



Embee® Smart water system

Features & Benefits:

The Embee smart water system consists:

- from **water meters** with a built-in Embee modems inside.
- one **Gateway** Embee/GSM/3G/Ethernet for 100 – 200 pcs meters per one NAN cluster. **No additional routers, extenders, ets!!!**
- **Smart meters** can be from Ecosystem partners.
- Software **UCon** allows to manage and control.

The water metering system is fully automatic. The basis of the Embee water meter data collection system is the Embee radio network, which operates in the unlicensed frequency range of 2.4-2.48 GHz. Embee radio modems in the water meter are approved for use. Output power of the Embee radio modem implemented in meters from 2 to 10mW. All radio broadcast information is encrypted and cannot be read without a password.

Contacts: KTS-INTEK Ltd

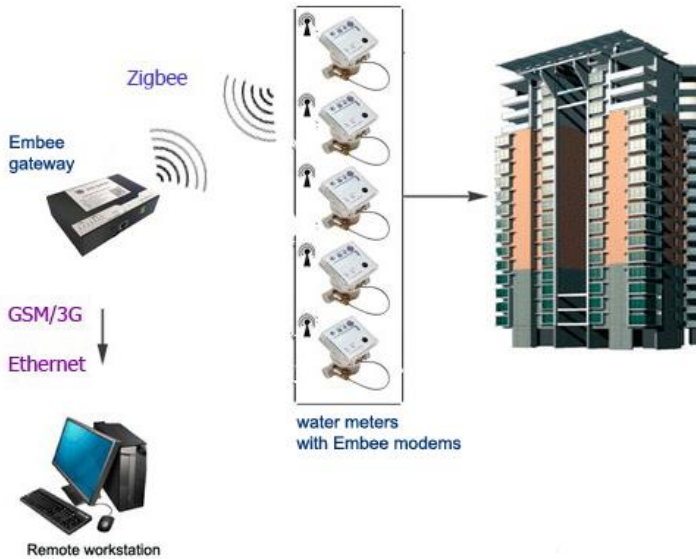
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Once a day (weekly, monthly), at a predetermined time, the meters start transmitting their consumption data to the Embee/GSM/3G/Ethernet gateway. The gateway, after receiving consumption data, logs the status of the meter (external magnetic field interaction, battery level) stores them in its database. After the exchange with the water meters is complete, the gateway sends to everyone a message (~0.5 sec for all meters) about the clock correction, the time of the next data exchange session on the radio network and the command to disconnect from the local network and go offline.

Starting the system in the in multi-story buildings:

Starting the system is as simple as possible. In the first stage, water meters with built-in radio modems are installed, forming a local Embee radio network. When water meters are installed, you must install a Embee/Ethernet/GSM/3G data gateway in any convenient place of multi-story buildings and provide Internet access. This could be wired Ethernet, from an available provider that supplies the internet to consumers, or by inserting a GSM / GPRS / EDGE / 3G SIM card to provide mobile internet access. The gateway that is connected to the power supply will already query the meters on a schedule that will be specified by the administrator. All read information from meters (current figures, journals) and more will be stored in non-volatile memory for 3-5 years. Information stored in the gateway's memory may be accessible by software installed on the administrator's PC.



Technical details of Embee water systems:

Technology / RF spectrum/ Output Power	IEEE802.15.4 / 2.4 GHz / 2 mW
License	No for all countries of the world
Security	encrypted communication, AES 128 keys
Battery inside the meters/ life time	2600mA h, / 4.5 years 5400mA h / 9 years
Communication network	Embee "transparent" for any protocols
Communication protocol of meters	manufacturers of meters
Data exchange schedule	1 time per week (any time)
Information in one data packet (240 Byte)	Data of meter readings, log, battery status, current meter time, session time.
Time of data exchange with one meter in Embee mesh network (one packet)	0.5 sec / for 100 meters per gateway 1 sec / for 200 meters per gateway
Network interface	Embee NAN
Compliant standards	RoHS, EN 61000-3-2(2014), EN 61547(2009), EN 60068-2-1(2007), EN 60068-2-2(2007),

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Gateway Embee/GSM/3G/Ethernet

Technical details of gateway:

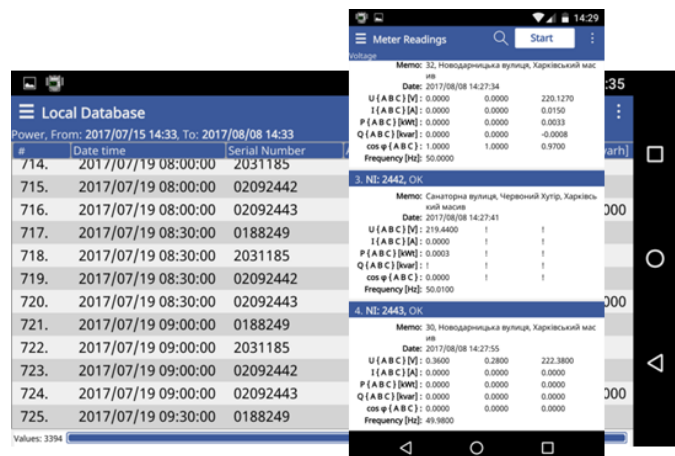
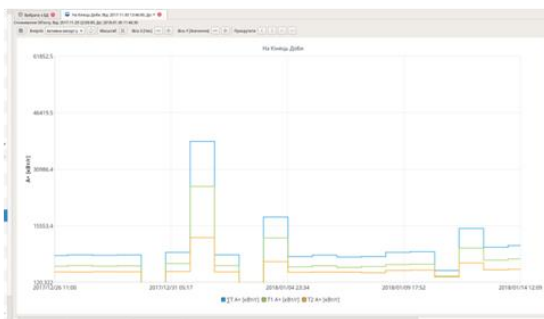
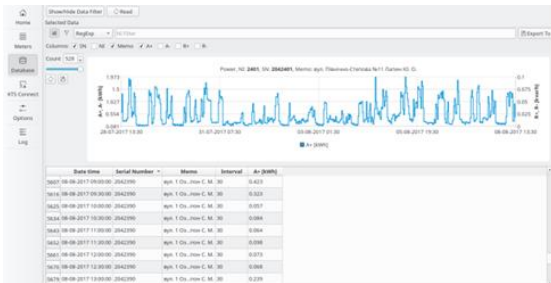


Input voltage	9-27V
Power consumption	15W
Operating temperature range	-30°C to +65°C
Embee modem	EMB-250-100UI-003, external connector SMA-F.
Communication protocol	Embee/ "transparent" for any protocols
Power supply	85 – 260VAC / 50Hz-60Hz
Security	encrypted communication, AES 128 keys/ VPN
GSM модем	Sierra Wireless HL8518 (HSPA/EDGE/GPRS)
External interface	USB host, Mini USB (USB client),
Ethernet	10/100 Mbit/s
Max quantity support devices	5000
IP rating	IP54
Type of devices	Electricity meters, water meters, Embee street lamp controllers, sensors
Memory	1 Gb
Network interface	Embee NAN
Dimensions (length x width x height)	155x80x45mm,
Storage for data from 5000 pcs	~3-5 years

Software

UCon software for PC Windows, Linux, Android phones, and tablets. Allows you to read information from the gateway and provide direct access to the water meter, if it needed. General reports are downloaded for Excel or pdf. It is possible to schedule consumption charts, monitor the battery meter status of the water meter.

For Android: KTS "Quick Collect" and KTS "Monitor"



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