

Optimizer® RT Antenna Remote Tilt System

General Description

The Optimizer® RT antenna control system permits accurate antenna tilt operations to be conducted - without riggers or crane equipment - either from tower base or the network management center.

Features

- Can fully retrofit to standard RFS APXV antennas. This reduces the initial network investment.
 - No components are housed in the antenna.
 - An operator can decide on appropriate sites at a later date.
 - You do not have to order a special version of antenna.
 - Can fully service/replace without replacing the antenna.
- Can tilt direct from one setting to another.
 - You do not have to tilt to an extreme each adjustment.
- Site learn capability.
 - Interrogates the antenna for serial number, antenna type, tag number and the current tilt setting. This prevents the loss of site data.
- Antenna control units can be controlled either via the antenna feeder cable or via a single separate multi-core cable.
- Allows an interface with Network Management Software. This allows antenna down tilting to become an additional easily accessed optimization tool.
- Controls up to 30 antennas at one site.
- 3 levels of security.
- Industry standard Bus - RS485, Modbus RTU or AISG.
- Modem control via RS232 serial port.
- Windows based control software.

Flexible site cabling systems

Cabling of the Optimizer® RT system is simple and straightforward. RFS provides a complete selection of network cable, jumper cables, ACU plug connectors, bias-T's and cable terminations, ensuring easy site connection.



Antenna Control Unit being fitted to an antenna

Methods of connection:

1. Via antenna feeders using AISG compatible bias-T's
2. Via antenna feeder using an AISG compatible RFS Tower mount amplifier (TMA) and AISG compatible bias-T.
3. Via a single separate cable using AISG or modbus RTU protocol.

Simple 'daisy chain' format

Base station ACUs are interconnected in simple 'daisy-chain' format. This ensures optimal cabling flexibility for the widest array of base station configurations.

Connectivity to multiple ACUs

A single system can link up to 15 ACUs over a maximum cabling distance of 200 meters.



Control Network Interface unit

Optimizer® RT Antenna Remote Tilt System

Typical description of UMTS site

Variable Tilt Antenna

All the Optimizer variable tilt antenna range can be updated using our Optimizer RT system for remote tilt control.

ACU: Antenna Control Unit

The ACU-A11 Antenna Control Unit is part of the AISG compliant Optimizer RT remote tilt system.

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Electrical Specification

1. Supply voltage - 12-24 VDC
2. Power consumption - Standby 50 mA, during tilt 500 mA
3. Gas discharge tube and MOV surge protection
4. 8 pin circular connectors (IEC 60130-9 with locking screw + IP67 without cap) 1-male, 1-female
5. Meets EMC immunity: standard EN50082-1 and EN50081-1
6. Compliant with AISG Standard V1.1

TMA: Tower Mount Amplifier

The AISG TMA features the same RF functionalities and specifications as the standard TMA and includes communications features compliant with the AISG protocol that allow a remote monitoring of the equipment.

All the AISG TMAs include an AISG output connector to an Antenna Control Unit (ACU) for remote Electrical Tilt (RET).

Please refer to the RF Conditioning section of this catalog on page 240.

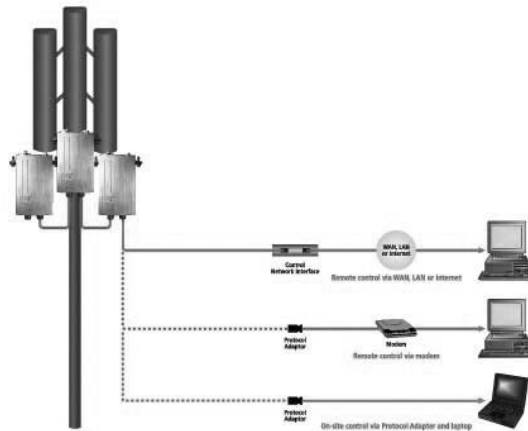
Bias-T

The BITA Bias-T has an AISG modem integrated that converts the 2.176 MHz on/off shift keying signal (OOSK) to RS485 communication.

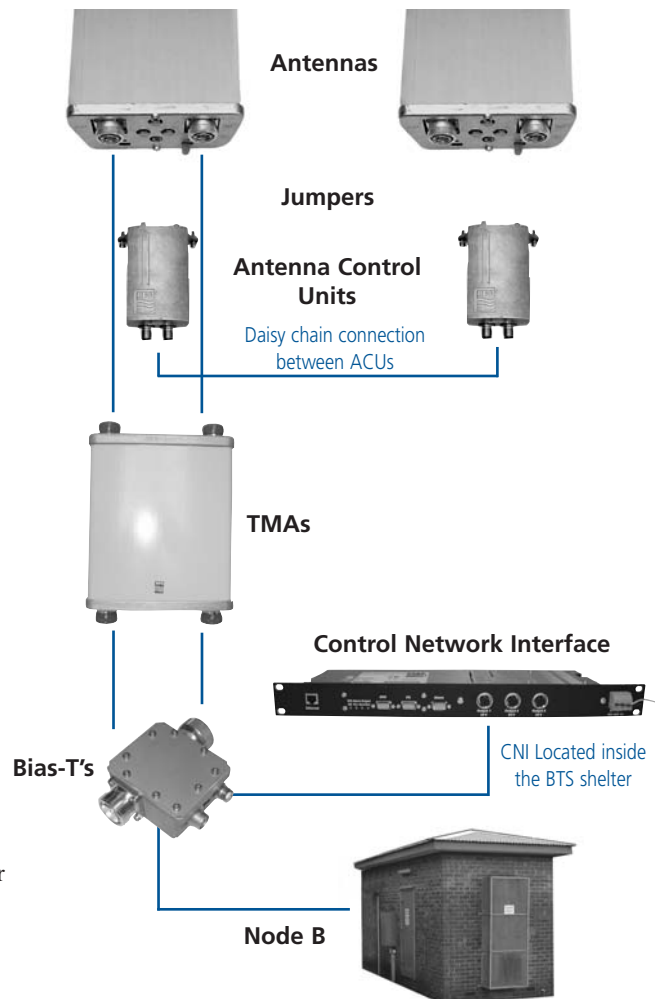
The BITA Bias-T is compatible to the AISG Protocol Standard (Antenna Interface Standardization Group). The BITA Bias-T can be used either indoor at Node B level to inject the DC current on the feeder, or outdoor at the top of the tower to extract DC current for the TMA and ACU. Please refer to the RF Conditioning section of this catalog on page 242.

CNI: Control Network Interface

The Control Network Interface and Power Distribution Unit (CNI-P) is used for delivery of DC current to the Antenna Line Devices (ALDs) as well as managing alarm control. The CNI-P supports the AISG signaling between Node B and the ALDs such as TMAs and ACUs.



AISG System - RET and TMA



RFS is a member of the Antenna Interface Standards Group.



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AISG Software Features

Applications

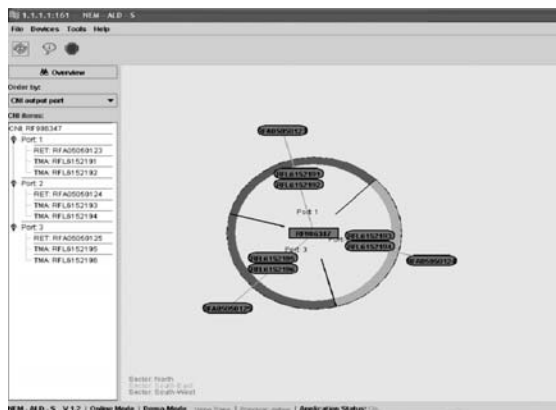
NEM is a network element manager, which can be used in connection with network management system. It interfaces with AISG compliant devices. It allows cell-based wireless carriers to control TMA and RET locally from the tower base, or remotely from the operations and maintenance center (OMC). The NEM software's primary functions are to set antenna properties – such as beam tilt – while monitoring all antenna system components, including CNI, TMA and RET control units.

Product Description

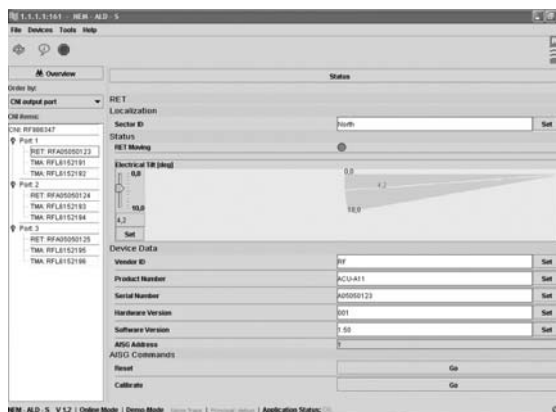
The PC-based software is available in two versions: the NEM-ALD-A and NEM-ALD-S. The NEM-ALD-A is designed to support local AISG protocol-compliant communication with antenna system components. The NEM-ALD-S is designed to support simple network management protocol (SNMP), including file transfer protocol (FTP) communication, to be used from the OMC. To provide a complete system, the software communicates with the control network interfaces (CNI) module, which is an autonomous AISG primary station to interface with SNMP communication. Fully compliant with the AISG version 1.1 open control interface specification for antenna line devices (ALD), NEM incorporates monitoring, and easy configuration by automatically detecting all the connected ALD modules. A user-friendly Graphical User Interface (GUI) guides the user easily through the set-up wizard and allows configurations and supervision of the ALDs. The NEM software can easily be updated to a newer version through a simple FTP download when new AISG protocol releases call for embedded software updates.

Features and Benefits:

- AISG protocol compliant
- Support up to 30 ALDs
- User-friendly GUI
- Clear overview and easy menu
- Provide remote tilt setting
- ALD alarm monitoring
- FTP software download
- Easy set-up wizard

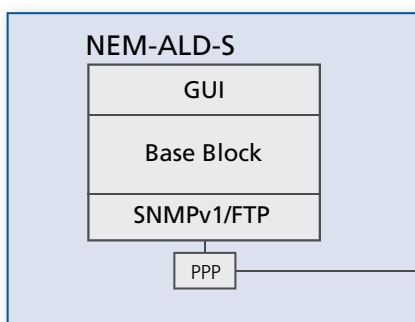


System overview window:



Remote tilt window:

RFS software architecture



MS Windows

