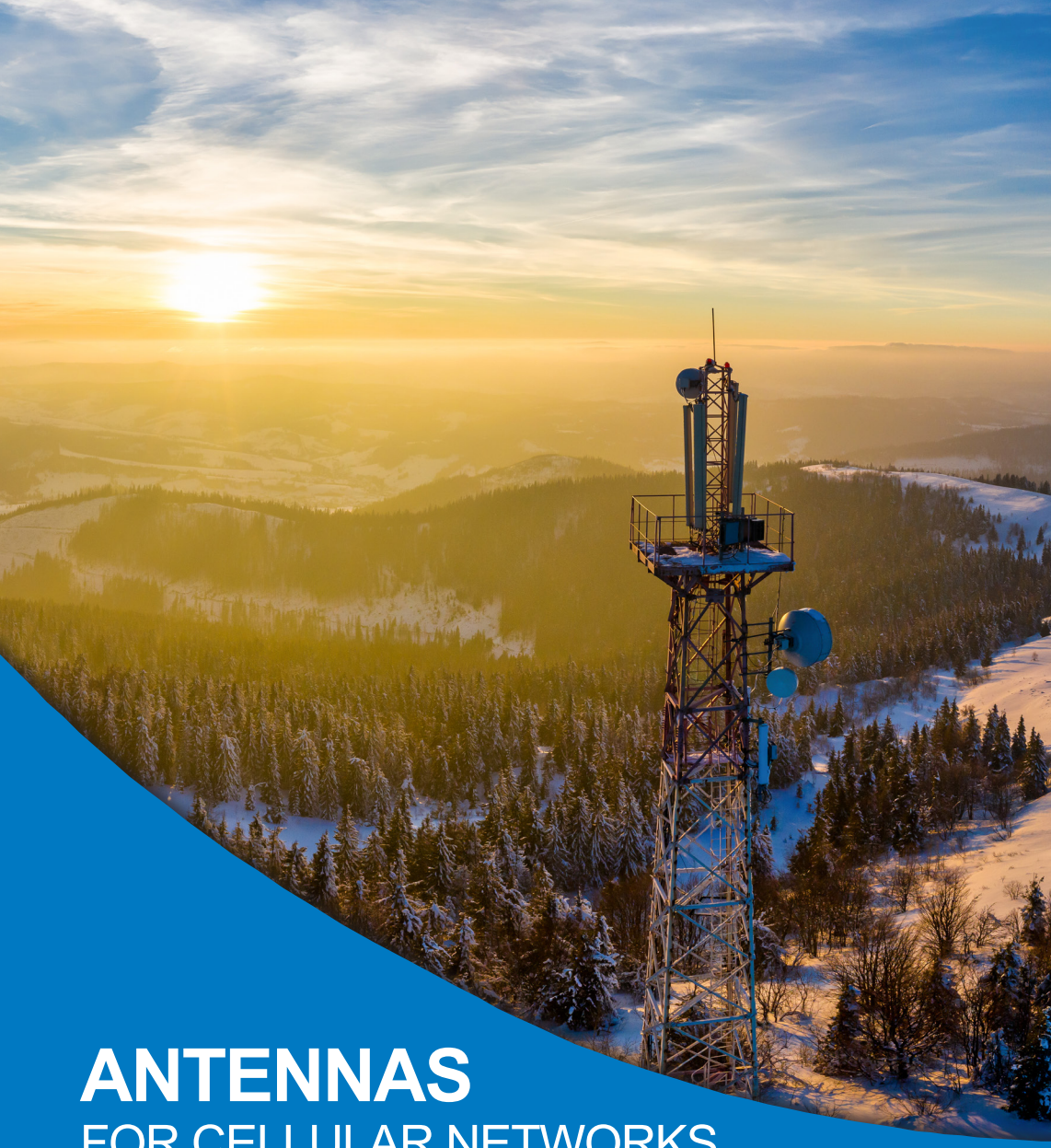
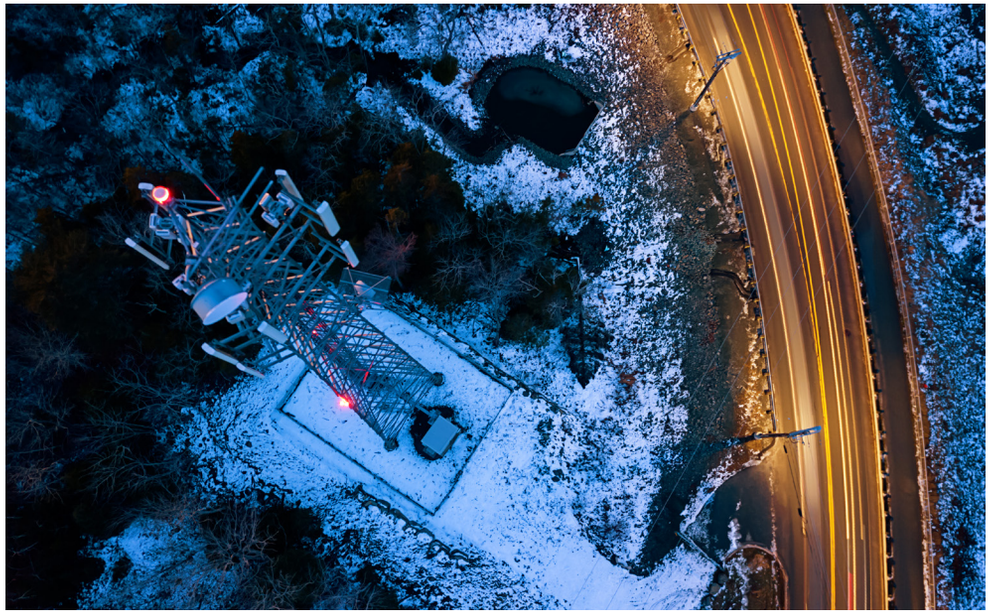


ANTENNAS
FOR CELLULAR NETWORKS

Amphenol
ANTENNA SOLUTIONS

Across the world. Around the corner.

Your wireless communication network partner



Amphenol Antenna Solutions is a premium **antenna solution provider** dedicated to the single objective of designing and manufacturing high performance antennas.

We are a customer-centric antenna company that **partners** with our customers to develop **innovative and tailored** solutions, that secures optimal coverage and capacity under all circumstances.
We are **independant** from any RAN vendor, but work with them all including vRAN vendors to create customized antenna solutions - this gives us a unique position in the preparation for ORAN future.

With manufacturing and R&D team in Europe, Asia and America we offer local support to our customers - **Across the world. Around the corner.**

Amphenol
ANTENNA SOLUTIONS

Contents

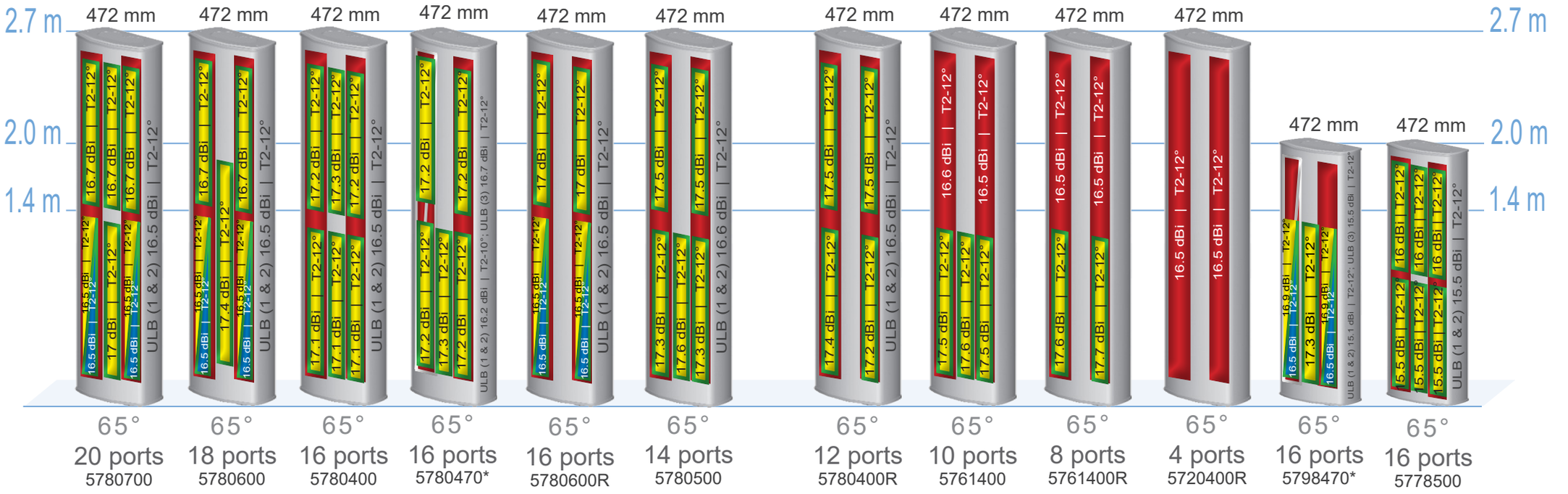
Amphenol ANTENNA SOLUTIONS

NodeLine Panel Antennas

Integra

Innovation platform, with even more **connectivity** and **flexibility**

- Possibility to upgrade your existing antenna while **saving 50% carbon footprint** - Discover Integra p8
- **Easy** and **aesthetic 5G** (active and passive) **upgrade** via slide-in functionality on top section.
- Covering the **1400 MHz**
- World class **wind load** inherited from years of experience



Ultra Low Band (ULB)
698-960 MHz

*Filtered Ultra Low Band (ULB)
2 Ports 698-803 MHz
2 Ports 880-960 MHz

Mega Wide Band Array (MWB)
1427-2690 MHz

Filtered Array Mega Wide Band (MWB)
2 Ports 1427-2180 MHz
2 Ports 2490-2690 MHz

NodeLine Panel Antennas

Integra

Innovative platform, with even more **connectivity** and **flexibility**

- Possibility to upgrade your existing antenna while **saving 50% carbon footprint** - Discover Integra p8
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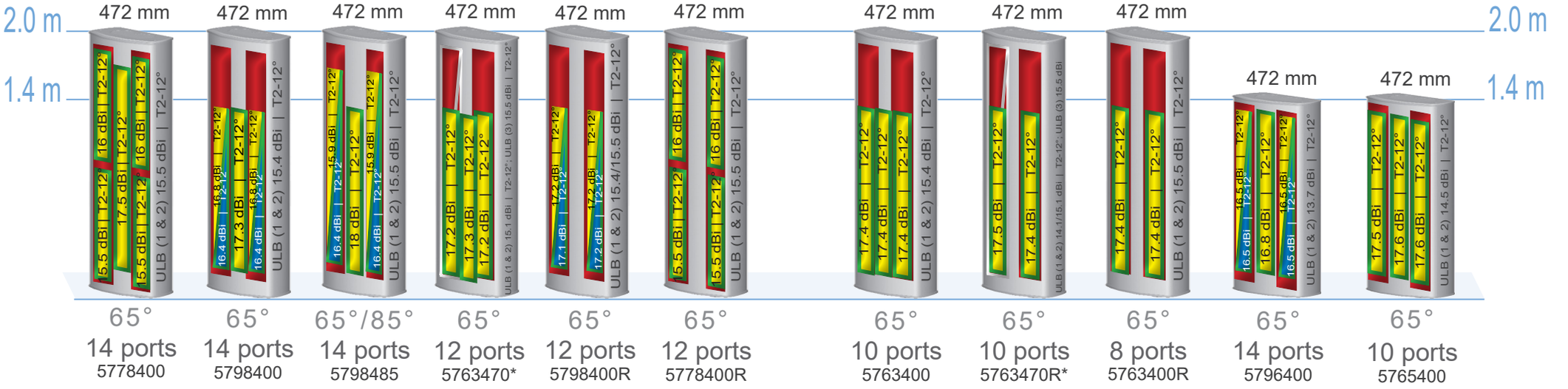

Ultra Low Band (ULB)
698-960 MHz

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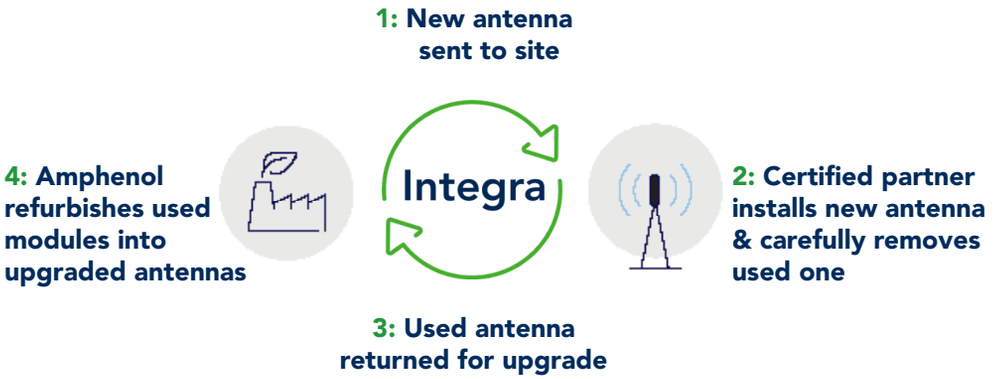
2 Ports 698-803 MHz
2 Ports 880-960 MHz

Mega Wide Band Array (MWB)
1427-2690 MHz

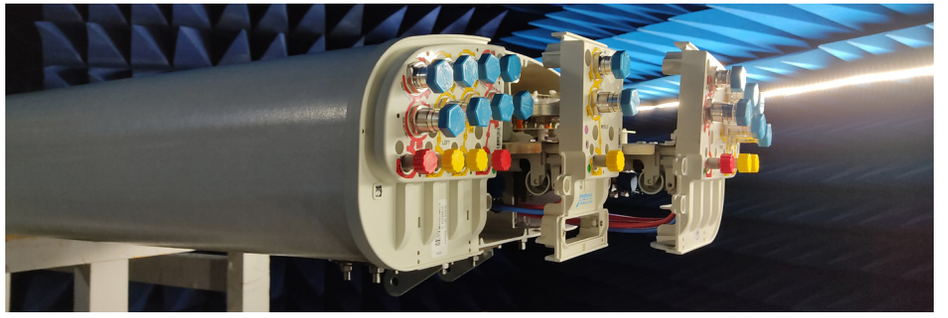
Filtered Array Mega Wide Band (MWB)
2 Ports 1427-2180 MHz
2 Ports 2490-2690 MHz

Integra

Network evolution creates huge amount of antenna waste. In order to contribute to the climate change and help Mobile Network Operators achieve their carbon footprint reduction target, we launch **Integra : the world's first upgradable antenna.**



- Latest technology via NodeLine antenna family
- 50% of the carbon footprint
- Upgrade installed & stock antennas
- Two-year warranty
- Fully tested and certified



NodeLine - the 5G enabler

All NodeLine antennas enable an easy upgrade from 4G to 5G when needed thanks to its special top section. Integrating legacy & 5G in one antenna has many advantages : save space on towers, easy installation via slide-in solution and aesthetic solution.

Hybrid Kit

1.0 meter length accessory tailored to host 5G mMIMO active antennas.
Reserve space on existing sites if legacy passive technologies need upgrade at a later date or directly install the mMIMO kit with radio.


Nokia radio into the Hybrid Kit

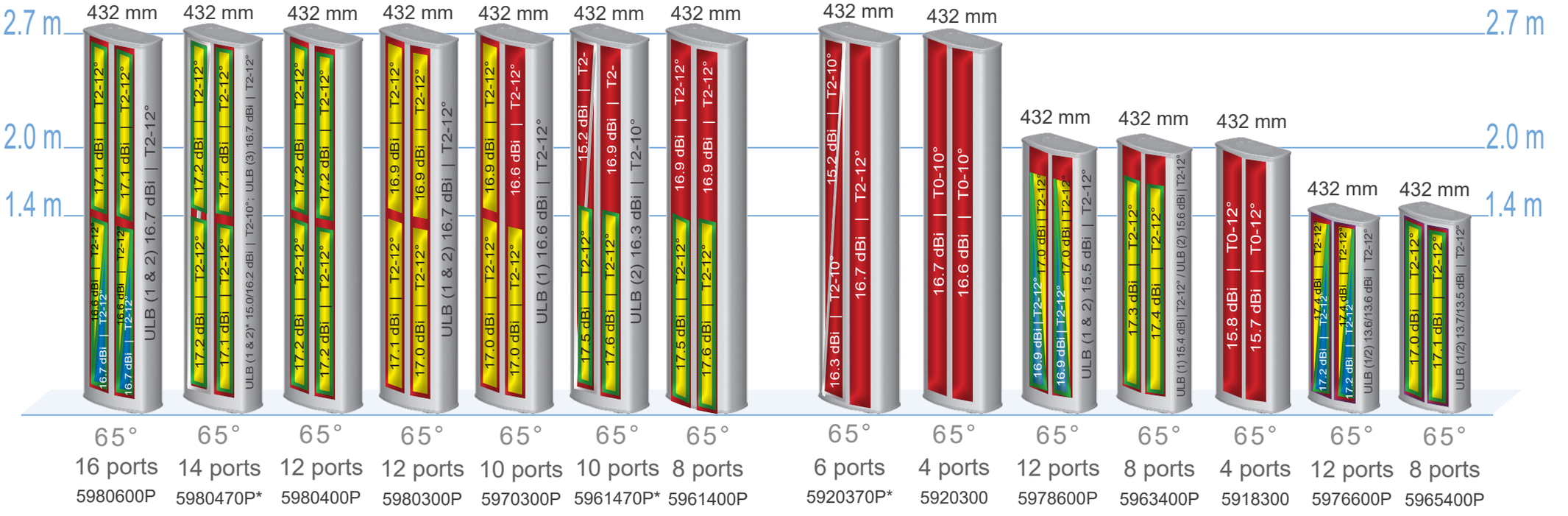

Hybrid Kit on the top of NodeLine

This solution is tailored to host radio from any RAN vendors. We work with the main RAN suppliers to be officially approved for radio integration.
This solution have been designed to be future proof as we will evolve to host any Open RAN player.

TwinLine Panel Antennas

World-class wind loading profile and enhanced width, ideal for site sharing and MIMO 4x4 operations

- 2 multiband arrays housed in an optimally designed package
- World 1st antenna made for **antenna/site sharing** use
- World class **windload**
- MIMO 4x4 operations



Ultra Low Band (ULB)
698-960 MHz

*Filtered Ultra Low Band (ULB)
2 Ports 698-803 or 698-788 MHz 2 Ports 880-960 MHz

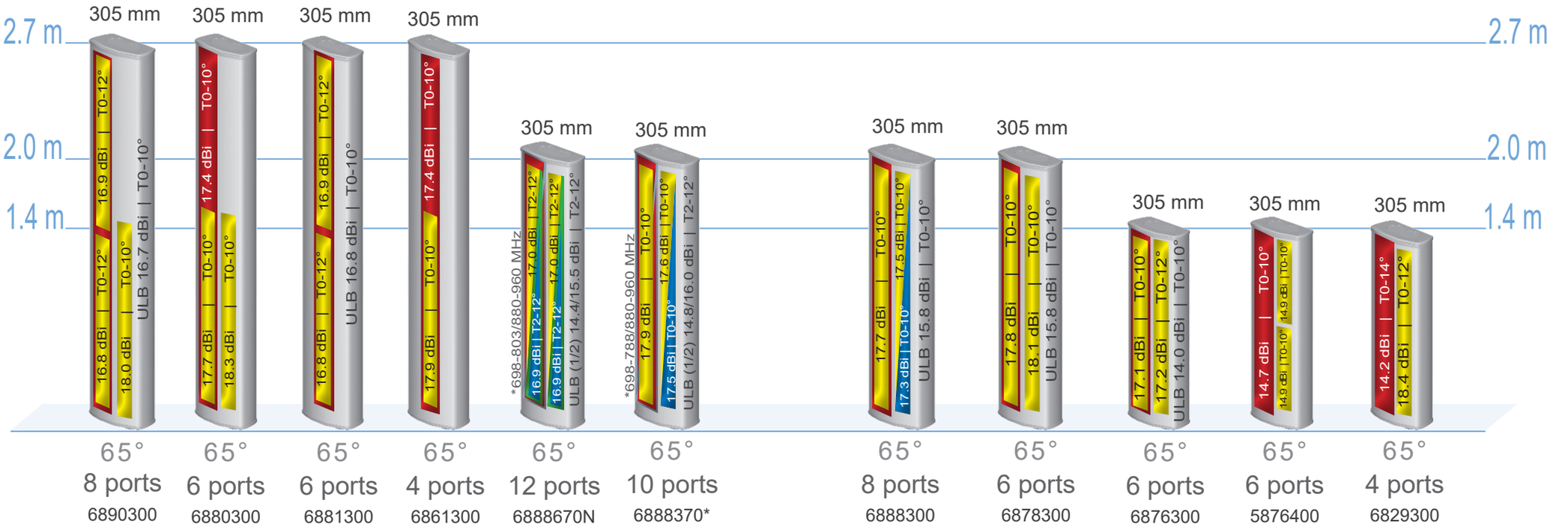
Mega Wide Band Array (MWB)
1427-2690 MHz

Filtered Mega Wide Band (MWB)
2 Ports 1427-2180 MHz
2 Ports 2490-2690 MHz

Amphenol ANTENNA SOLUTIONS

UltraLine Panel Antennas

- Configuration that can allow up to five different bands
- Housed in a **compact** arrangement



Ultra Low Band (ULB)
698-960 MHz

Wide Band Array (WB)
1695-2180 MHz

Ultra Wide Band Array (UWB)
1695-2690 MHz

Filtered Ultra Wide Band (UWB)
2 Ports 1695-2180 MHz
2 Ports 2490-2690 MHz

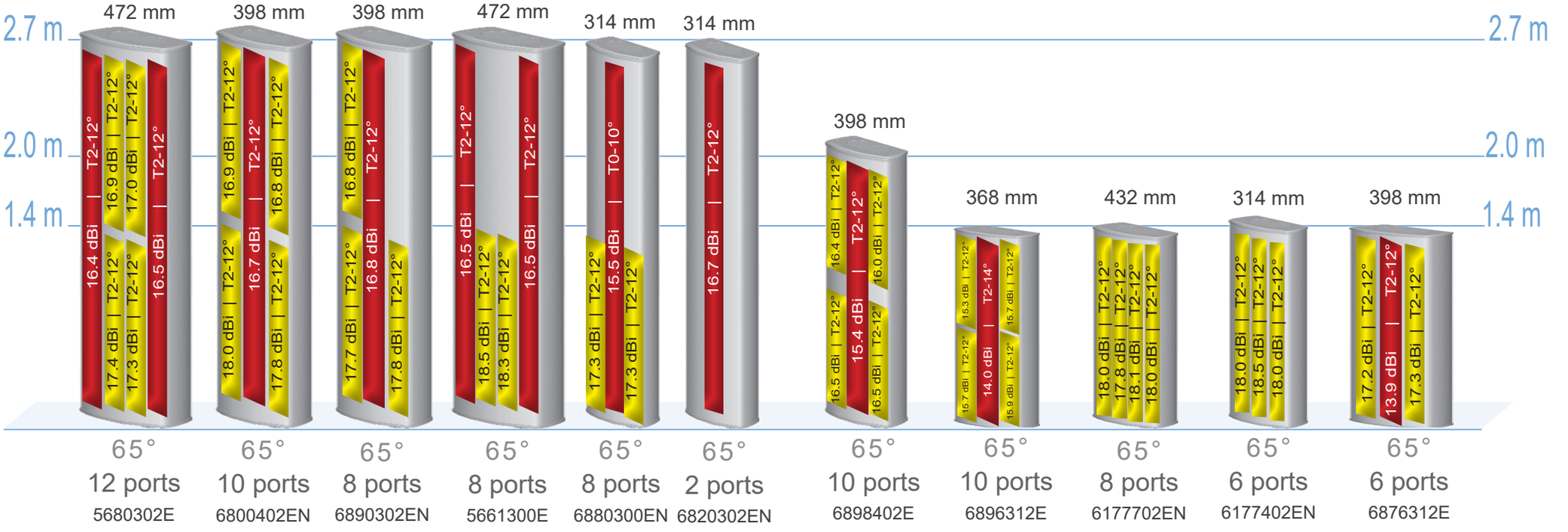
Mega Wide Band Array (MWB)
1427-2690 MHz

*Filtered Ultra Low Band (ULB)
2 Ports 698-803 or 698-788 MHz 2 Ports 880-960 MHz

Filtered Mega Wide Band (MWB)
2 Ports 1427-2180 MHz
2 Ports 2490-2690 MHz

E-Series Panel Antennas

- Standard versions of most popular applications

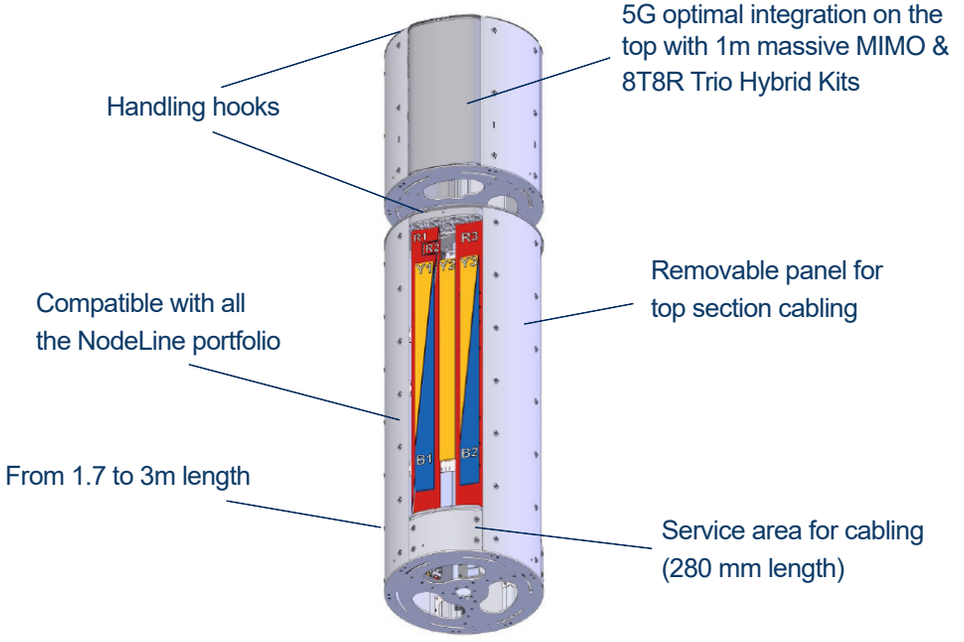


Trio NodeLine

Up to three NodeLine antennas inside a low visual impact cylindrical enclosure.
Discretely deployed as mast head, roof-top vents, ...

Innovative features

All NodeLine antennas (1.4 m, 2 m & 2.7 m) can integrate a Trio structure :

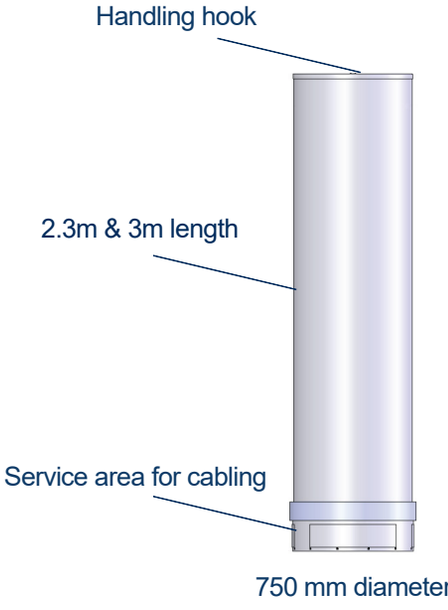


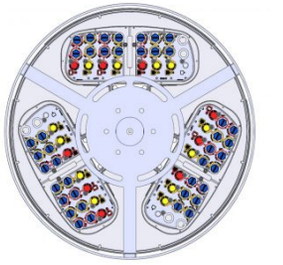
Trio TwinLine

Up to three-sector TwinLine antennas inside a small, low visual impact cylindrical enclosure.
Discretely deployed as flag poles, roof-top vents, street lamps or telephone poles.

Features

2m and 2.7m TwinLine can be integrated into this Trio structure :

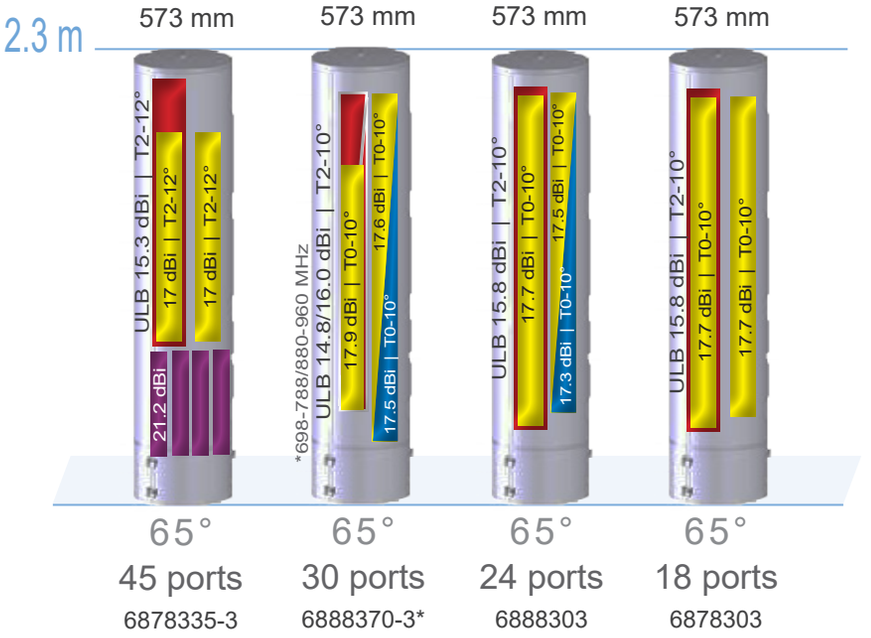




Up to 48 ports

Trio UltraLine

Up to three-sector UltraLine antennas inside a small, low visual impact cylindrical enclosure.
Discretely deployed as flag poles, roof-top vents, street lamps or telephone poles.



Ultra Low Band (ULB)

*Filtered Ultra Low Band (ULB)
2 Ports 698-788 MHz
2 Ports 880-960 MHz

Ultra Wide Band Array (UWB)

Filtered Array Ultra Wide Band (UWB)
2 Ports 1695-2180 MHz
2 Ports 2490-2690 MHz

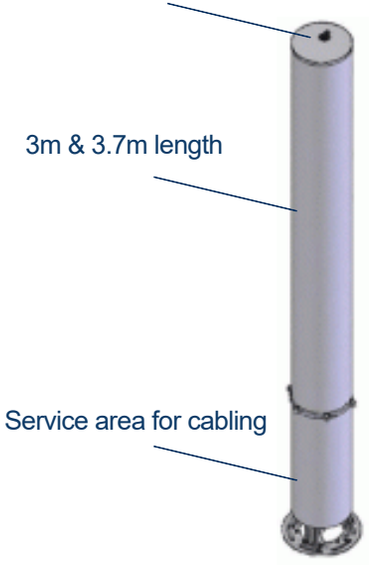
3300-3800 MHz / 8T8R

CylLine Antennas

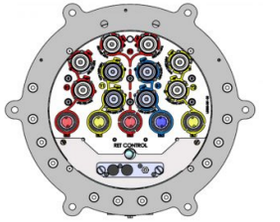
Single sector UltraLine inside a cylindrical, low visual impact enclosure.
Discretely deployed as flag poles, roof-top vents, street lamps or telephone poles.

Features

2m and 2.7m UltraLine can be integrated into this CylLine structure :



350 mm diameter



Up to 10 ports

Medium Cell Canisters

Extensive range of medium cell canister antennas capable of covering any need for adding capacity to your macro site network. Our quality portfolio covers anything from simple short range 2 port canisters, up to 32 ports / xx km range antennas.

A comprehensive range :

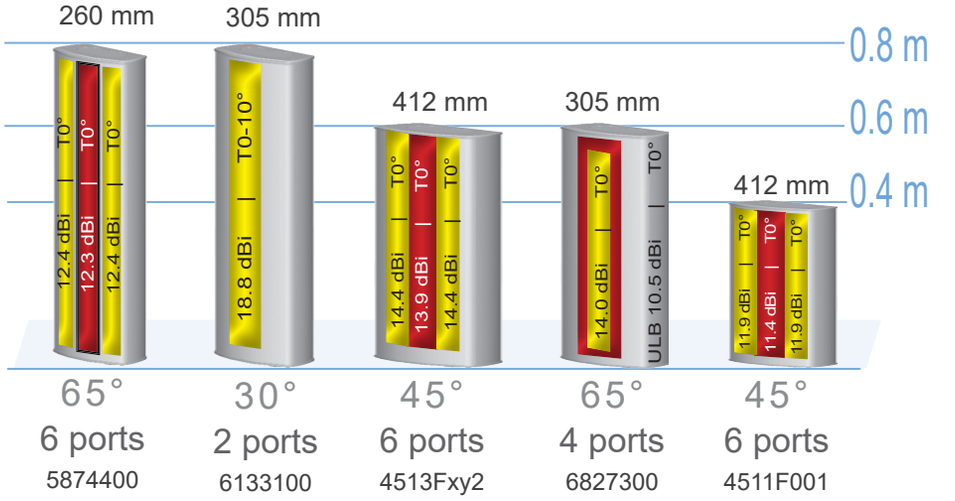
- Size : 0.6, 1.2 and 1.5m length, Ø 371 mm
- From 2 to 32 connectors
- Up to 6 different radiation pattern profiles
- Multiband from 700 to 4200 MHz
- Diplexed & non-diplexed ports

Available
Radome Colors:

- Grey
- Black
- Brown

Small Cell Panel Antennas

Innovative wide band, dual band and tri band antenna configurations allow one distributed antenna system to serve multiple service providers with minimum visual impact.



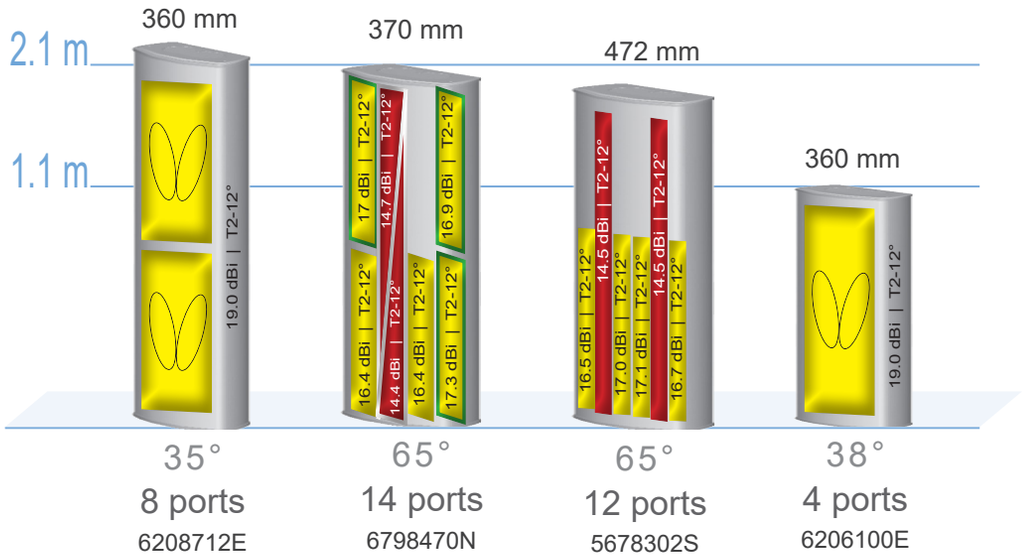
Extended Low Band (ELB)
790-960 MHz

Ultra Low Band (ULB)
698-960 MHz

Ultra Wide Band Array (UWB)
1695-2690 MHz

Other Panel Antennas

Multibeam and tailored antennas for different field applications.



Ultra Low Band (ULB)
698-960 MHz

*Filtered Ultra Low Band (ULB)
2 Ports 698-862 MHz
2 Ports 880-960 MHz

Ultra Wide Band Array (UWB)
1695-2690 MHz

Mega Wide Band Array (MWB)
1427-2690 MHz

Twin Beam

Any further needs ?

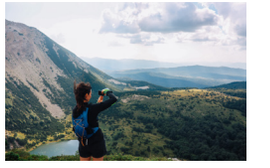
We are here to answer your questions

Customised antennas such as specific beamwidth, ...

Study for specific integration (camouflage, ...)

Project including mast and cabinet for medium cell and residential areas

More information about our green initiatives



Questions or interest in a specific topic

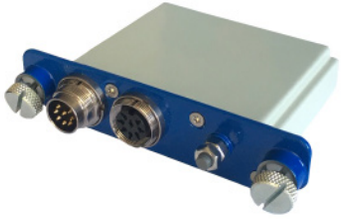
Contact the European team at :
sales@amphenol-antennas.com

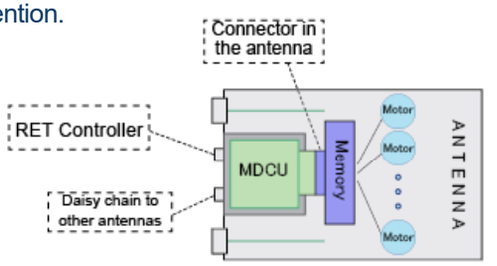
RET Control Systems

Amphenol offers patented fully integrated RET control units. The RET control units add no additional length to the antenna and are field replaceable. No calibration is required. Each RET is configured for the antenna and pre-commissioned at the factory. The electrical downtilt indicator is always visible and manual control is always possible. AISG v2.0 / 3GPP and Ericsson protocols. Compatible with most BTS vendors.

MDCU

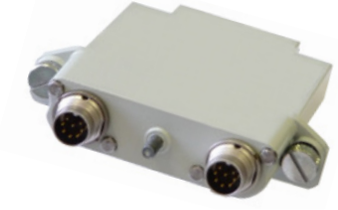
One module control the electrical downtilt of all the arrays of an antenna. In 2020, the newly manufactured antennas will be equipped with memory, allowing to configure the RET without human intervention.

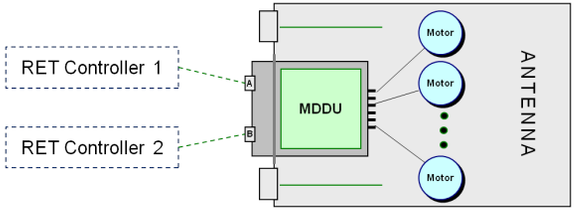




MDDU

Intended for site sharing. One module has two separate inputs, each controlling the electrical downtilt of the arrays of one operator.



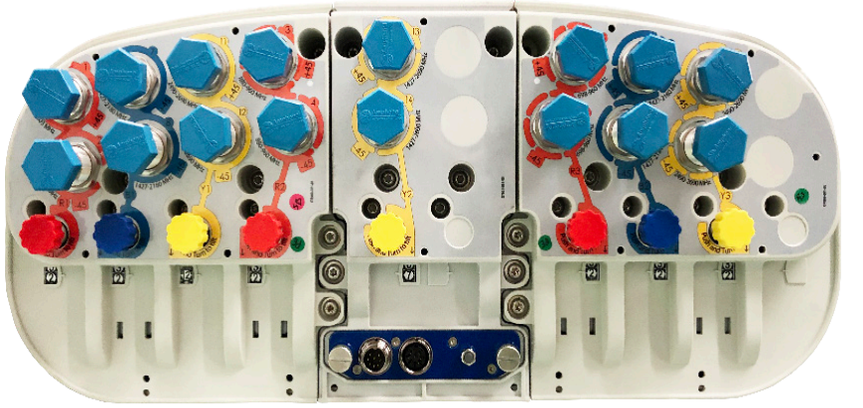


4th Generation Integrated RET

featuring new Memory system integrated in the antennas

The last generation RET/VET system was designed with the objective of more efficiently using the available space, while also making it more durable and easier for field operations. For the new generation, we keep all the benefits of the 3rd generation, with previously unseen innovation : the RET is able to recognize an antenna and automatically reconfigure itself. In the new antennas delivered with smart multiplexing, a memory is included that matches with the antenna identity. When an MDCU is inserted, it will automatically take the configuration of the antenna without human intervention.

To make the most of the new RET generation, we will change the software to the A2-5.0X version. This new architecture with memory is a good way to prepare for the arrival of AISG3.0.



Site Solutions

Amphenol Antenna Solutions offer an extensive range of wireless infrastructure products including not only quality base station and Small Cell antennas, but also transmission line products such as RF jumpers, Hybrid fiber cables, AISG cables, connectors, ...

Amphenol ANTENNA SOLUTIONS

Jumper Cable Assemblies

Amphenol's premium Jumper Cable options are designed for outdoor applications under extreme conditions with high flexibility and small bending diameters. Cable assemblies are available in a variety of lengths and connector combinations and are waterproof per the IP68 water immersion testing standard.

Connectors & Adaptors

Amphenol offers a multitude of products for wireless infrastructure. Our fast fitting, precision grade RF Connectors & Adaptors are available in 4.3/10, 7/16-DIN and N-Type with male and female interfaces. All are suitable for both copper and aluminum cable assemblies.

AISG cable

Amphenol Antenna Solutions control cables are compliant to AISG standards and are offered in many different lengths.

Hybrid Fiber Cable

Save installation time and costs with Amphenol's Hybrid Cables. Hybrid Cables simplify tower cabling by providing power and optical connectivity in a single cable. For even faster installation, request factory-terminated assemblies with Amphenol connectors. Custom configurations of conductor counts, cable types or shielding are available with fast-turn delivery.

And many other site equipments

Our Cabinets are designed specifically to protect high density installations of network equipment in outdoor environments and are ideal for wireless, wireline, and utility and applications.

Amphenol Antenna Solutions can aslo provide more products from the top of the tower to the base station.
Please contact the European Team :

sales@amphenol-antennas.com

Amphenol Antenna Solutions

Across the world. Around the corner.

Our world-wide base station antenna sites

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