

1+1 redundant / 2 single high precision L-Band Amplifier (gain 0 to 40dB, Step 0.2dB)

The HQR245C-FT represents a 1+1 redundant RF line amplifier in a compact 1RU/19" rack mount operating at L-Band (950 – 2150MHz) frequency useable as 1+1 or dual single operational amplifier.

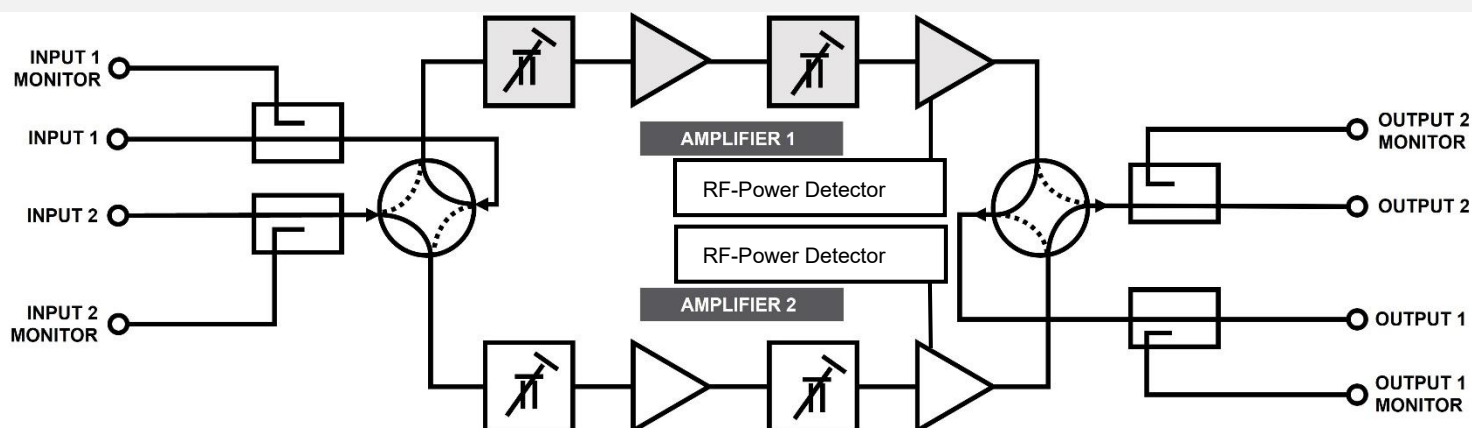
It comes with variable gain control ranging from 0 to 40dB in 0,2dB step along with slope equalization (module HQA45MGFT) and various additional functionalities. For highest operational performance the HQR245C-FT is available with Amplifier Module HQA45MGFTNS (no slope).

The HQR245C's two high dynamic 1:1 redundant operating amplifier module, each provide variable gain control 0 to 40dB in 0,2dB step for precision fine tuning of the output power so to achieve best performance within the network. The redundancy switching between the two amplifier modules is done nearly interruption free with a switchover time of <5ms.

The unit features variable gain control (MGC/AGC), slope-equalization, RF power monitoring, threshold alarming, 2 front-panel monitoring ports and 1:1 redundant dual power supply (hot-swappable). Additional features such as switchable LNB-supply and a 10 MHz reference signal port are optionally available.

The HQR245C-FT has a front-side LC-Display/keypads for local configuration. Front-side status LED's indicating amplifier and power supply status. Remote control and configuration can be done via its rear-side Ethernet-Interface (WebGUI, SNMP).

This line amplifier is perfectly suited for RF distribution infrastructures in Teleports, Satellite Earth Stations, as well as Broadcast- and Broadband facilities wherever accurate RF power, highest stability and availability is necessary.



FEATURES & BENEFITS

- ▶ Space saving and compact 1RU/19" rack mount design
- ▶ 1+1 redundant operating amplifier modules
- ▶ Operation Mode 1:1 redundant or two single amplifiers
- ▶ Less than 5ms switchover between amplifiers 1 & 2
- ▶ Variable gain adjusts 0 to 40dB, 0.2dB steps (MGC/AGC)
- ▶ Slope equalization 0 to 7dB, 1dB steps with HQA45MGFT
- ▶ RF power monitoring for both amplifier-modules (In & Output)

- ▶ Threshold alarm function and switchable output limiter
- ▶ 2 x 2 front panel monitoring ports -20dB (Input & Output)
- ▶ 1:1 redundant dual power supply (hot-swappable)
- ▶ MTTF Counter and Warning Function for Power Supplies
- ▶ Front panel status LED's (amplifier & power supply status)
- ▶ Local configuration via front panel LC-Display/keypads
- ▶ Remote configuration via Ethernet-Interface (WebGUI, SNMP)

TECHNICAL SPECIFICATIONS

Dimensions:	1RU/19" rack mount
Power Supply:	90 – 264V, 50/60Hz, 1:1 redundant (hot-swappable), Power consumption <10W
Frequency Range:	950 – 1750MHz and 2150MHz
Input/Output Connectors:	2 Inputs, 2 Outputs 50Ohm SMA(f)) rear side, front side monitoring ports 2 x input and 2 x output, -20dB
Input Return Loss:	14dB min. with L-Band Module HQA45MGFT 16dB min. with L-Band Module HQA45MGFTNS
Output Return Loss:	16dB min. with L-Band Module HQA45MGFT, 16dB min. with L-Band Module HQA45MGFTNS
Frequency Response:	±0,5dB typ., ±1,0dB max. , ±0,2dB max. in 40 MHz, ±0,1dB max. in 10 MHz Window
Variable Gain Control:	0 to 40dB (accuracy ±0,2dB), 1dB steps coarse, 0,2dB (±0,1dB) step fine, Mode MGC and AGC*
Gain Stability:	±0.1dB/24 hrs (fixed temp)
Amplifier to Amplifier Gain Match:	≤0.5dB
Slope Equalization:	0 to 7dB, 1dB steps manual adjust over full band 950-2150MHz*
Max. RF Input Power:	+13dBm (no damage)
Max. RF Output Power:	+23dBm
Noise Figure:	≤3dB @ full gain
Spurious Free Dynamic Range:	< -80dBm
IMA3/OIP3:	> -40dBc typ. @ +15dBm / OIP3 +33dBm
1dB Compression Point:	+21dBm @ full gain
Isolation:	>56dB
Group Delay:	0,03ns/MHz typ., 1ns/peak to peak max.
Amplifier Monitoring:	Current Draw and RF Power
Amplifier Switchover Time:	<5msec (without detection time)
Threshold Alarm:	Adjustable -40dBm to +10dBm
Output Limiter:	Adjustable -30dBm to +17dBm
Local Access/Configuration:	Front panel OLED Display/keypads, status LED's at each amplifier module
Remote Access/Configuration:	100Mbit Ethernet-Interface (WebGUI, SNMPv2c), RS232
MTBF/MTTR:	>400kHrs at 25°C / 24 hours
Temperature Range:	Operating Range -10°C to 50°C, Storage Range -20°C to 75°C
Humidity:	20 - 95%, non-condensing
RoHS:	Compliant

ORDER INFORMATION

Type	Type No.:	Short Description
HQR245C-FT-50S	9001258	1:1 redundant L-Band Amplifier Chassis, 50Ohm SMA(f), 1RU/19" rack mount
HQR245C-FT-50N	9001268	1:1 redundant L-Band Amplifier Chassis, 50Ohm N(f), 1RU/19" rack mount
HQA45MGFT	9001262	Amplifier Module, L-Band 950 – 2150MHz, Gain Adjust 0 – 40dB, Step 0,2dB, Slope adjust 0-7dB
HQA45MGFTNS	9001263	Amplifier Module, L-Band 950 – 2150MHz, Gain Adjust 0 – 40dB, Step 0,2dB, No Slope adjust, No AGC
HQR245FSFTD	9001278	HQR245 Full spec factory test documentation

OPTIONS

Module Type	Type No.:	Short Description
Option 104 RS485	9000999	RS485 Interface Support Adjustable Bus Address, Protocol defined by RF-Design

*Option (only Amplifier Module HQA45MGFT) / **upon request only