



Hawk Series 4x4 Extended L-band Matrix

for Uplink and Downlink applications

The 1U Genus chassis has capacity for up to 4 off 4x4 Hawk matrix modules – which can be combining (fan-in) or distributive (fan-out) or FIFO (fan-in, fan-out) – for uplink and downlink applications. The Genus chassis 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. Other module types from the Genus range such as Frequency Converters or RF over Fibre can also be fitted into the chassis.





HWK-G1S-15-F44-x5x5

Matrix Module FIFO: Field replaceable System Control Remote Control & Monitoring Ethernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100 Base Tx. ETL TCP/IP, SNMP & We browser interface. Via parent chassis. Physical & Environmental Dimensions 4 x Genus 1U slots for SMA Connectors 6 x Genus 1U slots for TNC Connector Weight/Colour <0.5 kg / RAL9003—White (Semi-matte)			RF Parameters		
Capacity Up to 4 matrix modules in 1U parent chassis - each 4 x input and 4 x Output. Switching Time < 50ms (From receipt of a command to implementation of path change)	Routing		FIFO (fan-in fan-out)		
Svitching Time Svitching Time Svitchin	Frequency Range		500 to 2850MHz (Extended L-band)		
Power Consumption <sw< td=""> RF Connectors 500 SMA 500 TNC Gain (dB) Typ, mean across band 0±1 0±1 Gain Flatness (dB) 850 - 2450MHz ±1.0 ±1.6 Sup 3150MHz ±1.25 ±1.6 Any 36MHz 500 - 3150MHz ±0.25 ±0.25 Any 36MHz 500 - 3150MHz ±0.25 ±0.25 Input Return Loss Typ. 14 12 (db) 10 7.5 0 Output Return Loss Typ. 14 12 (db) 10 7.5 0 Min. 10 7.5 0 Solation (dB) Min. pout-input <2150 MHz 60 dB, >2150 MHz 50 dB 10 between any 2 ports pout-Output <2150 MHz 50 dB, >2150 MHz 50 dB 10 Noise Figure (dB) Maximum 15 dB, with one input routbut do ne output to do ne output 1dB GCP (dBm) Maximum 15 dB, with one input routbut do ne output to do ne output 1dB GCP (dBm), Min. 2450 MHz +20 dBm OIP3 (dBm), Typ. 2450 MHz +20 dBm OIP3 (dBm), Min. 2450 MHz +20 dBm SU Redundancy Dual redundant and alarmed. Diode OR. (See parent chassis datasheet for more details Matrix Mo</sw<>					
RF Connectors SOΩ SMA SOΩ TNC Gain (dB) Typ., mean across band 0±1 0±1 Gain Flatness (dB) 850 - 2450MHz ±1.0 ±1.6 Gain Flatness (dB) 850 - 2450MHz ±0.25 ±0.25 Any 36MHz ±0.25 ±0.25 S00 - 3150MHz ±0.5 ±0.25 Input Return Loss Typ. 14 12 (db) Min. 10 7.5 Output Return Loss Typ. 14 12 (dB) Min. 10 7.5 Solation (dB) Min. between any 2 ports Output-Pout <2150 MHz 60 dB, >2150 MHz 50 dB Solation (dB) Min. between any 2 ports Output-Output <2150 MHz 60 dB, >2150 MHz 50 dB Noise Figure (dB) Maximum 15 dB, with one input routed to one output 1dB GCP (dBm) Minimum +5 dBm, output power OIP3 (dBm), Typ. <2450 MHz	Switching Time		< 50ms (From receipt of a command to implementation of path change)		
Gain (dB) Typ, mean across band 0±1 0±1 Gain Flatness (dB) 850 - 2450MHz ±1.0 ±1.6 Gain Flatness (dB) 500 - 3150MHz ±1.25 ±1.6 Any 36MHz ±50 - 2450MHz ±0.25 ±0.25 Input Return Loss Typ. 14 12 (db) Typ. 14 12 Min. 10 7.5 0 Output Return Loss Typ. 14 12 (db) Min. 10 7.5 Solation (dB) Min. Input-Input <2150 MHz 60 dB, >2150 MHz 50 dB between any 2 ports Output-Output <2150 MHz 60 dB, >2150 MHz 50 dB Noise Figure (dB) Maximum 15 dB, with one input rout=d to one output 1dB GCP (dBm) Minimum +5 dBm, output power OIP3 (dBm), Typ. 2450 MHz +20 dBm OIP3 (dBm), Min. 2450 MHz +26 dBm OIP2 (dBm), Min. 2450 MHz +26 dBm Solation (dB Min. 2450 MHz +26 dBm OIP2 (dBm), Min. 2450 MHz					
Gain Flatness (dB) 850 - 2450MHz ±1.0 ±1.6 Gain Flatness (dB) 500 - 3150MHz ±1.25 ±1.6 Any 36MHz ±0.25 ±0.25 Soo - 3150MHz ±0.5 ±0.25 Input Return Loss 17p. 14 12 (db) Min. 10 7.5 Output Return Loss Typ. 14 12 (db) Min. 10 7.5 Output Return Loss Typ. 14 12 (db) Min. 10 7.5 Solation (dB) Min. between any 2 ports Output-Output <2150 MHz 60 dB, >2150 MHz 50 dB Noise Figure (dB) Maximum 15 dB, with one input routet to one output 14 18 GCP (dBm), Output-Output <2450 MHz	RF Connectors		50Ω SMA	50Ω TNC	
Gain Flatness (dB) 500 - 3150MHz ±1.25 ±1.6 Any 36MHz ±0.25 ±0.25 ±0.25 Input Return Loss Typ. 14 12 (db) Min. 10 7.5 Output Return Loss Typ. 14 12 (db) Min. 10 7.5 Output Return Loss Typ. 14 12 (db) Min. 10 7.5 Solation (dB) Min. Duput-Input <2150 MHz 60 dB, >2150 MHz 50dB 0utput-Output Isolation (dB) Min. Output-Output <2150 MHz 50 dB	Gain (dB) Typ., mean across band		0±1	0±1	
Any 36MHz500 - 3150MHz ± 1.25 ± 1.6 Any 36MHz ± 0.25 ± 0.25 ± 0.25 Input Return Loss (db)Typ.1412Min.107.5Output Return Loss (dB)Typ.1412Output Return Loss (dB)Typ.1412Solation (dB) Min. between any 2 portsInput-Input<2150 MHz 60 dB, >2150 MHz 50 dBSolation (dB) Min. between any 2 portsInput-Output<2150 MHz 60 dB, >2150 MHz 50 dBNoise Figure (dB)Maximum15 dB, with one input routed to one output1dB GCP (dBm) Output power, Typ.Minimum15 dB, with one input routed to one output1dB GCP (dBm) Output power, Typ.2450 MHz $\pm 20 \text{ dBm}$ OIP3 (dBm), Typ.2450 MHz $\pm 20 \text{ dBm}$ 2450 MHz $\pm 2450 \text{ MHz}$ $\pm 26 \text{ dBm}$ OIP2 (dBm), Min. PSU Redundancy 2450 MHz $\pm 16 \text{ dBm}$ System Control Marity ModuleTo all and all armed. Diode OR. (See parent chassis datasheet for more details FIFO: Field replaceablePhysical & EnvironmentalPhysical & EnvironmentalPhysica	Gain Flatness (dB)	850 - 2450MHz	±1.0	±1.6	
Any 36MHz $500 - 3150MHz$ ± 0.5 ± 0.25 Input Return Loss (db)Typ.1412Output Return Loss (dB)Typ.1412Output Return Loss (dB)Typ.1412Solation (dB) Min. between any 2 portsInput-Input <2150 MHz 60 dB, >2150 MHz 50dBInput-Output <2150 MHz 60 dB, >2150 MHz 50dBNoise Figure (dB) Output Output <2150 MHz 55 dB, >2150 MHz 50dBNoise Figure (dB) Output Power, Typ.Minimum $+5$ dBm, output powerOIP3 (dBm) OUP2 (dBm), Typ. <2450 MHz $+20$ dBm < 2450 MHz $+26$ dBm $+26$ dBm < 1.0 ns $FIFO:$ Field replaceable $< System Control$ $S SNMP3, 10BaseT/100$ Base Tx, ETL TCP/IP, SNMP & We browser interface. Via parent chassis $< Marrix Module$ $4 x$ Genus 1U slots for SMA Connectors $6 x$ Genus 1U slots for TNC Connector $< Weight/Colour$ $< 0.5 kg / RAL9003-White (Semi-matte)$ $< Cos kg / RAL9003-White (Semi-matte)$ $< 0.5 kg / RAL9003-White (Semi-matte)$ $< 0.6 kg / RAL9003-White (Semi-matte)$ $< 0.6 kg / RAL9003-White (Semi-matte)$ $< 0.7 kg / RAL9003-White (Semi-matte)$ $< 0.6 kg / RAL9003-White (Semi-matte)$ $< 0.7 kg / RAL9003-White ($		500 - 3150MHz	±1.25	±1.6	
Sub - 3150MHz ± 0.5 ± 0.25 Input Return Loss (db)Typ.1412Min.107.5Output Return Loss (dB)Typ.1412Min.107.5Isolation (dB) Min. between any 2 portsMaximum107.5Isolation (dB) Min. between any 2 portsMaximum<2150 MHz 60 dB, >2150 MHz 50 dBNoise Figure (dB) Output-Output<2150 MHz 50 dB, value to one output	Any 36MHz	850 - 2450MHz	±0.25	±0.25	
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(db) Min. 10 7.5 Output Return Loss (dB) Typ. 14 12 Min. 10 7.5 Input-Input <2150 MHz 60 dB, >2150 MHz 50dB Joutput-Output <2150 MHz 60 dB, >2150 MHz 50dB Noise Figure (dB) Maximum 15 dB, with one input routed to one output 1dB GCP (dBm) Output Power, Typ. Minimum +5 dBm, output power 0IP3 (dBm), Typ. 2450 MHz +20 dBm 2450 MHz +20 dBm OIP3 (dBm), Min. 2450 MHz +20 dBm 2450 MHz +20 dBm OIP2 (dBm), Min. 2450 MHz +20 dBm 2450 MHz +18 dBm OIP2 (dBm), Min. 2450 MHz +26 dBm Solution column *2450 MHz +20 dBm Solution column *2450 MHz +20 dBm OIP2 (dBm), Min. 2450 MHz +26 dBm Solution column *2450 MHz *2450 MHz Solution column FIFC: Field replaceable System Control Sy		Тур.	14	12	
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(dB)Min.107.5Input-Input<2150 MHz 60 dB, >2150 MHz 50 dBIsolation (dB) Min. between any 2 portsInput-Output<2150 MHz 60 dB, >2150 MHz 50 dBNoise Figure (dB)Maximum<2150 MHz 55 dB, >2150 MHz 50 dBNoise Figure (dB)Maximum15 dB, with one input routed to one output1dB GCP (dBm) Output power, Typ.Minimum+5 dBm, output power0IP3 (dBm), Typ.<2450 MHz		Тур.	14	12	
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Output power, Typ. Minimum +5 dBm, Output power OIP3 (dBm), Typ. <2450 MHz	Noise Figure (dB)	Maximum			
OIP3 (dBm), Typ. >2450 MHz +18 dBm OIP2 (dBm), Min. <2450 MHz		Minimum	+5 dBm, output power		
>2450 MHz +18 dBm OIP2 (dBm), Min. +34 dBm >2450 MHz +26 dBm Group Delay <1.0 ns		<2450 MHz	+20 dBm		
OIP2 (dBm), Min. >2450 MHz +26 dBm Group Delay <1.0 ns		>2450 MHz	+18 dBm		
Server	OIP2 (dBm), Min.	<2450 MHz	+34 dBm		
PSU Redundancy Dual redundant and alarmed. Diode OR. (See parent chassis datasheet for more details Matrix Module FIFO: Field replaceable System Control Remote Control & Monitoring Ethernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100 Base Tx. ETL TCP/IP, SNMP & We browser interface. Via parent chassis. Physical & Environmental Operating 6 x Genus 1U slots for TNC Connector Weight/Colour <0.5 kg / RAL9003—White (Semi-matte)		>2450 MHz	+26 dBm		
Matrix Module FIFO: Field replaceable System Control Remote Control & Monitoring Ethernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100 Base Tx. ETL TCP/IP, SNMP & We browser interface. Via parent chassis. Physical & Environmental Dimensions 4 x Genus 1U slots for SMA Connectors 6 x Genus 1U slots for TNC Connector Weight/Colour <0.5 kg / RAL9003—White (Semi-matte)	Group Delay		<1.0 ns		
System ControlRemote Control & MonitoringEthernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100 Base Tx. ETL TCP/IP, SNMP & We browser interface. Via parent chassis.Physical & EnvironmentalDimensions4 x Genus 1U slots for SMA Connectors6 x Genus 1U slots for TNC ConnectorWeight/Colour<0.5 kg / RAL9003—White (Semi-matte)	PSU Redundancy		Dual redundant and alarmed. Diode OR. (See parent chassis datasheet for more details)		
Remote Control & MonitoringEthernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100 Base Tx. ETL TCP/IP, SNMP & We browser interface. Via parent chassis.Physical & EnvironmentalDimensions4 x Genus 1U slots for SMA Connectors6 x Genus 1U slots for TNC ConnectorWeight/Colour<0.5 kg / RAL9003—White (Semi-matte)	Matrix Module		FIFO: Field replaceable		
Remote Control & Monitoring browser interface. Via parent chassis. Physical & Environmental Dimensions 4 x Genus 1U slots for SMA Connectors 6 x Genus 1U slots for TNC Connector Weight/Colour <0.5 kg / RAL9003—White (Semi-matte)			System Control		
Dimensions4 x Genus 1U slots for SMA Connectors6 x Genus 1U slots for TNC ConnectorWeight/Colour<0.5 kg / RAL9003—White (Semi-matte)	Remote Control & Monitoring		Ethernet via RJ45 with HTTPS & SNMPv3, 10BaseT/100 Base Tx. ETL TCP/IP, SNMP & Web browser interface. Via parent chassis.		
Weight/Colour<0.5 kg / RAL9003—White (Semi-matte)TemperatureOperating: 0 to 45°C / Storage: -20°C to +75°CLocationIndoor use onlyHumidity20 to 90% non-condensing			Physical & Environmental		
TemperatureOperating: 0 to 45°C / Storage: -20°C to +75°CLocationIndoor use onlyHumidity20 to 90% non-condensing	Dimensions		4 x Genus 1U slots for SMA Connectors	6 x Genus 1U slots for TNC Connectors	
Location Indoor use only Humidity 20 to 90% non-condensing	Weight/Colour		<0.5 kg / RAL9003—White (Semi-matte)		
Humidity 20 to 90% non-condensing	Temperature		Operating: 0 to 45°C / Storage: -20°C to +75°C		
	Location		Indoor use only		
Altitude 2000 fast AMEL (Operational) 8 000 fast AMEL (Storage) Above Mean Carl and	Humidity		20 to 90% non-condensing		
Pittude 2,000 leet ANISE (Operational) 6,000 leet ANISE (Storage) Above mean sea Level	Altitude		2,000 feet AMSL (Operational) 8,000 feet AMSL (Storage) Above Mean Sea Level		
Spec. Version 1.2	Spec. Version		1.2		

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.