

...designed for perfect signals

## 1+1 redundant / 2 single high precision L-Band Amplifier (gain 0 to 40dB, Step 0.1dB)

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.

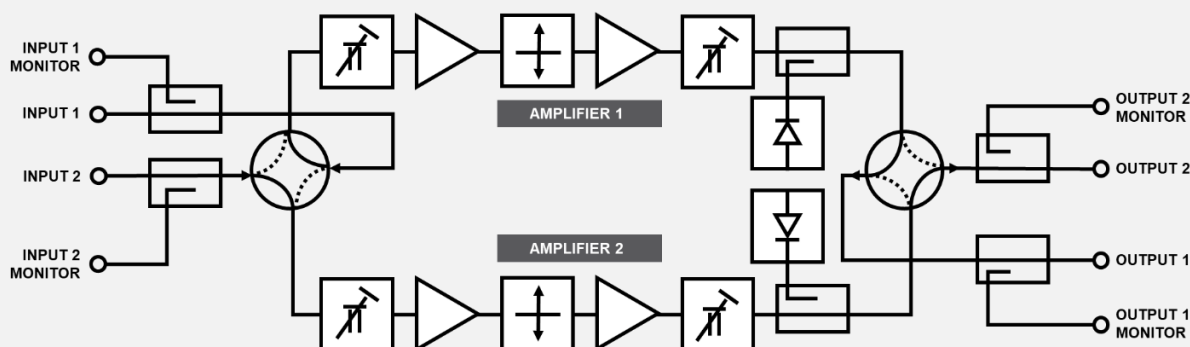
It comes with variable gain control ranging from 0 to 40dB in 0,1dB step along with slope equalization (module HQA45MGFT) and various additional functionalities. For highest operational performance the HQR245C-FT is available with Amplifier Module HQA45MGFTNS (no slope) for highest return loss > 18dB.

The HQR245C's two high dynamic 1:1 redundant operating amplifier module, each provide variable gain control 0 to 40dB in 0,1dB 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, 0.1dB 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

<b>Dimensions:</b>	1RU/19" rack mount
<b>Power Supply:</b>	90 – 264V, 50/60Hz, 1:1 redundant (hot-swappable), Power consumption <10W
<b>Frequency Range:</b>	950 – 1750MHz and 2150MHz
<b>Input/output Connectors:</b>	2 Inputs, 2 Outputs 50Ohm SMA(f)) rear side, front side monitoring ports 2 x input and 2 x output, -20dB
<b>Input Return Loss:</b>	16dB min. with L-Band Module HQA45MGFT 18dB min. with L-Band Module HQA45MGFTNS
<b>Output Return Loss:</b>	14dB min. with L-Band Module HQA45MGFT, 18dB min. with L-Band Module HQA45MGFTNS
<b>Frequency Response:</b>	±0,5dB typ., ±1,0dB max., ±0,2dB max. in 40 MHz, ±0,1dB max. in 10 MHz Window
<b>Variable Gain Control:</b>	0 to 40dB (accuracy ±0,2dB), 1dB steps coarse, 0,1dB step fine, Mode MGC and AGC
<b>Gain Stability:</b>	±0.1dB/24 hrs (fixed temp)
<b>Amplifier to Amplifier gain match:</b>	≤0.5dB
<b>Slope Equalization:</b>	0 to 7dB, 1dB steps manual adjust over full band 950-2150MHz (only Amplifier Module HQA45MGFT)
<b>Max. RF Input Power:</b>	+13dBm (no damage)
<b>Max. RF Output Power:</b>	+23dBm
<b>Noise Figure:</b>	<=3dB @ full gain
<b>Spurious Free Dynamic Range:</b>	< -80dBm
<b>IMA3/OIP3:</b>	> -40dBc typ. @ +15dBm / OIP3 +36dBm min.
<b>1dB Compression Point:</b>	+21dBm @ full gain
<b>Isolation:</b>	>56dB
<b>Group Delay:</b>	0,03ns/MHz typ., 1ns/peak to peak max.
<b>Amplifier Monitoring:</b>	Current Draw and RF Power
<b>Amplifier Switchover Time:</b>	<5msec (without detection time)
<b>Threshold Alarm:</b>	Adjustable -40dBm to +10dBm
<b>Output Limiter:</b>	Adjustable -30dBm to +17dBm
<b>Local Access/Configuration:</b>	Front panel OLED Display/keypads, status LED's at each amplifier module
<b>Remote Access/Configuration:</b>	100Mbit Ethernet-Interface (WebGUI, SNMPv2c), RS232
<b>MTBF/MTTR:</b>	>400kHrs at 25°C / 24 hours
<b>Temperature Range:</b>	Operating Range -10°C to 50°C, Storage Range -20°C to 75°C
<b>Humidity:</b>	20 - 95%, non-condensing
<b>RoHS:</b>	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 0,1dB, Slope adjust 0-7dB
HQA45MGFTNS	9001263	Amplifier Module, L-Band 950 – 2150MHz, Gain Adjust 0 – 40dB, Step 0,1dB, No Slope adjust
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