ETL Systems
New technologies
in RF distribution

Model Number:
22304-COM41-Gx-Sy

32 x 4-way Active L-band Combiner Shelf

For Matrix Systems

The unit is designed to link ETL's range of matrices to make bigger matrix systems, while saving rack space and offering excellent RF performance.

Typical applications:

- Linking RF Matrices in expanding satellite teleports.
- Can be used for high density RF distribution chassis where rack space is limited
- As a replacement for non hot-swap passive systems to improve system design.

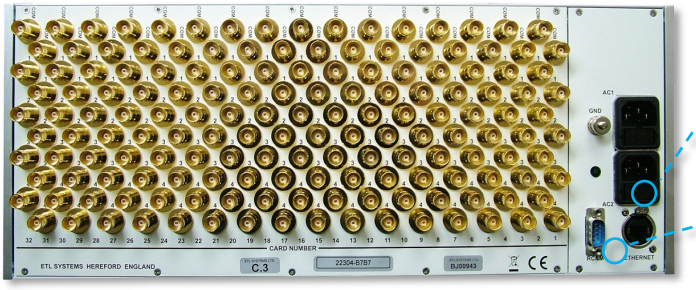
Fixed gain & Fixed slope compensation factory set to balance input signals

Compact 32 x 4-way combiner modules housed in a 3U high , 19", rack mountable chassis

Resilience from hot swap combiner modules, hot swap dual redundant power supplies and hot swap CPUs and hot-swap combiner cards

Local monitoring via status LEDs on individual modules

850 - 2150 MHz operating frequency range.



Remote control & monitoring via RS232 serial & RJ45 Ethernet port with SNMP & web browser interface

Dry contact alarm port & serial communications for amplifier & power supply status

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Technical specifications and operating parameters

RF Parameters					
22304 Module slots used		Each combiner takes 1 slot. 32 slots available in chassis.			
Capacity		4-way combiner			
Frequency Range		850-2150 MHz (L-Band) *See application note below for use above 2150MHz.			
Gain		x± 1 dB		x=0 to 10 dB. Nominal at 2150 MHz	
Slope		y dB positive slope		y=0 to +6 dB. Typical slope across 850-2150 MHz.	
RF Connectors		50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type
Flatness	850-2150MHz	±0.75 dB	±0.75 dB	±0.75 dB	±0.8 dB
	Any 36MHz	±0.45 dB	±0.45 dB	±0.45 dB	±0.5 dB
Input Return Loss	Typical	18 dB	14 dB	14 dB	12 dB
	Minimum	14 dB	10 dB	10 dB	8 dB
Output Return Loss	Typical	18 dB	14 dB	14 dB	12 dB
	Minimum	14 dB	10 dB	10 dB	8 dB
Isolation	Card to Card	65 dB			
Noise Figure		20 dB Typical			
1dB GCP		+13 dBm 1 dB Gain Compression point, output power			
Input RF Power		+ 16 dBm Absolute maximum			

***Extended Frequency Use Application Note:**
These cards may be used for frequencies above 2150MHz with little degradation to the return loss performance up to 3000MHz; but note that the insertion gain typically plateaus at 2150MHz (the slope pivot point). This lack of slope compensation is likely acceptable for short cable runs (<2m). Please contact ETL Systems for further information if required.

Environmental	
Operating temperature	0 to 45˚C
Location	Indoor use only
Storage temperature	-20˚C to +75˚C
Humidity	20 to 90% non-condensing

Power		
PSU Power	85-264Vac 50/60Hz	Fused 2A, Dual IEC
AC Consumption	35W	
Power Consumption	475 mW per card	
BUC Power	None	
PSU	Dual redundant	Diode OR
Hot-swap PSU	Yes	
RF Monitoring	None	

System Control		
Local Monitoring	Via card status LEDs	
Remote Monitoring	Via RS232 serial port & RJ45 Ethernet port 10/100 Base T. TCP/IP, SNMP & Web browser interface.	
Alarms	LED and via CPU in chassis	Also amplifier status monitoring via HMI when used in a switch matrix system

Physical	
Dimensions	4U high x 250mm deep x 19" wide
Weight	11 kg
Colour	RAL9003-White (semi-matte)

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.