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TRAINING MANUAL

ECLIPSE SERIES SPECIFICATIONS SUMMARY

[illegible]

Exciters / Transmitters		T50		T70		T150		T220		T350		T500		T800	
<u>Frequency spread</u>		25 MHz		15 MHz		20 MHz		2 MHz		5 MHz		10 MHz		25 MHz	
<u>Frequency stability</u>				5 ppm std, 2 ppm optional						1 ppm standard					
<u>Power output adjustable</u>								5 to 25 watts						1 to 15 watts	
<u>Power regulation</u>															
<u>Duty Cycle</u>															
<u>Carrier & modulation</u>															
<u>attack time</u>															
<u>Spurious and harmonics</u>															
<u>Audio response</u>															
<u>Audio distortion</u>															
<u>Residual hum & noise</u>														< -45 dB	
<u>Audio input level</u>															
<u>Remote keying</u>															
<u>External ref. option</u>															
<u>Alarms</u>															
DC Power Consumption (DC Amps)		R50		R71A		R150		R220		R350		R500		R800	
Idle		0.50		0.40		0.39		0.39		0.42		0.43		0.41	
50% vol.		0.55		0.48		0.48		0.48		0.52		0.51		0.51	
100% vol.		0.60		0.65		0.66		0.66		0.68		0.68		0.69	
Transmitter		Standard						50 Watt PA				100 Watt PA			
Tx Model	Idle	2W	5W	10W	15W	25W	35W	50W	50W	50W	75W	100W	100W	100W	100W
T50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.0	7.5	8.8	8.8	8.8	8.8
T70	0.3	1.6	2.2	3.0	4.0	4.7	4.4	6.0	6.0	n/a	n/a	n/a	n/a	n/a	n/a
T150	0.3	1.8	2.5	3.3	3.9	5.0	5.0	6.2	6.2	10.0	12.0	14.4	14.4	14.4	14.4
T220	0.2	2.3	3.2	4.2	5.0	6.6	n/a	n/a	n/a	n/a	12.8	15.0	15.0	15.0	15.0
T350	0.2	1.8	2.5	3.3	4.1	5.6	4.6	5.2	5.2	n/a	n/a	n/a	n/a	n/a	n/a
T500	0.2	2.3	3.2	4.2	5.0	6.6	4.4	4.8	4.8	12.0	15.0	17.6	17.6	17.6	17.6
T800	0.2	2.2	2.8	3.8	5.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Note: for a repeater or base station add Rx, Tx and PA currents for a total figure															
AC Power Input (AC Amps)															
Switch Mode Supplies		Quiescent						Tx On		PA On					
		Rx		Rx / Tx		Rx / Tx / PA	15W		25W		50W		100W		
SMPS12-2	13.8 Vdc	0.18		0.21		0.21	0.67		0.58		1.22		2.14		
SMPS28-1	28.0 Vdc	0.085		0.175		0.213	n/a		0.73		0.98		1.38		
Linear Supply		Quiescent						Tx On		PA On					
PS12	13.8 Vdc	Rx		Rx / Tx		Rx / Tx / PA	15W		25W		50W		100W		
		0.08		0.11		0.11	0.67		0.75		1.37		2.35		

Note: for a repeater or base station add Rx, Tx and PA currents for a total figure

AC Power Input (AC Amps)								
Switch Mode Supplies		Quiescent			Tx On	PA On		
		Rx	Rx / Tx	Rx / Tx / PA	15W	25W	50W	100W
SMPS12-2	13.8 Vdc	0.18	0.21	0.21	0.67	0.58	1.22	2.14
SMPS28-1	28.0 Vdc	0.085	0.175	0.213	n/a	0.73	0.98	1.38
Linear Supply		Quiescent			Tx On	PA On		
PS12	13.8 Vdc	Rx	Rx / Tx	Rx / Tx / PA	15W	25W	50W	100W
		0.08	0.11	0.11	0.67	0.75	1.37	2.35

We reserve the right to alter specifications or design without notice. In any special critical application please consult with the manufacturer.
This publication is issued to provide an outline of specifications of the products shown. It is not to form an order or contract or be regarded as a representation of the product unless agreed to in writing by the company.



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Eclipse System Overview - What is Eclipse?

Radio System Components

- Receivers
- Transmitters
- Power Amplifiers
- Power Supplies
- Interface and Control Modules

Configurable for a variety of applications

- Base Local/Remote
- Repeater
- Shared Repeater
- Trunked Systems
- Links
- Paging/RF Modem
- Satellite Receiver/Voting
- Simulcast

Module Features - Receivers

Frequencies

25-50 MHz (3 Bands)
66-88 MHz
136-174 MHz (2 Bands)
215-240 MHz
300-400 MHz (4 Bands)
400-520 MHz (4 Bands)
800-830 MHz
850-870 MHz
896-930 MHz

Channel Spacing 12.5, 15, 20, 25, 30 KHz

Frequency Steps 5/6.25 KHz, 10/12.5 KHz

Audio Response

Flat
750 uSec de-emphasis

Audio Output

Direct Coupled
600 Ohm Transformer
Sub-Audible
Monitor Loudspeaker

Squelch

Noise Squelch

Preset Range 6 – 26dB SINAD
Programmable fast turn off threshold

Carrier Squelch

Preset Range -120dBm to -70 dBm
Fast 10 mSec operation

Tone Squelch

TIA/EIA-603 CTCSS decoder
Programmable one tone per channel

Control I/O

Opto-coupled COS output
DC Loop
Free switch

External Mute input

Channel Select 0-99 BCD input

Module Features – Transmitters

Frequencies

25-50 MHz	(3Bands)
66-88 MHz	
136-174 MHz	(2 Bands)
215-240 MHz	
300-400 MHz	(4 Bands)
400-520 MHz	(4 Bands)
800-830 MHz	
850-870 MHz	
928-941 MHz	

Power 1-25 Watts

Channel Spacing 12.5, 15, 20, 25, 30 KHz

Frequency Steps 5/6.25 KHz, 10/12.5 KHz

Audio Response

Flat
750 uSec pre-emphasis

Audio Input

Direct Coupled
600 Ohm Transformer
Test Microphone
Sub Audible

Tone Squelch

TIA/EIA-603 Encoder
Programmable one tone per channel

Compatible Squelch Tail Elimination
TIA/EIA-603 reverse phase
Plus programmable No Tone Period

Control I/O

Direct PTT Input
DC Loop PTT input
T/R driver output
Channel Select 0-99 BCD input

Module Features - Power Amplifiers

Frequency		Power
25-50MHz	(3 Bands)	100W
66-88 MHz		50W
136-174 MHz	(2 Bands)	50W, 100W
215-240 MHz		100W
300-400 MHz	(4 Bands)	50W
400-520 MHz	(4 Bands)	50W, 100W
850-870 MHz	T.B.A.	

Automatic Level Control
Adjustable output power via internal potentiometer
DC Voltage Regulates Output Power
Temperature Protection
VSWR Protection

Power Supply Modules

LINEAR POWER SUPPLY

Model: PS12

15A/20A @ 13.8 Vdc Output
110-120 Vac or 220, 240 Vac 50-60 Hz Input
Four Eclipse Units Wide

SWITCH MODE POWER SUPPLY

Model: SMPS12-2

35A @ 13.8 Vdc Output
110-120 Vac or 220-240 Vac 50-60 Hz Input
Two Eclipse Units Wide

Model: SMPS28 for 50 Series modules

16A @ 28.0 Vdc Output
110-120 Vac or 220-240 Vac 50-60 Hz Input
Two Eclipse Units Wide

Ancillary Modules and Products

Control/ Interface Modules

Voting Tone Encoder - Mobicom Compatible

Key Tone Decoder - 2970 Hz

RTSC - Common Alarm Interface

T/R Switch

Solid State - 100W

25-240 MHz (6 Bands)

400-520 MHz (2 Bands)

Fan Unit

Cools Sub-Rack

May be turned ON by Tx activity

Turned ON by Tx T/R output (4)

Timed Shut Off - 3 Minutes

Battery Charger

Trickle Charge/ Float

Auto Change Over

Open collector output (Switching)

Eclipse Mounting Rack

Rack Width - 13UW wide,

Rack Height - 4U high,

Mounting - 19 inch, 4.55 Kg

A Eclipse module (e.g. Rx or Tx) = 2UW = 62mm (2 7/16 inch)

1UW = 31.75mm (1.25 inch) Width including clearance

Module Widths

1UW - Key Tone Decoder, Voting Tone Encoder

2UW - Rx, Tx, SMPS

3UW - Power Amplifier 50/100W VHF, 50W UHF

4UW - Linear Power Supply, Power Amplifier 100W HF

5UW - Power Amplifier 100W UHF

Connector Boards - Rx, Tx, PA/PS, Universal

Back Planes - RTSC Common alarms

Options - Battery Charger Change Over, Heart Beat Timer

System Configuration and Installation

Rack Installation

Minimum clearance above/below for cooling
1/2 RU for low power modules
1 RU for high power modules

Remove modules from rack for shipment

Rack Layout

Heavy modules (PA, PS) on end
PA modules close to PS and Tx
Keep Tx and Rx 75 mm from transformers and fans

