

ECHO Sphere



ECHO Sphere is a gateway device suitable in combination with various Automatic Meter Reading scenarios.

- ✓ Suitable for AMR fixed networks design and installation
- ✓ Up to 10.000 Sensus RF / Wireless M-Bus meter readouts
- ✓ Wireless M-Bus OMS / Sensus RF with high sensitivity radio antenna
- ✓ Compatible with already installed Wireless M-Bus OMS / Sensus RF systems
- ✓ 230V/50Hz power supply with backup battery power supply or 3.6V standalone battery power supply
- ✓ Readout data storage up to 4GB
- ✓ Periodic meter readout data transfer via FTP/SMTP
- ✓ Meter data readout per request

ARSS ECHO Sphere is a compact design gateway device suitable for implementation and integration in various Automatic Meter Reading scenarios. Battery powered version of the device provides easy installation on the field. Transmitted meter readout data are received by embedded Wireless M-Bus OMS or Sensus RF receiver and stored in the local device memory. Meter readout data can be sent periodically to a central server location or meter readout data transfer can be achieved from a central server locations per request.

✓ ADDITIONAL FEATURES

Public and private IP network address

Remote firmware upgrade

Remote device commands execution (Reset)

Device configuration data stored in non-volatile memory

Embedded Web server (HTTP) for device monitoring, control and parameters setting using standard Web browser

Remote direct device access using unique IP address

Embedded battery powered Real-Time Clock (RTC)

LED flashing device operation modes

SMS alarm messaging options with customizable SMS message content based on different alarm type

✓ RECORDING OF RECEIVED METER READOUT DATA

Consumption data collecting interval is adjustable

Recording of readout data into embedded non-volatile NAND Flash memory up to 4GB with at least one year readout data storage time with one hour data readout time period

XML readout data storage file format for easy data processing and integration in various information systems

Configurable alarms and alerts for system parameters, system logs storage to non-volatile memory, alarms and alerts transmission using SMS, SMTP or FTP protocols

Meter readout data transfer to one or multiple FTP servers

15 minutes minimum readout data transfer period resolution

Resend or delayed readout data transfer option due to potential connection or data transfer issues or potential system failure



✓ DATA COLLECTION

Wireless M-Bus OMS devices readout according to EN13757-4, Wireless M-Bus T1/C1 Mode, 868.95 MHz, Sensus RF

Radio telegram decryption feature by user AES128-bit decryption keys

Meter readout data processing and storage into non-volatile memory

Up to 10.000 Sensus RF / Wireless M-Bus OMS meters readouts stored

✓ EMBEDDED GPRS MODEM

Standard Micro SIM card holder for mobile network provider
Micro SIM card installation or eSIM embedded IC

GPRS/GSM parameters setup

Periodical GPRS connection checking/restoring

TECHNICAL CHARACTERISTICS

System specifications

Modem	GSM standard SMS, Fax, GPRS Class 12, support for PB-CCH support for 850, 900, 1800, 1900 MHz GSM band
Supported network services and protocol	IP v4, TCP, UDP, DNS (client), PING, POP3 (client), SMTP (client), FTP (server, client), HTTP (server)
FLASH RAM module	Embedded NAND Flash up to 4GB or micro SD card (up to 4 GB)
Processor module (MPU)	Remote firmware update and remote software installation are available.

Wireless M-Bus radio interface

Frequency	868,95 Mhz
Data transfer rate	100 Kchips
Standard	EN 13757-4:2005; mode T1/C1
Radio antenna	868.95 MHz Built-in On-Board antennas Optional external antenna 868.95 MHz, 50 Ω, vertical polarization, omnidirectional, 10 dB min gain, IP67 rating

General

Power supply	AC 100-240V AC, 50/60Hz, 0.35A; P=15W max (+5V DC, 3A)
Battery	Li-SOCI2 battery packs, 3.6V DC, 76Ah max Five (5) years battery supply autonomy based on device configuration
Standards	CE, EN60950-1:2006/A1:2010, EN13757-4 (mode T1)
Housing material	Thermoplastic
Dimensions (w x h x d)	200 × 75 × 120 mm
Colour	Light grey (RAL7035)
Mounting	Bolts on the mountable surface
Connector	2,5 mm2 max.
IP rating	IP67
Operating temperature range	-20°C to +50°C
Humidity	10% to 70% relative humidity
Weight	1.4 kg