

MDDU Module for Antenna Sharing

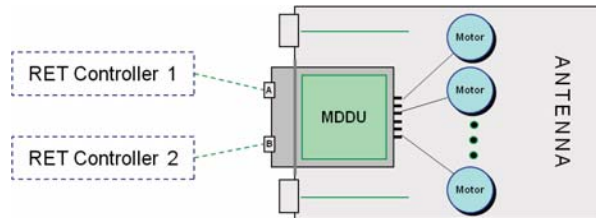
RET Actuator | Multiple Device Dual Unit for Single Band or Multi-Band Antennas

- **Dual** version of our MDCU module for the remote control of the electrical downtilt on SLIMLINE, TWINLINE, ULTRALINE, HIGH BAND, CYLLINE and TRIO antennas
- Two independent inputs for **antenna sharing** with separate control from two different RET controllers / NodeB
- Capable of different protocols: AISG 1.1, 3GPP/AISG 2.0, Ericsson
- Does not protrude from the bottom of the antenna
- Easy to install thanks to the captive screws

Description

The MDDU (Multiple Devices Dual Unit) is a unit that allows two separate RET Controllers to independently drive the RETs in antennas with factory installed motors. An MDDU is equivalent to having two MDCUs connected to all the motors. The size of the MDDU is similar to an MDCU and it can be installed in place of an MDCU in an antenna.

The module has two AISG male connectors (one per internal MDCU) to provide independent control access. Each internal MDCU is called the A or B sub-unit according to the photo below.



Independently of the other sub-unit, each internal sub-unit can be factory set to any protocol, can be factory set to drive any quantity of the internal motors and can run its protocol without interfering with the other sub-unit.

Two motors cannot move at the same time. If one RET Controller has sent a Set Tilt command or a Calibrate command, then the other RET Controller will receive a Busy response if it tries to perform one of these actions. It will have to wait for the completion of the motor move before it can obtain its own motor move.

When an MDDU module is installed in an antenna, all the tilt indicators remain visible and manual change of the tilt is still possible (manual override, the controller will read the new tilt setting).

Technical Data

Input control port	Two male AISG 8 pin connectors (type IEC60130-9 Ed 3.0) for control data and power supply of each internal sub-unit.
Daisy chain port	None (daisy chain of RET units by external splitter)
Power supply	For each half internal unit: +12V (pin 1) or +24V (pin 6) DC. If both voltages are supplied, the unit is powered by the 24V line. Compatible with 10V...30V on pin 6 and on pin 1.
Power consumption	Stand-by: 0.5 W per half internal unit ; During tilt change: 4 W typical / 10 W max.
Data lines / data rate	RS485 / 9.6 kbps for AISG, 115 kbps for Ericsson protocol
Control protocol	HDLC (level 2) and commands/responses (level 7) as per AISG 1.1 or AISG 2.0/3GPP or Ericsson protocol (depending on the part number of the device). Software upgrade by the download functionality is implemented in AISG protocols.
Tilt change duration	Typically less than 15 seconds (may depend on antenna type and outdoor temperature)
Precision	± 0.5°
Tilt change capability	50 000 minimum



Granted or pending patents apply to this product. Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

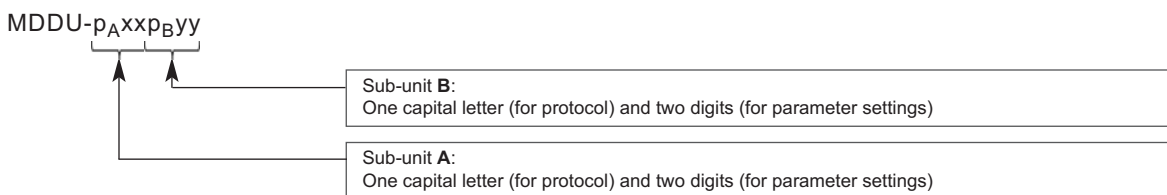
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Technical Data	
Dimensions (approximate)	Depth excluding connectors: 106 mm (4.2 in); only 31 mm (1.2 in) outside the antenna Width: 80 mm (3.1 in) Height: 25 mm (1.0 in)
Weight (approximate)	400 g (0.9 lbs)
Temperature range	-40°C to +60°C (-40°F to +140°F) operating with tilt change (motor operation), no icing -40°C to +70°C (-40°F to +158°F) operating stand-by (no motor actuation) or storage.
IP rating	The unit is a plug-in module that is installed inside the antenna. There is no specific IP rating that applies to it.
Installation	The unit is fitted inside the antenna and secured with captive screws. Before inserting the unit inside the antenna, there is no need of prior positioning of either the unit or the antenna tilt mechanism to a dedicated position. A spare or retrofit unit will need to be loaded with configuration data unless it is ordered as factory set to a specific antenna type.

Part Numbering

An MDDU can be factory set a number of ways due to the parameters setting of the A and B internal sub-units. The MDDU part number is built as follows:



Coding of the protocol:

The letters p_A and p_B code the protocol to which the A or B sub-unit is set at time of shipment:

G	3GPP / AISG 2.0 protocol (with RETs responding as 3GPP single antenna devices)
A	AISG 1.1 protocol
E	Ericsson proprietary protocol

Note: The 3GPP / AISG 2.0 protocol with RET units responding as a 3GPP *multi-antenna* device is not yet implemented.

Coding of the parameters setting:

The pair of digits xx and yy are used to code the parameter settings of the A and B sub-units. This corresponds to the antenna RET motors that will be driven by each sub-unit. There is no specific coding way and a new combination is allocated when it is needed. The table below shows some typical codes already allocated.

Allocated MDDU part numbers:

Because of the various setting possibilities, there are numerous MDDU part numbers already allocated. Consult Amphenol for detailed descriptions of any particular MDDU code. The table below indicates the basic MDDU part numbers.

MDDU-G00G00	Both A and B sub-units control all the internal motors of the antenna
MDDU-G02G01	For TWIN single-band antennas: Sub-unit A: controls the motor on the RIGHT side of the antenna Sub-unit B: controls the motor on the LEFT side of the antenna
MDDU-G10G12	For TWIN dual-band antennas: Sub-unit A: controls all the motors on the RIGHT side of the antenna Sub-unit B: controls all the motors on the LEFT side of the antenna
MDDU-G20G22	For TWIN triple-band antennas: Sub-unit A: controls all the motors on the RIGHT side of the antenna Sub-unit B: controls all the motors on the LEFT side of the antenna

Replace G with A for AISG 1.1 protocol. Consult Amphenol for Ericsson specific protocol.

Additional coding values will be defined when necessary. Please contact us for uncovered needs.

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"RET-Ready" Antennas

Thanks to the small size and its installation inside the antenna, Amphenol can deliver antennas with the MDDU already installed and pre-commissioned to fit all antenna parameters. Every RET device is factory configured and calibrated, and informative data like antenna model number and serial number is factory loaded.

The antenna is ready to be used upon delivery to a site. There is no need for further installation of the RET devices nor for programming the configuration or for running a calibration process.

This is what we refer to as **"RET-Ready" Antennas**.

In addition, each RET ID (Serial Number) will use the first (most left) character to indicate the colour of the corresponding frequency band of the antenna. This helps greatly during site commissioning by the ease it provides to distinguish between the RET devices shown by the AISG controller in the device list.

Note: When delivered as spare or retrofit units, an MDDU will have a letter Z instead of the colour coding letter as the first (most left) character of its RET ID (Serial Number). Such spare or retrofit units will also not be configured to any antenna unless the purchase order specifically asks for it. It will need the usual upload of a configuration file before the first operation.

Please keep in mind that with the Ericsson protocol it is not possible to send a configuration file to the RET unit; the MDDU has to be factory set to an antenna type before delivery.

"RET-Ready" Antenna Part Numbers

We have specific part numbers for antennas delivered with the MDDU already installed. Please contact us for more information.

