ETL Systems
Excelling in RF Engineering

Model Number:
HWK-15

Hawk Series
Quad 4 x 4 Extended L-band Matrix For Uplink & Downlink applications

Typical applications:
- Ka/HTS gateway terminals
- LEO gateways
- Small teleports
- Uplink and downlink applications
- Oil & Gas
- Deployable VSAT terminals

The 1U Hawk Matrix has capacity for up to 4 4x4 matrix modules – which can be combining (fan-in) or distributive (fan-out) – for uplink and downlink applications. The Hawk can be fitted with any combination of modules depending on application, but is ideally suited for smaller LEO gateways with small number of modems, where modem redundancy is required, smaller number of modems and antennas and remotely accessed teleports.

Compact housed in a 1U high chassis

Cost effective solution whilst maintaining excellent RF performance

500 - 3150 MHz operating frequency range for Ka-band & HTS applications

Resilience from dual redundant power supplies

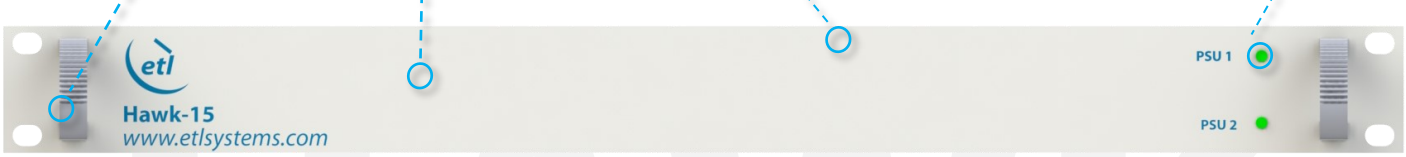
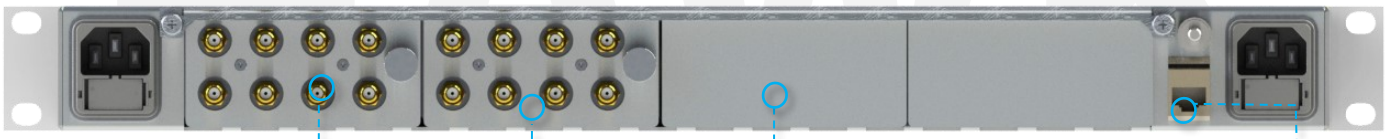


Image for indication only— Chassis may vary depending upon requirements.



Flexible Module Configurations providing routing solutions with 4 x 4 distribution modules, 4 x 4 combining modules or a combination of distributive and combining modules

Capacity up to 4 matrix modules in a 1U high chassis

Field serviceable & replaceable RF Matrix modules

Remote control & monitoring via RJ45 Ethernet port with HTTPS & SNMPv3

ETL Systems

Excelling in RF Engineering

Model Number: HWK-15

Preliminary technical specifications and operating parameters

RF Parameters					
Routing		**Distributive**			
Frequency Range		500 to 3150 MHz (Extended L-band)			
Capacity		Up to 4 Matrix Modules– each 4 x Input and 4 x Output.			
Switching Time		< 50ms (From receipt of a command to implementation of path change)			
RF Connectors		50 Ω SMA	50 Ω BNC	75 Ω BNC	75 Ω F-type
Gain (dB) Typ, mean across band		0±1	0±1	0±1	0±1
Gain Flatness (dB)	850-2450 MHz	±0.5	±0.5	±1.0	±1.0
	500-3150 MHz	±1.0	±1.0	±1.5	±1.5
Any 36MHz	< 2150 MHz	±0.15	±0.15	±0.3	±0.3
	> 2150 MHz	±0.25	±0.25	±0.5	±0.5
Input Return Loss (dB)	Typ.	14	14	12	12
	Min	12	12	10	10
Output Return Loss (dB)	Typ.	14	14	12	12
	Min	12	12	10	10
Isolation (dB) Min. between any two ports	Input-Input	75 dB			
	Output-Output	75 dB			
	Input-Output	60 < 2450 MHz			
	Input-Output	55 > 2450 MHz			
Noise Figure (dB)		Typ. 6 dB, Max. 8 dB, with one input routed to one output			
1dB GCP (dBm) Output power, Typical.	<2450 MHz	+3 dBm			
	>2450 MHz	+0 dBm			
OIP3 (dBm), Typical.	<2450 MHz	+ 18 dBm			
	>2450 MHz	+ 15 dBm			
OIP2 (dBm) ,Typical.		+ 30 dBm			
Group Delay		<1.0ns			
PSU Redundancy		Dual redundant and alarmed Diode OR.			
Matrix Module		Distributive: Field replaceable			
System Control					
Remote Control & Monitoring		Ethernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100/1000BaseTx. ETL TCP/IP, SNMP & Web browser interface.			
Physical & Environment					
Dimensions		TBC			
Weight / Colour		<10 kg / RAL9003—White (Semi-matte)			
Temperature		Operating: 0 to 45˚C / Storage: -20˚C to +75˚C			
Location		Indoor use only			
Humidity		20 to 90% non-condensing			
Altitude		10,000 feet AMSL (Operational) 30,000 feet AMSL (Storage) *Above Mean Sea Level*			

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.
Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

ETL SYSTEMS LIMITED
Coldwell Radio Station
Madley
Hereford
England HR2 9NE

TELEPHONE
+44 (0)1981 259020

EMAIL
info@etlsystems.com

FACSIMILE
+44 (0)1981 259021

WEB
www.etlsystems.com

ETL Systems

Excelling in RF Engineering

Model Number: HWK-15

Preliminary technical specifications and operating parameters

RF Parameters					
Routing		**Combining**			
Frequency Range		500 to 3150 MHz (Extended L-band)			
Capacity		Up to 4 Matrix Modules– each 4 x Input and 4 x Output.			
Switching Time		< 50ms (From receipt of a command to implementation of path change)			
RF Connectors		50 Ω SMA	50 Ω BNC	75 Ω BNC	75 Ω F-type
Gain (dB) Typ, mean across band		0±1	0±1	0±1	0±1
Gain Flatness (dB)	850-2450 MHz	±0.5	±0.5	±1.0	±1.0
	500-3150 MHz	±1.0	±1.0	±1.5	±1.5
Any 36MHz	< 2150 MHz	±0.15	±0.15	±0.3	±0.3
	> 2150 MHz	±0.25	±0.25	±0.5	±0.5
Input Return Loss (dB)	Typ.	14	14	12	12
	Min	12	12	10	10
Output Return Loss (dB)	Typ.	14	14	12	12
	Min	12	12	10	10
Isolation (dB) Min. between any two ports	Input-Input	75 dB			
	Output-Output	75 dB			
	Input-Output	60 < 2450 MHz			
	Input-Output	55 > 2450 MHz			
Noise Figure (dB)		Typ. 18 dB, with one input routed to one output			
1dB GCP (dBm) Output power, Typical.	<2450 MHz	+15 MHz			
	>2450 MHz	+12 MHz			
OIP3 (dBm), Typical.	<2450 MHz	+ 35 dBm			
	>2450 MHz	+ 30 dBm			
OIP2 (dBm), Typical.		+ 50 dBm			
Group Delay		<1.0ns			
PSU Redundancy		Dual redundant and alarmed Diode OR.			
Matrix Module		Combining: Field replaceable			

System Control	
Remote Control & Monitoring	Ethernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100/1000BaseTx. ETL TCP/IP, SNMP & Web browser interface.

Physical & Environment	
Dimensions	TBC
Weight / Colour	<10 kg / RAL9003—White (Semi-matte)
Temperature	Operating: 0 to 45˚C / Storage: -20˚C to +75˚C
Location	Indoor use only
Humidity	20 to 90% non-condensing
Altitude	10,000 feet AMSL (Operational) 30,000 feet AMSL (Storage) *Above Mean Sea Level*