



HQA series

Variable gain L-Band Line Amplifiers (Single/Dual/Quad)

Made
in
Germany

GENERAL

The HQA series represents high dynamic and professional L-Band line amplifiers with variable gain control range of 0...30dB or 10...40dB. It combines the stand-alone „HQA101C“, the scalable „HQA102C“ or the „HQA104C“ 1RU/19" rack-mount chassis together with the corresponding line amplifier modules „HQA2535M“ or „HQA3040M“. The „HQA2535M“ amplifier module allows variable gain control of 0...25dB (standard gain mode) or 5...35dB (high gain mode) while the „HQA3040M“ amplifier module allows variable gain control of 0...30dB (standard gain mode) or 10...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 „HQA102C“ chassis can hold two and the „HQA104C“ chassis 4 amplifier modules, each amplifier module operates individually 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 units have 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. This high quality line 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 platforms.



FEATURES & BENEFITS

- Space saving 1RU/19" rack-mount design
- Single, Dual or Quad* line amplifier population per chassis
- Variable gain control range 0...25dB (standard gain mode) or 5...35dB (high gain mode) with HQA2535M amplifier module
- Variable gain control range 0...30dB (standard gain mode) or 10...40dB (high gain mode) with HQA3040M amplifier module
- Variable gain-control selectable as MGC (Manual Gain Control) or AGC (Automatic Gain Control)
- Supports slope-equalization 0...9dB, 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 indicating amplifier & power-supply status
- Remote configuration & monitoring via Ethernet-Interface, RS232/485 (WebGUI/SNMPv2c)
- 1:1 redundant dual power supply (hot swappable)

*upon request

ORDER INFORMATION

- **HQA101C-50:** HQA Amplifier Chassis, 1 amplifier slot, 50Ohm SMA(f), 1RU/19" rack-mount
 - **HQA101C-75:** HQA Amplifier Chassis, 1 amplifier slot, 75Ohm F(f), 1RU/19" rack-mount
 - **HQA102C-50:** HQA Amplifier Chassis, 2 amplifier slots, 50Ohm SMA(f), 1RU/19" rack-mount
 - **HQA102C-75:** HQA Amplifier Chassis, 2 amplifier slots, 75Ohm F(f), 1RU/19" rack-mount
 - ***HQA104C-50:** HQA Amplifier Chassis, 4 amplifier slots, 50Ohm SMA(f), 1RU/19" rack-mount*
 - ***HQA104C-75:** HQA Amplifier Chassis, 4 amplifier slots, 75Ohm F(f), 1RU/19" rack-mount*
- Amplifier module variants**
- **HQA2535M:** HQA active line amplifier module, 00...25dB & 5...35dB variable gain control range
 - **HQA3040M:** HQA active line amplifier module, 00...30dB & 10...40dB variable gain control range

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TECHNICAL SPECIFICATIONS

CHASSIS SPECIFICATIONS

➤ Chassis type:	HQA101C-50/-75 / HQA102C-50/-75	*HQA104C-50/-75 (Four amplifier slots)
➤ Dimensions:	1RU/19" rack-mount	1RU/19" rack-mount
➤ Power supply:	85...230V, 50/60Hz	85...230V, 50/60Hz
➤ Power supply redundancy:	1:1 redundant (hot-swappable)	1:1 redundant (hot-swappable)
➤ Power consumption:	>10W	>15W
➤ Amplifier module slots:	1 slot (HQA101C) / 2 slots (HQA102C)	*4 slots (HQA104C)
➤ Impedance/connectors:	50Ohm SMA(f) or 75Ohm F(f)	50Ohm SMA(f) or 75Ohm F(f)*
➤ 10MHz reference:	External, 50Ohm SMA(f)	External, 50Ohm SMA(f)
➤ Switchable LNB-supply:	13/15/18V, 22kHz, 400mA	13/15/18V, 22kHz, 400mA
➤ Local configuration:	LC-Display/keypads	LC-Display/keypads
➤ Remote configuration:	100Mbit RJ45 Ethernet-Interface (WebGUI, SNMPv2c)	100Mbit RJ45 Ethernet-Interface (WebGUI, SNMPv2c)
➤ Status LED's:	Amplifier modules & power supply status	Amplifier modules & power supply status
➤ Operating temperature:	0...45°C	0...45°C
➤ Storage temperature:	-10°C...70°C	-10°C...70°C
➤ Humidity:	90% non condensing	90% non condensing
➤ RoHS:	Compliant	Compliant

*upon request

AMPLIFIER MODULE SPECIFICATIONS

➤ Amplifier module types:	HQA2535M: 0...25dB @ standard gain mode / 5...35dB @ high gain mode) HQA3040M: 0...30dB @ standard gain mode / 10...40dB @ high gain mode)
➤ Frequency range:	950...2150MHz (L-Band)
➤ Gain control ranges:	0...25dB (Acc. ±0.25dB) @ standard gain mode / 5...35dB ((Acc. ±0.5dB) @ high gain mode 0...30dB (Acc. ±0.25dB) @ standard gain mode / 10...40dB ((Acc. ±0.5dB) @ high gain mode
➤ Gain steps:	1dB steps
➤ Slope equalization:	0...9dB, 1dB steps
➤ Monitoring port:	-20dB (front-side)
➤ RF power monitoring:	65dB dynamic range
➤ Output limiter:	adjustable -30dBm...+10dBm
➤ I/O Return-Loss:	14dB min.
➤ Frequency response:	±0.5dB, ±1dB max.
➤ Max. RF output power:	+17dBm, +23dBm max.
➤ Noise figure:	6dB @ 25dB gain / 5dB @ 35dB gain / 6dB @ 30dB gain / 5dB @ 40dB gain
➤ IMA3 @ +70dBm:	< -46dBc
➤ 1dB compression point:	23dBm
➤ Isolation:	> 50dB