



**N1400 RFU**



**N1400 PSU**

## FEATURES

- **Fully qualified, field proven product** As used by many of the world's leading military forces in both land fixed and shipborne environments.
- **Extremely rugged design**
- **Modular connectorised design**
- **Alternative TWT options** Pre-configured operating parameters for different TWTs. Prime power efficient dual-stage collector TWT.
- **Cooling** Exceptionally powerful integral TWT fans.
- **Comprehensive control and monitoring features** Non-volatile date and time stamped alarm log showing all events in chronological order, including recording of all prime power outages and built-in self-test diagnostics.
- **Redundant control and phase combining** Offered in many system configurations, providing turnkey redundancy and combined systems up to 8 kW.

## ELECTRICAL

Prime power . . . . . 10 kVA max  
 Prime power voltage options:  
 240 V/415 V 3-phase 4-wire  $\pm 10\%$  + earth  
 220 V/380 V 3-phase 4-wire  $\pm 10\%$  + earth  
 440 V 3-phase 3-wire  $\pm 10\%$  + earth  
 Power factor . . . . . 0.95  
 . . . . . 0.92 min  
 Voltages . . . . . 380 V  
 . . . . . 415 V  
 . . . . . 440 V  
 Frequency (nominal) . . . . . 50/60 Hz  $\pm 5\%$

## TYPICAL DATA

Frequency . . . . . 7.9 to 8.4 GHz  
 Output power at output flange:  
 for 2.25 kW TWT . . . . . 1900 W  
 for 2.5 kW TWT . . . . . 2200 W  
 Gain at rated power . . . . . 75 dB

## Mechanical

Dimensions:  
 RF unit:  
 length . . . . . 610 mm  
 width . . . . . 482 mm  
 height . . . . . 312 mm (7U)  
 PS unit:  
 length . . . . . 610 mm  
 width . . . . . 482 mm  
 height . . . . . 312 mm (7U)  
 Weight:  
 RF unit . . . . . 64 kg  
 PS unit . . . . . 67.5 kg

**Cooling** . . . . . integral forced-air

## Variants

Variants are available which include a choice of options. These are shown on page 2, along with details of the system capabilities of the N1400 Series.

## TEST PERFORMANCE

Frequency . . . . .	7.9 to 8.4	GHz
Typical output power (at flange) . . . . .	63.3	dBm max
Gain:		
at rated power . . . . .	75	dB typ.
at P <sub>SAT</sub> - 10 dB . . . . .	80	dB min
stability:		
constant temperature . . . . .	±0.25	dB max
over 20 °C . . . . .	±0.4	dB max
over 10 °C . . . . .	±0.25	dB max
variation (ssg) . . . . .	±0.75 dB/120 MHz	
	±0.5 dB/40 MHz	
variation (ssg) full band . . . . .	±1.0	dB max
SSG in any 10 MHz:		
bandwidth . . . . .	±0.25	dB max
slope (1 kW or less) . . . . .	±0.04	dB/MHz
Input VSWR (non-operating) . . . . .	1:5:1	max
Load VSWR:		
operate . . . . .	2:0:1	max
no damage . . . . .	infinite	
Input return loss . . . . .	1.25:1	
	19	dB
Output return loss . . . . .	1.20:1	
	20.8	dB
Harmonic output at rated power . . . . .	-70	dBc max
AM to PM conversion:		
at rated output power . . . . .	6	°/dB max
at 10 dB below rated output . . . . .	2	°/dB max
Third-order intermodulation products:		
at -1 dB back-off . . . . .	-10.0	dBc
at -3 dB back-off . . . . .	-15.0	dBc
Harmonic output at rated power . . . . .	-70	dBc max

## CONNECTORS

RF output . . . . .	W/G CPR 112G
RF input . . . . .	coaxial N-type female
Prime power . . . . .	Harting Han Q510
Serial interface . . . . .	9-way D-type RS232, 422, 485
User interface control . . . . .	37-way D-type

## ENVIRONMENTAL

For operations outside these parameters, contact e2v technologies for guidance.

Operating temperature . . . . .	-20 to +52 °C
Relative humidity . . . . .	0 - 95% RH, non-condensing
Storage temperature . . . . .	-40 to +70 °C
Operating altitude . . . . .	3000 m
(Normal adiabatic derating applies. Consult E2V Technologies for categorisation).	
Electromagnetic compatibility . . . . .	MIL-STD 461E
Safety . . . . .	low voltage directive 73/23/EEC

## SYSTEM CAPABILITIES

- 1:1 redundancy
- 4 kW phase combined
- 8 kW phase combined

The above systems are provided with a range of standard and optional features as summarised below:

1. Full height standard 19-inch rack, depth dependent upon system configuration.
2. Complete RF system with waveguide interfaces.
3. Comprehensive local system C & M facility.
4. Remote control unit.
5. Input splitter unit, allowing local gain control and access to RF test and monitoring facilities. Includes phase balancing controls for combined system.
6. System level power monitoring.
7. Traffic/Load switch; includes RF load.
8. Roof or remote mountable RF loads.
9. Pressure windows and special customer interfaces.
10. Mains distribution and auxiliary outlet sockets.
11. Rack cooling including vented roof.
12. Range of key service interface positions; floor, roof, rear or side.
13. Emergency stop facility.

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