



STELLA DORADUS

ROUTERAMP

Industrial grade cellular amplifier for mobile routers.
Direct connect to the mobile router in the ship.



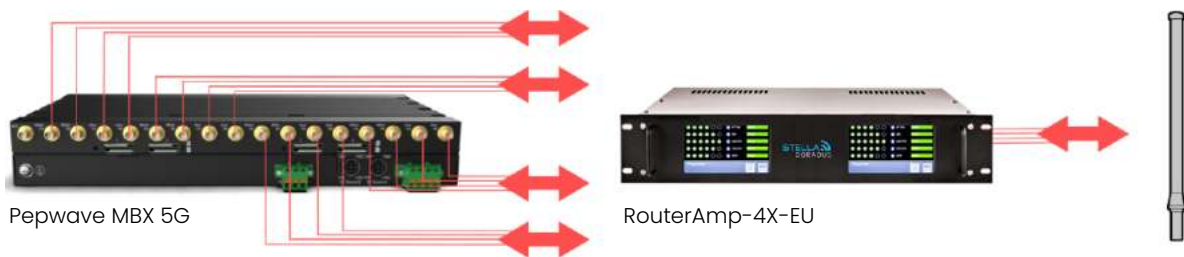
The RouterAmp is an industrial grade cellular amplifier for ships that works with all mobile operators in the EMEA or Americas. It ensures that the cellular router is connected to mobile signal in remote regions for vehicles, and as far out as 30km from the coastline for ships. It has up to 16 ports that can connect to 4 radio cards in 4X MIMO configuration. It is compatible with the latest 5G routers.

For routers with 4 radios, the RouterAmp reduces the number of cables to the outdoor antennas by a factor of 4.

When connected to the Stella cloud, it can be remotely managed, monitored and adjusted, as well as receive real-time measurements of signal power and gain for each band.

ByPass mode - the amplifier can be bypassed when in urban areas. This allows the router to receive more bands, including 5G at 3.6Ghz.

- Large LCD Touch Display.
- Up to 16X ports - 4 radio cards.
- 4X MIMO. 4X outdoor antennas.
- Remote monitoring.
- Boosts all operators - Works with all routers.
- 5G/4G/3G/2G.
- ByPass mode.
- Regions: EMEA/Americas.
- Conforms to E.T.S.I specifications



Pepwave

Huawei

Siemens

Teltonika

Cisco

TP-Link

Asus

Airbridge

Models (SKU)	MIMO	Region	Rack	Mounting	Bands	Weight
RA-2X-EU-W/R	2X	EU	1U/2U	Wall/Rack	B28/B20/B8/B3/B1/B7	2.5kg
RA-4X-EU-W/R	4X	EU	2U	Rack	B28/B20/B8/B3/B1/B7	5kg
RA-2X-US-W/R	2X	US	1U	Wall	B28/B5/B4/B25/B7	2.5kg

Regions:

EU: Europe, Middle East, Africa.

US: Caribbean, USA, Mexico, South America.



SKU explained:

RA-2X-EU-W

Bands	B28	B20	B8	B3	B1	B7	B5	B4	B25
Downlink (MHz)	758-788	791-821	925-960	1805-1880	2110-2170	2620-2690	869-894	2110-2155	1930-1990
Uplink (MHz)	703-733	832-862	880-915	1710-1785	1920-1980	2500-2570	824-849	1700-1755	1850-1915
Region	EU/US	EU	EU	EU	EU	EU	US	US	US

Amplifier Specs

Gain	Uplink Gp: 15dB Downlink Gp> 15dB
Pass band ripple	<4dB
I/O impedance	50 ohm/SMA female connector
Max up/down signal strength	27dBm / -25dBm
Ambient Temperature	-30°C to +70°C
Power supply input	110 - 240V AC
Oscillation Control	Automatic
AGC Level Control:	Automatic ¹
Up-link Switch On	Yes ²
AGC Range	30dB
Surge protection	SMA connectors DC grounded, 12V DC port MOV protected
Ports (SMA)	8X ports or 16X ports (2X or 4X MIMO)
ByPass mode	Yes
Power supplies	12V,7A

¹Automatically adjusts during installation. Thereafter, automatically adjusts for seasonal variation in path loss between the base station and the outdoor antenna.

²The uplink amplifiers switch off when the repeater is not in use. This reduces the uplink noise to almost zero. When the repeater is in use (phone call or data session), the up-link amplifiers switch on for the duration of the call/ data session only.

Note: Specifications subject to change without notice.



Power control:

The RouterAmp (RA) amplifies both the uplink (UL) signals from the cellular router, and the downlink (DL) signals from the operator's mast, by 15dB.

On the UL, the signals from the router are amplified up to a maximum power of 27dBm. If the radio cards inside the router send a signal to the RouterAmp greater than 27dBm, the RouterAmp automatically reduces its gain. This maintains the maximum UL power at 27dBm.

On the DL, the signals from the operator's base stations are amplified by 15dB, to a maximum power of -25dBm (minus 25dBm). This low power (in comparison to the high maximum UL power) is because the radio cards in the router are very sensitive, and cannot sustain exposure to high RF (radio frequency) power. This situation can arise if the router approaches an operator's base station, (ship in port, or vehicle in city). The gain of the RouterAmp automatically reduces in this case, so that the maximum DL power is limited to -25dBm.

Gain adjustments on the DL do not affect the UL and vice versa. Both directions are completely independent.



ByPass mode:

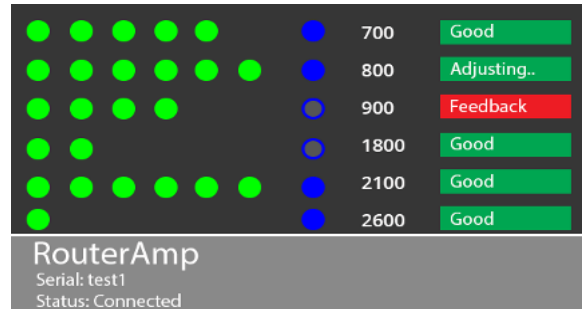
The RouterAmp-EU amplifies signals on bands 28, 20, 8, 3, 1, 7. These are the main cellular European bands and cover 5G/4G/3G/2G. However, new bands are coming, mainly in the 3.4-3.8GHz band. The RouterAmp does not amplify these bands. These higher 5G frequencies will not have suitable range for when the ship is out at sea or when the vehicle is in rural areas. However, when it comes into towns/cities, it would be useful to avail of them. ByPass mode can be enabled so that the amplifier is by-passed, and all cellular signals can reach the router.

Remote Monitoring – Stellacontrol

The RouterAmp can be monitored and managed remotely on the Stella online platform – Stellacontrol. Remote monitoring allows remote setup, optimization and control of the system at all times.

Main screen:

-  Downlink signal power.
-  The band is switched on. This happens when a data session is initiated. Once the data session is over, the band switches off and the blue dot also switches off.



Indicator	Description
Good	Indicates no problems.
Adjusting	Band is optimizing itself.
Hi power	Strong outdoor signal. Action: No action required, as the repeater will self optimize.
Reduced Gain	Gain is reduced for an extended time. Action: Add some manual attenuation.
Feedback	Oscillation detected. Action: Ensure there is a solid wall between the outdoor antenna and the indoor antennas.

Decibel (dB) page:

The dB page shows actual raw data (dB) from the amplifier.

Value	Description
UL Power	Uplink power received by the amplifier. (Power emitted by the router)
DL Power	Downlink power from the operator's mast received by the amplifier.
UL Fast AGC	Uplink AGC
AGC	Downlink AGC. This controls the downlink gain when the operator's downlink signal is too strong.

Frequency (MHz)	700	800	900	1800	2100	2600
UL Power(dBm)	-15	-15	-15	-15	-15	-15
DL Power(dBm)	-30	-30	-30	12	-30	-30
UL Fast AGC(dB)	0	1	3	5	4	5
AGC (dB)	0	0	0	0	0	0
DL Total Loss (dB)	0	0	0	0	0	0

Other LCD features

Feature	Description
PIN Access	A secret PIN can lock out access to the LCD display. The PIN is set on the clients account on the platform.
Band On/Off	Turn any band on or off.
Internal location	Enter note about the amplifier. This note is sent and displayed on the Stellacontrol inventory page. E.g. Internal location of the amplifier.



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