HQA Amplifier Series

Variable gain L-Band Line Amplifier (Single & Quad)

The HQA series represents high dynamic and professional L-Band line amplifiers with variable gain control range of 0 to 30dB or 10 to 40dB. It combines the stand-alone HQA101C or the HQA104C 1RU/19" rack mount chassis together with the corresponding amplifier modules HQA2535M or HQA3040M.

The HQA2535M amplifier module allows variable gain control of 0 to 25dB (standard gain mode) or 5 to 35dB (high gain mode) while the HQA3040M amplifier module allows variable gain control of 0 to 30dB (standard gain mode) or 10 to 40dB (high gain mode) so to achieve best performance within the network. The HQA101C chassis can be equipped with one of the available HQA amplifier modules while the HQA104C chassis can hold four amplifier modules, each amplifier module operates independently and is hot-swappable.

The HQA series amplifiers additionally feature 1:1 redundant dual power supply (hot-swappable), variable gain (MGC/AGC), slope equalization, RF power monitoring, switchable LNB-supply and a 10MHz external reference signal input port.

An integrated RF power detector measures the RF output power with 70dB dynamic range for each amplifier individually. The HQA are equipped with a front panel LC-Display/keypads for user friendly local configuration and status LED´s indicating amplifier and power supply status.

Remote configuration and monitoring is available via a rear side Ethernet or RS232/485 Interface (WebGUI, SNMP) while it can also be integrated into a management and control system (NMS or M&C) via SNMP. These high quality amplifiers provide various advantageous functionalities, superior RF performance and excellent signal quality. It is perfectly suited for versatile application areas e.g for compensation of passive RF distribution devices and cable loss.

The HQA series is an ideal fit for any RF distribution infrastructure where accurate RF power, highest stability and availability is necessary such as Teleports, Satellite Earth Stations, Broadcast facilities or Cable/IPTV headend stations.

FEATURES & BENEFITS

- Space saving 1RU/19" rack mount design
- Single or Quad line amplifier population per chassis
- HQA2535M amplifier module with variable gain control range 0 to 25dB (standard gain mode) or 5 to 35dB (high gain mode)
- HQA3040M amplifier module with variable gain control range 0 to 30dB (standard gain mode) or 10 to 40dB (high gain mode)
- MGC (Manual Gain Control) or AGC (Automatic Gain Control)
- Supports slope-equalization 0 to 7dB, 1dB steps
- Equipped with front side monitoring port (-20dB)
- RF power monitoring (input/output) for each amplifier individually
- Threshold alarm function with switchable output limiter
- Switchable LNB-supply (13/15/18V, 22kHz, 400mA) with LNB current monitoring and alarm shut-off
- 10MHz external reference signal input, rear side 50Ohm SMA(f)
- Hot-swappable amplifier modules
- Local access & configuration via front side LC-Display/keypads
- Front side status LED´s for amplifier & power supply status
- 1:1 redundant dual power supply (hot-swappable)
- Remote configuration & monitoring via Ethernet-Interface, RS232/485 (WebGUI, SNMPv2c)

TECHNICAL SPECIFICATINOS

AMPLIFIER CHASSIS	HQA101C-50/-75	HQA104C-50/-75
Dimensions:	1RU/19” rack mount	1RU/19” rack mount
Power Supply:	85 – 230V, 50/60Hz, 1:1 redundant (hot-swap)	85 – 230V, 50/60Hz, 1:1 redundant (hot-swap)
Power Consumption:	<10W	<15W
Amplifier Module Slots:	1 slot (HQA101C)	4 slot (HQA104C)
Input/Output Connectors:	50Ohm SMA(f), 50Ohm N(f), 75Ohm F(f)*	50Ohm SMA(f), 50Ohm N(f), 75Ohm F(f)*
Impedance/Connectors:	50OHm SMA(f) or 75Ohm F(f)*	50OHm SMA(f) or 75Ohm F(f)*
10MHz Reference Input:	50Ohm SMA(f), external	50Ohm SMA(f), external
LNB-Supply:	13/15/18V, 22kHz, 400mA	13/15/18V, 22kHz, 400mA
Local Access/Configuration:	LC-Display/keypads	LC-Display/keypads
Remote Access/Configuration:	100Mbit RJ45 (WebGUI and SNMPv2c)	100Mbit RJ45 (WebGUI and SNMPv2c)
Status LED´s:	Amplifier & power supply	Amplifier & power supply
MTBF / MTTR:	>400kHrs @ 25°C / 24 hours	>400kHrs @ 25°C / 24 hours
Operating Temperature:	0 to 45°C	0 to 45°C
Storage Temperature:	-10 to 70°C	-10 to 70°C
Humidity:	90%, non-condensing	90%, non-condensing
RoHS:	Compliant	Compliant

AMPLIFIER MODULES	HQA2535M	HQA3040M
Frequency Range:	950 – 2150MHz (L-Band)	950 – 2150MHz (L-Band)
Gain Control Ranges:	0 to 25dB (Acc. ±0,25dB) @ standard gain mode 5 to 35dB (Acc. ±0,25dB) @ high gain mode	0 to 30dB (Acc. ±0,25dB) @ standard gain mode 10 to 40dB (Acc. ±0,25dB) @ high gain mode
Gain Steps:	1dB steps	1dB steps
Slope Equalization:	0 to 7dB, 1dB steps	0 to 7dB, 1dB steps
Monitoring Port:	-20dB (front-side)	-20dB (front-side)
RF Power Monitoring:	65dB dynamic range	65dB dynamic range
Output Limiter:	Adjustable -30dBm to +10dBm	Adjustable -30dBm to +10dBm
Threshold Function:	Adjustable -30dBm to +10dBm	Adjustable -30dBm to +10dBm
AGC:	Adjustable -40dBm to +10dBm	Adjustable -40dBm to +10dBm
Input/Output Return Loss:	14dB min.	14dB min.
Frequency Response:	±0,5dB, ±1dB max.	±0,5dB, ±1dB max.
Max RF Input Power:	+10dBm max (Damage Level)	+10dBm max (Damage Level)
RF Input Power Level Range	-10 to -60 dBm	-10 to -60 dBm
RF Output Power:	+23dBm max.	+23dBm max.
Noise Figure:	6dB @ 25dB gain / 5dB @35dB gain	5dB @ 30dB gain / 4dB @40dB gain
IMA3 @ +17dBm:	< -40dBc	< -40dBc
1dB Compression Point:	+22dBm	+22dBm

ORDER INFORMATION

Type	Type-No.	Short Description	I/O connectors
HQA Amplifier chassis variants			
HQA101C-50S	9000723	HQA Amplifier Chassis, 1 amplifier slot, 1RU/19" rack mount	50Ohm SMA(f)
HQA101C-75F	9000724	HQA Amplifier Chassis, 1 amplifier slot, 1RU/19" rack mount	75Ohm F(f)*
HQA104C-50S	9000725	HQA Amplifier Chassis, 4 amplifier slot, 1RU/19" rack mount	50Ohm SMA(f)
HQA104C-75F	9000726	HQA Amplifier Chassis, 4 amplifier slot, 1RU/19" rack mount	75Ohm F(f)*
HQA Amplifier module variants			
HQA2535M	9000728	HQA high quality amplifier module, 0 to 25dB & 5 to 35dB variable gain control range	
HQA3040M*	9000727	HQA high quality amplifier module, 0 to 30dB & 10 to 40dB variable gain control range	

upon request only

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