



Hardware & Installation Manual

C1601S1ULA- 22290

16-way L-band Combiner
With Redundant Amplifier

Satellite RF Engineering & Custom Build

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RoHS Compliance

This equipment is produced in compliance with Directive 2002/95/EC of the European Parliament and of the council of 27 January 2003 on the restriction and use of certain hazardous substances in electrical and electronics equipment (RoHS Directives).



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1. General Description

This unit consists of a single 16-way active combiner, featuring a cold-standby redundant amplifier, housed in a 1U shelf. It is powered by 24Vdc.

The specified frequency range of operation is 850-2150 MHz with a nominal mid-band gain of 0dB. All RF connections are made to the connectors on the rear panel. Inputs and outputs are both dc and 10MHz blocked.

1.1. Front panel

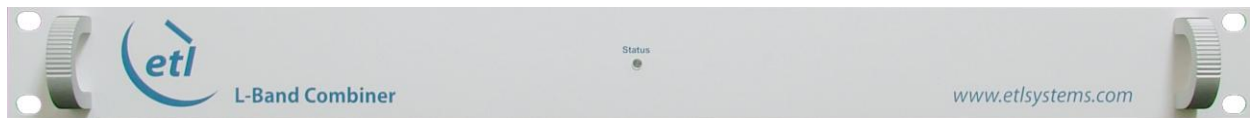


Figure 1 - Front view

Contained within the front panel is a single tricolour LED labelled STATUS. This shows the operating mode of the redundant amplifier.

Green	Auto mode: Main path selected, all OK.
Red	Auto mode: Standby Path selected, a fault condition has been detected.
Amber – single flash	Manual mode: Main path selected.
Amber – double flash	Manual mode: Standby Path selected.

1.2. Rear panel



Figure 2 - Rear View

1.2.1. RF Connections

The 16 ports and the common are on the left side as viewed from the rear. All the connectors are female. 50ohm BNC and 75 ohm BNC or F-type connectors are available as ordered.

1.2.2. DC IN

A single 4 pin XLR panel plug is provided to power the unit.

Pin	Function
1	+24V dc
2	+24V dc
3	0V
4	0V

Figure 3 – DC Connector

1.2.3. GND Stud

This stud may be used to connect an auxiliary ground (earth) to the unit to supplement the ground pin on the IEC socket and provide a permanent connection.

1.2.4. Alarms

A 9-way D-type plug allows connection to a normally closed alarm contact. The contact will open on a fault condition. Only 2 pins are used.

Pin	Function
1	Summary Alarm: Common
4	Summary Alarm: Good

Figure 4 – Alarm Connector

2. Technical Specification

Parameter	Specification	Comments
Input	75Ω, F-type connectors (female)	10MHz / DC blocked (40 dB typical, 25 dB minimum 10MHz rejection)
Output	75Ω, F -type connectors (female)	10MHz / DC blocked (40 dB typical, 25 dB minimum 10MHz rejection)
Capacity	16 :1 combiner	
Frequency Range	850-2150 MHz	
Gain	0 dB ±2 dB	Nominal, mean across band
Flatness	±1.5 dB	Full band
	±0.75 dB	over any 36 MHz
1 dB Compression	0 dBm	Output power level
Noise Figure	23 dB	
Input Return Loss	10 dB	
Output Return Loss	10 dB	
LNB Power	NONE	
10 MHz injection	NONE	
Amp Redundancy	1-to-1 redundant	Cold redundancy & current sensing (auto switchover)
Power	24 V DC	Single 4 pin XLR plug on rear.
PSU Redundancy	N/A	
Hot Swap PSU	N/A	
Alarms	Dry contact and Ethernet RJ45 connector to show alarm status for amplifier failure in redundant amplifier modules	Tricolour LED at front panel. Connectors at rear panel. SNMP and dry contact alarms.
Weight	8kg	Estimate
Dimensions	1U high x 200mm deep x 19" wide	Depth to be confirmed.

Table 1: Technical Specifications for 16-way Combiner

Parameter	Value	Comment
Input RF power	+16dBm	Total incident RF power on any RF port.
DC Voltage	50V	On all DC blocked RF ports.
Operating temperature	0 to 45°C	For indoor use only.
Storage Temperature	-20°C to +75°C	
Humidity	90%	Non-condensing.
Operation beyond these limits may cause instantaneous and permanent damage. For reliable long term operation do not exceed the parameters given in the general specification table above.		

Table 1 - Absolute Max Ratings