

## Cellular modem specifically designed for SAPHIR meters

### UPGRADE THE MODEMS NOT THE SMART METERS!

All around the world mobile operators are shutting down 2G/3G networks in order to give way to 5G. Companies that operate smart meters with 2G/3G connectivity must plan the migration to the latest 4G LTE network which is well-positioned to dominate smart metering communication technologies in the upcoming years. The migration from GSM / UMTS to LTE has many advantages, for example, a shorter readout time due to the high-speed network with low latency.

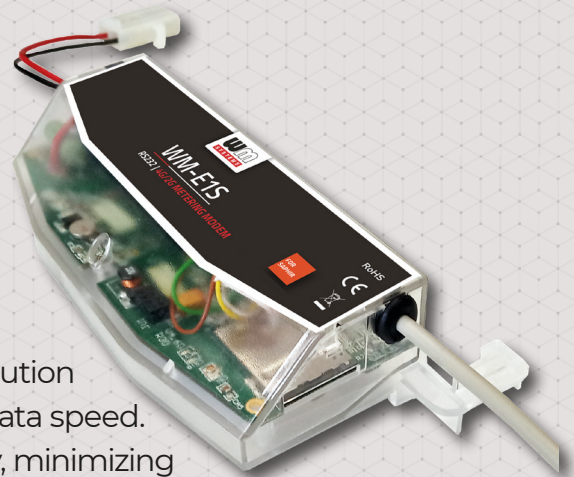
Utilities have two options for migration: replace the meters or upgrade the modems! The 1st option comes with a high CAPEX, while the 2nd option is a future-proof solution that reduces TCO.

Our company develops a cellular modem that work smoothly and is fully compatible with different models of SAPHIR electricity meters. This device was designed to be fully compliant with all SAPHIR standards.

Our cellular modems represent a future-proof migration solution to the LTE network with the same functionality, on higher data speed. Configuration and firmware updates can be done remotely, minimizing the need for costly site visits.

This external modem can be mounted on DIN-rail and connected to the meter through an RJ45 cable. The modem can be configured to "push" the read out the data (current consumption, event log, load profile) from the connected meter and send it to the HES periodically via Internet (by using an APN) at the pre-programmed intervals. Data sending can be also triggered by an alarm (e.g. power outage, cover removal event).

The modem can be accessed remotely through the cellular network. The modem can also read or modify certain parameters of the meter remotely via WM-E Term® configuration software.



### MAIN FEATURES

- Cellular module options: LTE Cat.1 / 3G/2G, LTE Cat.M / Cat.NB / 2G
- External modem in a compact design (separated from the meter)
- It can be fastened securely by its DIN-rail adapter
- AC power supply from the meter's mains connector (by 57/100V AC phase voltage or 230/400V AC line voltage)
- RS232 meter connection (RJ45)
- Compatibility with Saphir® meters (Enedis® and Altys® electricity meters)
- IEC 62056-21 protocol, transparent mode, CSData call
- Optional „push” mode (FTP, IEC or SMS triggered)
- Supercapacitor option (for power outage), LastGASP notification
- Remote & safe firmware updates, WM-E Term® configuration tool
- Device Manager® software (order option)

### APPLICATION

- UTILITY COMPANIES
- SMART METERING
- INDUSTRIAL MEASUREMENT



## DESIGN AND OUTFIT

- External modem, compact design (separated from meter)
- It can be fastened securely by its DIN-rail adapter
- RS232 interface (1m long RJ45 cable for meter connection or modem configuration)
- AC power by meter via pigtail connector (57.7 / 100V phase voltage or 230/400V line voltage)
- External SMA antenna interface (50 Ohm)

## COMPATIBILITY

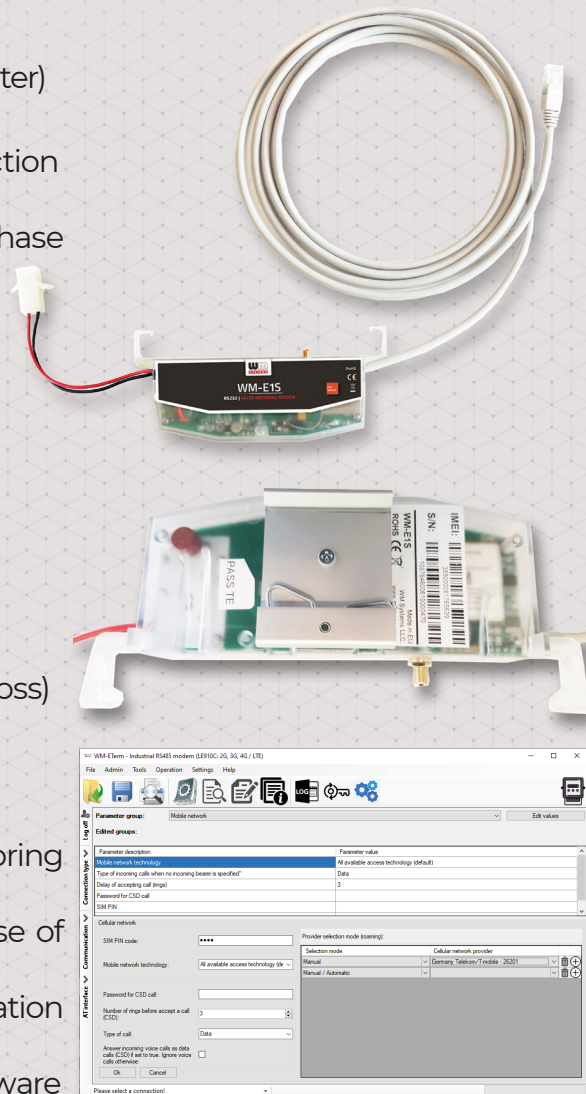
- Saphir® meters (Enedis®, Altys® electricity meters)

## OPERATION

- IEC 62056-21 protocol, transparent data transmission
- „Push” mode (FTP or IEC sending, SMS triggered)
- CSDData call, TLS encryption (optional)
- Immediate alarm SMS notification (LastGASP power loss)

## ACCESSORIES (ORDER OPTIONS)

- External SMA antenna (50 Ohm)
- 35mm DIN-rail adapter (by anodized aluminum with spring steel wire)
- Supercapacitor (for LastGASP SMS notification in case of power outage, status changes)
- WM-E Term® software (mass FW updates, actualization of settings)
- You can manage the device by Device Manager® software



WM-E1S SAPHIR*		LTE Cat.1		LTE Cat.M / Cat.NB	
Power	Voltage	~100-240V AC (57.7-100V AC phase voltage or 100-240V AC line voltage)+15%/-15%, 50-60Hz +/-5%			
	Current/ Consumption	~ Stand by current: 24mA @ 100V, 12mA @ 240V    ~ Average current: 30mA @ 100V, 15mA @ 240V    ~ Maximal current: 0.15A			
Communication module	Cellular technology	~ LTE Cat.1 - 3G/2G "fallback"		~ LTE Cat.M / Cat.NB	
	Internet module	~ Telit LE910CI-EUX		~ Telit ME910CI-E1	
	Bands / Frequency (MHz)	~ LTE-FDD: B1(2100) / B3(1800) / B7(2600) / B8(900) / B20(800) / B28A(700) ~ 3G: B1(2100) / B3(1800) / B8(900) ~ 2G: B3(1800) / B8(900)		~ LTE Cat.M / Cat.NB ~ LTE M1 & NB1: B3(1800) / B8(900) / B20(800)	
	Speed (DL/UL)	~ LTE Cat.1: 10/5 Mbps ~ HSPA+: 42 Mbps ~ GPRS: 80/40 kbps		~ LTE M1 UL/DL: 375/300 kbps ~ LTE NB1 UL/DL: 20-250/250 kbps	
	SIM card slot	~ mini SIM card (2FF type, push-insert SIM)			
	Antenna connector	~ External antenna connector (SMA, 50 Ohm)			
Compatibility	Meter type	~ SAPHIR® meters (Enedis®, Altys® electricity meters)			
Interfaces	Connectors	~ RS232 interface (RJ45, 1m long cable for meter connection / modem configuration) ~ AC power supplied by meter via pigtail connector (~57.7/100V AC phase voltage, 230/400V AC line voltage)			
	Protocol / Transmitting	~ EN 62056-21, Mode C - 300-115200 baud, auto, serial data speed    ~ „Pull” mode, transparent data sending    ~ „Push” mode (FTP or IEC sending, SMS triggered)    ~ CSD data call    ~ Optional TLS encryption			
Operation	Notification	~ Immediate alarm SMS notification (in case of power outage)			
	Configuration	~ WM-E Term® tool (local/mass parameter configuration, local/mass firmware updates)    ~ AT commands    ~ Device Manager software (order option)			
	Indication	~ 3 status LEDs			
	RTC Backup Battery*	~ Power outage <= 1 hour    ~ After 1 hour the RTC will be supplied from the meter			
	Supercapacitor	~ Supercapacitor (for Last GASP SMS notification from power outages) - order option			
Environment	Operating / Storage	~ -40°C to +70°C at 95% rel.humidity    ~ -40°C to +70°C at 95% rel.humidity			
Construction	Design	~ External modem, compact design (separated from meter)			
	Enclosure	~ Assembled into non-conductive plastic enclosure    ~ IP51 protection			
	Fastening	~ Fastened by the assembled Hammond 35mm DIN-rail adapter (anodized aluminum with spring steel wire, 1427DIN standard) for mounting			
	Dimension / Weight	~ 160 x 72 x 38mm (with DIN-rail adapter)    ~ 183gr (with cabling)			



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