AW400BT with GSM

AW400BT with GSM is the up-to-date unsurpassed 4 W UHF radio transceiver with USB and Bluetooth® capacity, and built-in quad band GSM/GPRS module. AW400BT accesses VRS network via GPRS, takes incoming data from the network, modulates it with GMSK, FSK, PSK or most spectrum efficient QAM modulation and transmits it at RF power output levels from 15 dBm up to 36 dBm operating in UHF frequency band (406 to 470 MHz). The data taken from VRS network can be routed to the UART, USB or Bluetooth communication ports as well. AW400BT is also capable of receiving RF signal from remote UHF transmitter or data from communication ports (UART, USB or Bluetooth) and sending it over the cellular network using built-in GSM/GPRS module if such operation mode is selected.

The unmatched features of AW400BT include:

- 16 miles (26 km) maximum distance range
- Full speed USB 2.0 device port
- GSM/GPRS quad band 850/900/1800/1900 module
- Bluetooth® Interface
- Data speed over the air 38400 bps at 25 kHz and 19200 bps at 12.5 kHz
- Programmable Output Power (32 mW to 4 W)

- Advanced Forward Error Correction (FEC)
- Serial port configurable as RS-232 or RS-422, or RS-485
- Data speed over the serial port 9600 to 115200 bps
- Testing, monitoring and control of the unit over the air
- AlphaWave SuperScan® - automatic search and select for best frequency/channel
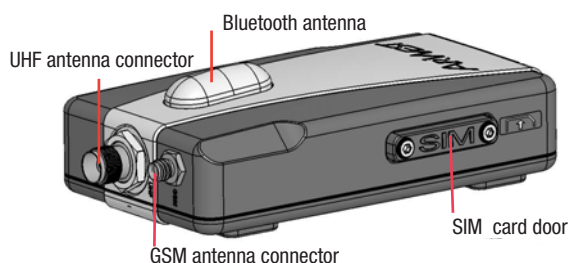
The AW400BT radio transceiver provides a high-speed point-to-point and point-to-multipoint wireless data transfer at up to 38.4 kbps. The firmware supports user selectable modulation techniques, which allows the user to achieve the highest data speed for a given range. It also includes a selectable error correction, which improves the functioning of the radio modem under interference. The sophisticated features of AW400BT include data scrambling, frequency hopping, user selectable transmit output power level, low power consumption sleep modes, autoscanning for base and plug-and-play installation for remote terminals.

The firmware of the AW400BT radio modem resides in a flash memory. The updating of the radio modem programs is entirely software-based. The flash memory is re-programmable through an RS-232 interface, USB, Bluetooth. Accessing to the internet via GSM/GPRS module the AW400BT provides remote CLI access and can be configured remotely if corresponding operation mode is selected.

AW400BT with GSM

General Radio Specifications

Parameter	Specification
Operating Frequency Range	406 - 470 MHz (EU) 406.1 - 470 MHz (USA) 406.1 - 430; 450 - 470 MHz (Canada)
Channel Spacing	25/12.5/6.25 kHz (USA for 406-420 MHz) 12.5/6.25 kHz (USA for 421-470 MHz) 25/12.5/6.25 kHz (Canada) 25/20/12.5 kHz (EU)
Data Rate (25/20/12.5/6.25 kHz Channel Spacing)	9600/7500/4800/2400 bps – DBPSK/GMSK 19200/15000/9600/4800 bps – DQPSK/4FSK 28800/22500/14400/7200 bps – D8PSK 38400/30000/19200/9600 bps – D16QAM
Roaming Speed for DBPSK modulation	75 mph / 120 km/h
Modulation	GMSK/4FSK/DBPSK/DQPSK/D8PSK/D16QAM
Communication Mode	Time Division Duplex (TDD) Time Division Multiple Access (TDMA)
Maximum Distance Range	16 miles / 26 km
Serial port	Serial (RS-232) up to 115200 bps. Serial port configurable as RS-232 or RS-422, or RS-485
USB	USB 2.0 device port
GSM/GPRS Module	Internal GSM/GPRS quad-band module 850/900/1800/1900 MHz
GSM/GPRS Antenna	External
Bluetooth (antenna embedded)	Bluetooth V2.0 Class 2 supporting SPP Slave and Master Profiles

UHF antenna connector
Bluetooth antenna
GSM antenna connector
SIM card door

DB15 Connector Specification

Pin #	Signal Name	I/O	Description
1	DCD_OUT	O	Data Carrier Detect (RS-232)
2	DTR_OUT	O	Data Terminal Ready (RS-232)
3	RX+/CTS_IN	I	Receive Data positive line (RS-422)/ Clear to Send (RS-232)
4	RX-/RX_IN	I	Receive Data negative line (RS-422)/ Receive Data (RS-232)
5	PWR_IN	I	+9 to +36 VDC Power Input
6	USB_PWR	I	Power Input line (USB)
7	Ground	-	Power Ground
8	PWR_IN	I	+9 to +36 VDC Power Input
9	DSR_IN	I	Data Set Ready (RS-232)
10	TX+/RTS_OUT	O	Transmit Data positive line (RS-422) / Request to Send (RS-232)
11	TX-/TX_OUT	O	Transmit Data negative line (RS-422) / Transmit Data (RS-232)
12	Ground	-	Power Ground
13	USB_D+	I/O	Positive line (USB)
14	USB_D-	I/O	Negative line (USB)
15	Ground	-	Power Ground

This connector provides DB15 connectivity for the AW400BT with DTE.

About using and configuration RS-485 and RS-422 please contact support@arwestcom.com

9   15

1   8

Environmental Specifications

Parameter	5Specification
Temperature	Operating –40°C to +70°C Storage –40°C to +85°C
Enclosure	Aliminum, IP66
Dimensions (H x W x D)	146 mm x75 mm x44 mm
Weight	488 g
Power Supply Voltage	+9 to +36 VDC nominal
Power Consumption (Average)	18W / 2W / 0.01W –Transmit / Receive / Sleep
Color	Two-tone Silver / Gray
RF Antenna Connector	TNC, 50Ω
GSM Antenna Connector	SMA

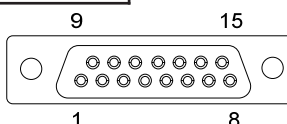## Transceiver Specifications

Parameter	Specification
Output Power USA, Canada	15 dBm to 36 dBm in 1 dB steps (32mW to 4W)
EU	15 dBm to 36 dBm in 1 dB steps (32mW to 2W)
Output Power Control Accuracy	±1.5dB (at normal test conditions) +2.0dB and -3.0dB (under extreme test conditions)
Max. Frequency Error	±1.0 kHz (at normal test conditions) ±1.5 kHz (under extreme test conditions)
Noise Figure	4 dB
Receiver Sensitivity DBPSK	-116 dBm 25kHz / -117 dBm 12.5kHz
(BER 1x10^{-4}, 25 kHz CS) DQPSK	-115 dBm 25kHz / -116 dBm 12.5kHz
D8PSK	-110 dBm 25kHz / -111 dBm 12.5kHz
D16QAM	-106 dBm 25kHz / -107 dBm 12.5kHz
GMSK	-113 dBm 25kHz / -114 dBm 12.5kHz
Dynamic Range	-115 to –15 dBm
Max. Input Signal Level	-10 dBm
Adjacent Channel Selectivity	70 dB for 25 kHz Channel Spacing 70 dB for 20 kHz Channel Spacing 60 dB for 12.5 kHz Channel Spacing 50 dB for 6.25 kHz Channel Spacing

Compliance

Parameter	Specification
FCC	Part 90
Industry Canada	RSS-119
R&TTE	ETSI EN 300 113-2; ETSI EN 301 489-5; EN 60950-1:2006

Internet Services

Parameter	Specification
TCP server	Runs a TCP server on the specified port of the hostname provided by cellular network operator, accepts the connection from authorized TCP client, and sends data receiving from RF interface (from a UHF transmitter) or communication ports (UART, USB or Bluetooth) to the connected TCP client. The authorized TCP client has an access to the CLI of the unit also.
TCP Client	Connects to the specified TCP server, takes incoming data from the network, modulates with supported modulation types, and transmits it at RF power output levels from 15 dBm up to 36 dBm operating in UHF frequency band (406 to 470 MHz). The incoming data from the TCP server can be routed to the UART, USB or Bluetooth communication ports also.
NTRIP Client	Connects to the specified NTRIP caster and uses the incoming data as described above.

Specifications are typical and subject to change without prior notice