microphone input	**6 mV**	Into 200 ohms	

ECLIPSE ALARMS

LED FLASH CADENCE	RECEIVER ALARMS	TRANSMITTER ALARMS
Flashes **5** times, pause	Synthesizer unlocked	Synthesizer unlocked
Flashes **4** times, pause	VCO Tuning Voltage outside limits	VCO Tuning Voltage outside limits
Flashes **3** times, pause	Signal level below preset threshold (for fixed links)	Low forward power
Flashes **2** times, pause	Unused – future development	High reverse power
Flashes **1** times, pause	DC voltage supply voltage low or high	DC voltage supply voltage low or high
LED ON continuously	External Squelch is active	Transmitter timed out

ALARM TRUNKING INTERFACE (ATI) CARD (option)
The receiver and transmitter alarms are combined as an OR function so that any alarm condition provides a common alarm output. The common alarm output is provided through Pin 4 (DB-25F) on the interface card and can be set active low or high, (default active low). The receiver & transmitter input/ output signals are also accessed through the rear DB-25F connector.

1U LOW PROFILE ADAPTOR WITH AL ARM TRUNKING INTERFACE (option)
The receiver and transmitter alarms are combined as an OR function so that any alarm condition provides a common alarm output. The common alarm output is provided through Pin 9 (DB-37F) on the interface card and can be set active low or high, (default active low). The receiver & transmitter input/ output signals are also accessed through the rear DB-37F connector.

ACCESSORIES

BATTERY CHARGER, CHANGE OVER CARD
The battery trickle charger and change over card provides a separate alarm output that monitors the DC supply voltage. It is adjusted so that if the DC supply voltage falls below 11.5V, the relay connects the standby battery to the system. At the same time the alarm output signal goes low. The alarm signal returns high only when the DC supply rises above 12.2V and continues above that level.

HEART BEAT TIMER
Automatically keys a transmitter ON and OFF in a continuous cycle. Both ON and OFF times can be adjusted from a few seconds to several minutes.

TRANSMITTER DATA INTERFACE/ EXTERNAL REFERENCE/ BLACK NOISE GENERATOR
Accepts TTL or RS-422 data and control signals. The direct FSK/NRZ modulation can accept speeds up to 4800 Bps. Suitable for POCSAG paging and simulcast applications

RECEIVER DATA INTERFACE
Reconstitutes a data signal from the discriminator output

STATUS TONE GENERATOR
Generates an audio tone of 1950Hz when the receiver is squelched (closed) and passes normal audio when unsquelched. Optional frequencies 2175Hz, 2700Hz require extra crystals.

SOLID STATE ANTENNA SWITCH UNIT
Electronic switching for simplex operation. Available for all models except 800 Series

FAN CONTROL UNIT
2U rack mounted fan module for cooling in hot environments with high duty cycles

Antenna System Considerations

Single Frequency with T/R Switch

Controlled by Transmitter T/R output
T/R Switch will withstand high VSWR

Power Rating

VHF 100 Watts
UHF 50 Watts

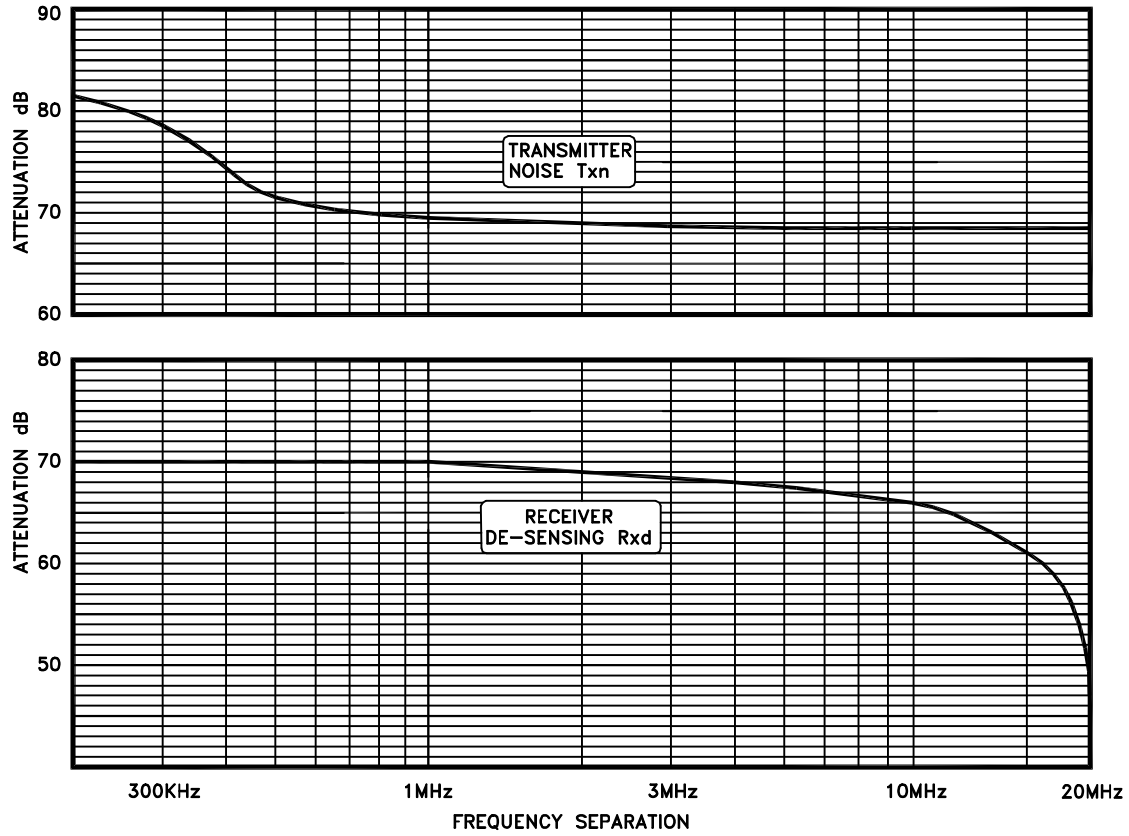
Two Frequency Duplex Operation

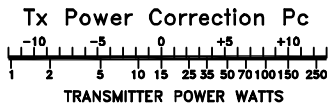
Always use double shielded coax

Tx – Rx Isolation see Duplex Operation Curves

Supress Tx noise at Rx frequency > Txn + Pc
Attenuate Tx signal at Rx input > Rxd + Pc

DUPLEX OPERATION CURVES FOR 400–520 MHz





Minimum Tx freq. attenuation = Rxd + Pc

Minimum Rx freq. attenuation = Txn + Pc