

Utility Communications

UMTS / GPRS / EDGE SCADA Modem AG100i

Cellular network services can be used for telemetry applications which don't require communication in real time and a high reliability or for which it is uneconomical to build radio signal coverage.

ABB has developed the AG100i SCADA modem for such purposes which communicates via GPRS / EDGE / UMTS and complements the SCADA radio network in places where it is not possible to use a more suitable transmission medium - radio channel.

High-quality and fast communication using the AG100i are dependent on the actual properties and loading of the given cellular network.

They are typically used in nodes where there is no particular emphasis on a guaranteed response time and with unfrequent transmission.

AG100i modems are fully compatible with ABB VHF/UHF SCADA radio modems on user interfaces and are controlled via the same software tools and Network Management. This allows the implementation of hybrid wireless network where each telemetry device can be linked via the most appropriate media.

Several hardware/path redundancy solutions are also possible.



Designed for mission critical applications

Typical areas of use

- Complements ABB's VHF/UHF SCADA radio network in places where it is uneconomical to build radio.
- For network points where there is no emphasis placed on a guaranteed response time.
- For network points which communicate unfrequently (several times a day).
- For network points where potential cellular network failures are not critical.
- For supplementing the VHF/UHF SCADA radio network with a point through which it is possible to perform remote supervision, servicing, and diagnostics of radio modems (in places where other remote access is not possible, e.g. via Internet).

Benefits

- User compatible with radio modems
- Dynamic and static IP addresses
- Sleep mode with power consumption 2.5 mA
- Modular concept - Ethernet, RS232 max 3x, RS422/485 max 2x, GPS, I/O module interface
- SCADA protocol oriented units
- Security features and optional encryption
- Routing functionalities
- Design for harsh environment, high mechanical ruggedness metal casting
- Assembly on DIN rails or using 4xM4 screws
- Programs for remote control, set-up, and diagnostics
- Functionality proven in extreme climatic conditions in various parts of the world



Modules

Serial interfaces:

available variants - 2xRS232, 1xRS232 (optically isolated), 1xRS422/485 optically isolated.

Ethernet:

fully-fledged Ethernet type interface automatically sets communication to a speed of 10 or 100 Mbit/s.

GPS receiver:

precise time sync telegrams delivered to RTUs.

I/O:

I/O interface module with 2xAI, 2xAO, 2xDI, 2xDO. Communication with the I/O board over Modbus protocol. Other protocols implemented as required.

Controlling your system

Control and diagnostics

ABB's UMTS (GPRS-EDGE) modems are set up and controlled using programs supplied for MS Windows and Linux. The programs communicate via the serial port or via Ethernet either directly with the connected device or remotely with any device in the network.

Control software is used for setting up of the radio and communication parameters, user interfaces, monitor unit's operation and obtain detailed statistics.

It is possible to save and load a file with the complete device configuration and firmware in equipment can be locked at several levels against unauthorised use.



Technical data

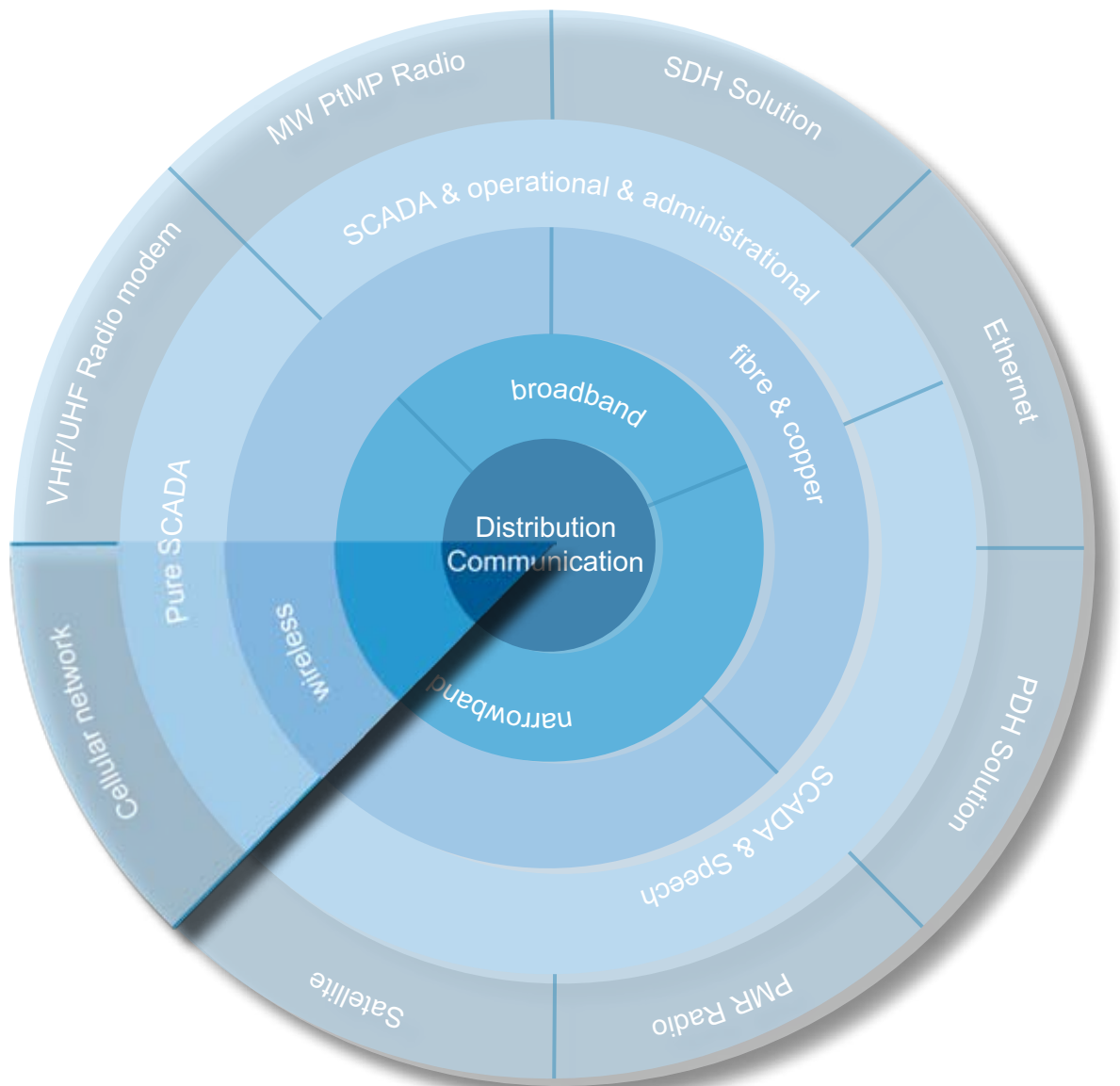
AG100i variant 1	Quadband GPRS (850, 900, 1800, 1900 Mhz)
AG100i variant 2	Quadband GPRS/EDGE (850, 900, 1800, 1900 Mhz), single band UMTS (WCDMA/FDD, 2100 Mhz)
User interface modules	5 slots
Antenna connector	FME-male
Power supply typically	13.8 V (10.8 –15.6)
Idle consumption (Rx)	max 260 mA (depending on mounted user modules)
Consumption during transmission (Tx)	max 350 mA (depending on mounted user modules)
Consumption in SLEEP mode	2.5 mA
Range of operating temperatures	-30 to +65 °C
Case dimensions	208 × 108 × 63 mm
Weight	1.2 kg

Compliant with standard for

EMC (electromagnetic compatibility)	ETSI EN 301489-5 V 1.2.1:2000
electrical safety	CSN EN 60 950:2001
use in mobile environments	UN Regulation No.10 (EHK No.10)

Communication for your distribution network

ABB has the know-how and product portfolio covering various communication technologies. ABB designs networks that apply the most suitable technology and media for your power system topology, existing communications equipment for present and future requirements.



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