

AMR / AMI WATER METERS



OVERVIEW

Automated Meter Reading (AMR) can be used for reading water meters. AMR system consists of Meter Interface Units (MIU) which are installed at each meter, a Hand held Drive-by (HHU) unit for reading the data from these MIUs.

Advanced Metering Infrastructure (AMI) is a two way communication water meters used for reading water meter flow rate parameters and also, we can control remotely

Drive-by solution has HHU, which is battery powered. HHU is taken past the MIUs either by walk-by or drive-by. The HHU collects the meter readings from all the MIUs in range using a wireless link. The data from the HHU can be transferred to a PC via a USB interface.

Fixed Wireless solutions uses a Fixed Wireless GSM aggregator, working over a wireless band to collect the data from all the MIUs. The data is then sent to the central monitoring station over GPRS/GSM network.

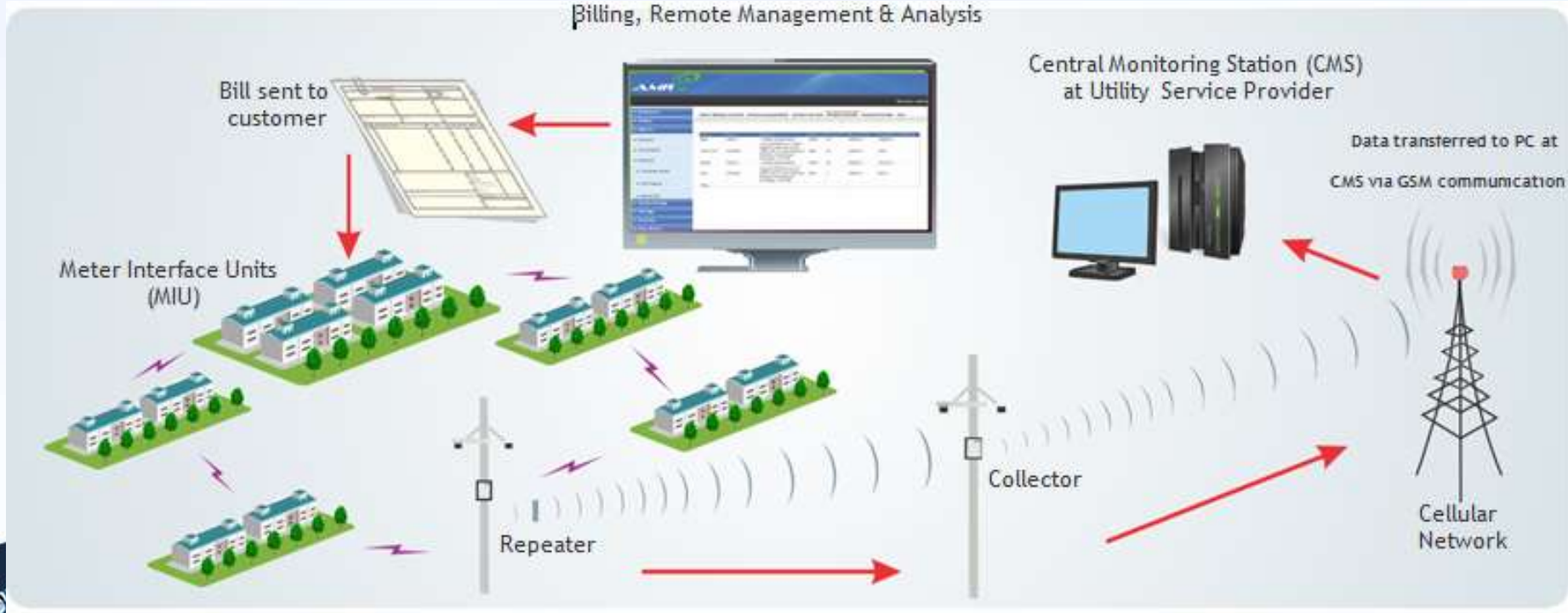


Features

- Battery powered working in 867Mhz range
- Complete solution for Water, Gas and Electricity
- GSM and RF based solutions available
- Datalogging in the MIU's
- Multi-hop networking capability
- Internet enabled software
- Automatic billing and reports

Benefits

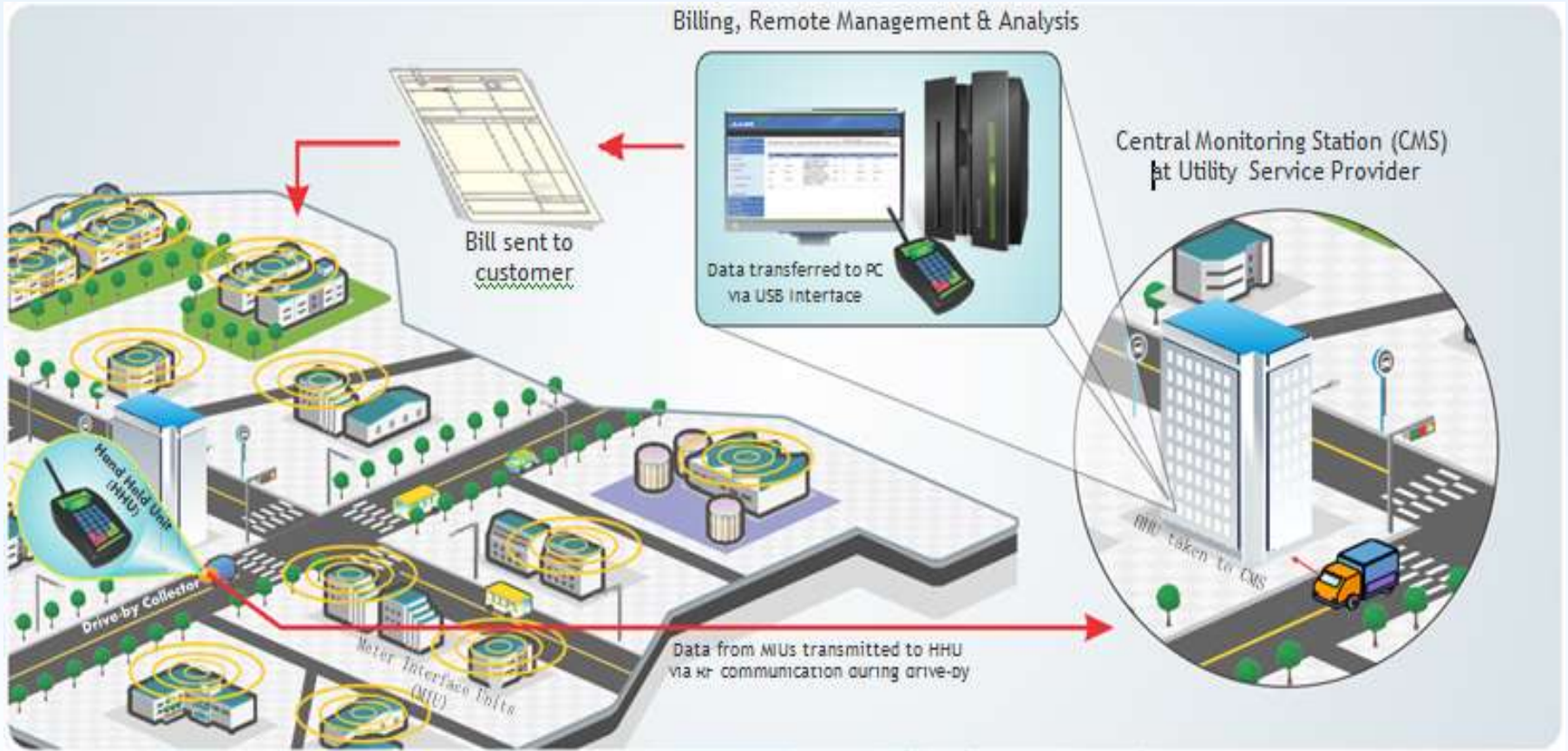
- Efficient non-intrusive meter reading
- Safety and privacy issues avoided
- Enhanced monitoring of system integrity
- Improved conservation and efficiency
- Improved customer service
- Help in detecting theft of service
- More efficient billing / Improved cash flow



GSM BASED SYSTEM SPECIFICATION

Network Topology	Fixed Wireless AMR solution. Repeaters for each sub network, either STAR or MESH topology
Max. Number of MIUs	Max 250 nodes in a sub network. One Repeater in each sub network
Wireless Technology	License-free ISM frequency band of 2.4 GHz Modulation : FHSS. Default data rate : 19.2 kbps
Range	<p>LOS range 100 ft (300 ft with antenna) between MIU and repeater in STAR sub networks</p> <p>LOS range 100 ft (300 ft with antenna) between MIUs / repeater in mesh sub networks</p> <p>Transmission power level 1 mW</p> <p>Overall network range is limited by cellular network</p>
Power Management	Battery voltage monitoring and alert to repeater station
Max. Power Consumption	<p>Standby mode (meter pulses being counted) : 10 μA average</p> <p>RX mode : 15mA. TX mode : 25mA (1mW output power)</p>
MIU Battery Life	5 Yrs. Min.

DRIVE-BY SYSTEM (HHU)



DRIVE-BY SYSTEM SPECIFICATION

Max. Number of Nodes	65534 Nodes
Wireless Technology	License-free ISM frequency band. Modulation : 2-FSK modulation. Default Center Frequency : 433 MHz. Default Data Rate : 19.2 kbps
Range	LOS range 300 feet between node and portable unit. Transmission power level 1 mW / 0 dBm.
Power Management	Battery voltage monitoring and alert to portable unit.
Average Power	Standby mode (meter pulses being counted) : 10 μ A average.
Consumption	RX mode : 15mA, TX mode : 25mA (1mW output power)
Interface to Billing Station	USB interface
AMR Node Battery Life	5 Years min.



HHU

HAND HELD UNIT

Features

- Hand Held Unit to receive data through wireless transmission
- High speed microcontroller
- 16 Char 2 Line LCD
- 12 Key Matrix Keypad for easy user interface
- Back light control
- Programmable meter on time
- Auto display off (Battery saver option)
- In-built memory storage up to 5000 records
- High speed USB interface to communicate with PC



SPECIFICATIONS

Indication	16 Char 2 Line Alphanumeric LCD with auto power off
Backlight	Adjustable backlight control
Power Supply	Internally battery powered rechargeable .
Charger Input	Charger Input
Battery Saver Mode	Automatic sleep mode
RTC	Real time clock
Memory Capacity	Stores 5000 records
RF Transceiver	RF Transceiver
RF Frequency	In-built RF transceiver to transmit and receive data
RF Power	2.4 GHz
Range	Less than 10mV
Programming Method	Matrix keypad arrangement
Communication Protocol	Modbus protocol
Storage Temperature	0-80 C
Humidity	0-90% Max. Non-condensing