CLEAN WATER

WASTE WATER

GAS NETWORKS

AUTOMATED METER READING

HWM

Antenna Options

winter 2024

MONITORING ASSETS, DELIVERING DATA, BRINGING CONTROL

About **HWM**

We are experienced and respected manufacturers of monitoring and telemetry equipment for water, wastewater and gas networks, together with telemetry AMR and facilities optimisation products.

Having serviced the clean water industry for nearly 40 years, we have combined advanced cellular communications technology with rugged, purpose-designed hardware to deliver a wide variety of robust and efficient network monitoring solutions.

We are dedicated to achieving our aim of **helping customers to save natural resources and reduce CO_2 emissions**.

Based out of our Head Office in South Wales, which incorporates a 400 year old, Grade II listed farmhouse, we design, test and manufacture all of our network monitoring solutions in-house.

We boast an innovative manufacturing facility and a dedicated production team, allowing us to deliver our industry-leading products to customers quickly.

Our unique Head Office also houses our advanced testing and development equipment. This includes our complex new test rig and our industry-renowned external leak site.

The test rig, which was developed to meet our own specifications, is built in three parts and allows the replication of a variety of network conditions. Our team of engineers and technical specialists use the test rig to support development of new technologies and to test upgrades of current products.

Our leak site is an underground network of pipes and valves designed to simulate leaks and generate authentic leak noise. While our technical teams use the leak site for product development, it is also a great facility to help train customers in leak noise detection.

Antenna Options

Signal strength within the cellular network can vary dramatically even within the same cell proximity to the transceiver.

The type of antenna, position and angular orientation of the antenna each has a significant effect on the ability of a device to reliably communicate with the cellular network.

To ensure reliable data communications, it is essential that the most suitable antenna is selected and mounted in the most appropriate location.

What is **NBIoT** and **LTE-M**?

NBIoT stands for **Narrow Band Internet of Things**

Narrow Band is a radio frequency developed specifically to handle small data packets from a vast number of transmitters (such as data loggers) all at the same time.

Internet of Things is a broad term that commonly refers to devices or products that connect to the internet.

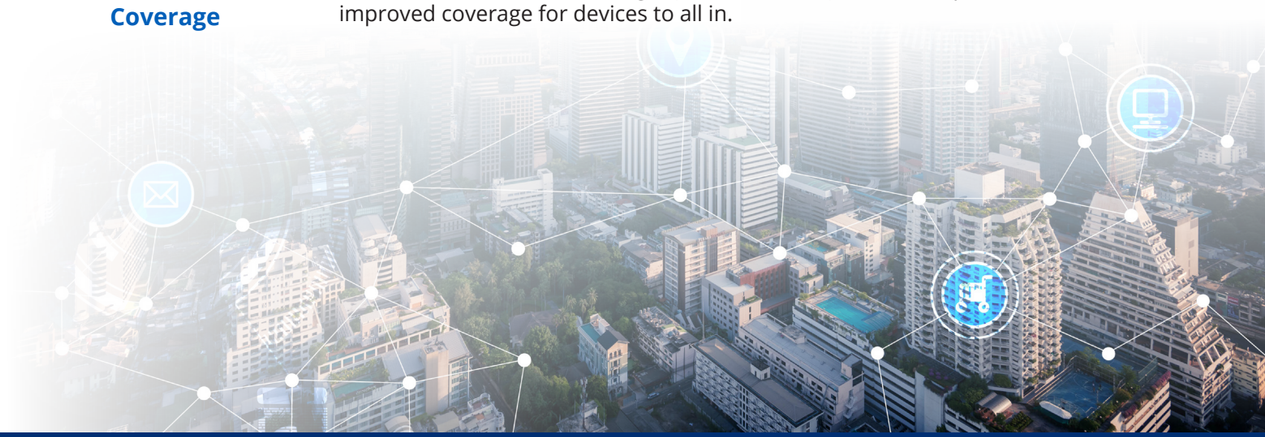
LTE-M stands for **Long Term Evolution for Machines**

LTE-M is a standard for narrow-bandwidth cellular communications, specifically for connecting resource-constrained devices to the internet.

The benefits of using **NBIoT** and **LTE-M**

Using NBIoT and/or LTE-M for data transfer has a number of benefits, which is why we have incorporated NBIoT and LTE-M into our telemetry data loggers.

- **Future-proofing** — Our telemetry data loggers use NBIoT as standard with a 2G fallback should an NBIoT signal become unavailable. Including NBIoT now future-proofs our loggers against the eventuality of the 2G signal being switched off.
- **Low Power** — Narrow Band data transfer is low power, meaning less battery power is used for transferring data and expanding the longevity of the logger.
- **Greater Coverage** — Newer data transfer technologies, such as NBIoT, are able to provide improved coverage for devices to all in.



T-Bar

Frequency Range	698~960/1710~2655MHz
Dimensions	115 x 16.2 x 0.8mm
Operating Temp.	-40°C - +50°C
Mounting Method	Adhesive

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER8016
Connector	FME

Button

Frequency Range	850/863/900/1800/1900/2100 MHz
Dimensions	30.6mm (D) x 5.17 (H) excluding 3M pad
Operating Temp.	-40°C - +85°C
Mounting Method	Bolted

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER9010
Connector	FME

WASTE WATER

Product Code	AER9010
Adapter Code	CABA9587
Connector	Bulgin

I Bar

Frequency Range	698~960/1710~2655MHz
Dimensions	26 x 125 x 7mm
Operating Temp.	-40°C - +85°C
Mounting Method	Adhesive

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER8020
Connector	FME

WASTE WATER

Product Code	AER802
Connector	Bulgin

Dipole

Frequency Range	850/900/1700/1800/1900/2100MHz
Dimensions	160 x 45 mm
Operating Temp.	-20°C - +60°C
Mounting Method	Magnetic

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER8035
Connector	FME

WASTE WATER

Product Code	AER8035-1
Connector	Bulgin

Hanging Antenna

Frequency Range	700~2700MHz
Dimensions	61 x Ø33 mm
Operating Temp.	-40°C - +85°C
Mounting Method	Magnetic

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER6125/K
Connector	FME

Dome

Frequency Range	890~960/1710~1880 MHz
Dimensions	104 x Ø32 mm
Operating Temp.	-40°C - +80°C
Mounting Method	Bolted

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER8035
Connector	FME

Magmount

Frequency Range	700/850/900/1700/1800/1900/2100MHz
Dimensions	280 x Ø50 mm
Operating Temp.	-40°C - +85°C
Mounting Method	Magnetic

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER6100-4
Connector	FME

WASTE WATER

Product Code	AER6100-1
Connector	Bulgin

Magpot

Frequency Range	698-960/1710-2655MHz
Dimensions	61 x Ø33 mm
Operating Temp.	-40°C - +85°C
Mounting Method	Magnetic

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	CABA8110-7
Connector	FME

WASTE WATER

Product Code	CABA9498
Connector	Bulgin

1/4 Wave Antenna

Frequency Range	700~2700MHz
Dimensions	80 x 7 mm
Operating Temp.	-30ºC - +65ºC
Mounting Method	Direct to Data Logger

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER9015
Connector	FME

1/4 Wave (WW) Antenna

Frequency Range	850-900/1800/1900MHz
Dimensions	91.5 x 19 mm
Operating Temp.	-20ºC - +65ºC
Mounting Method	Direct to Data Logger

WASTE WATER

Product Code	AER9085
Connector	Bulgin

Stubby (FME) *above ground only*

Frequency Range	700MHz ~ 2700MHz
Dimensions	115 x 8.5 mm
Operating Temp.	-40ºC - +85ºC
Mounting Method	Direct to Data Logger

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER8090
Connector	FME

GPS Antenna

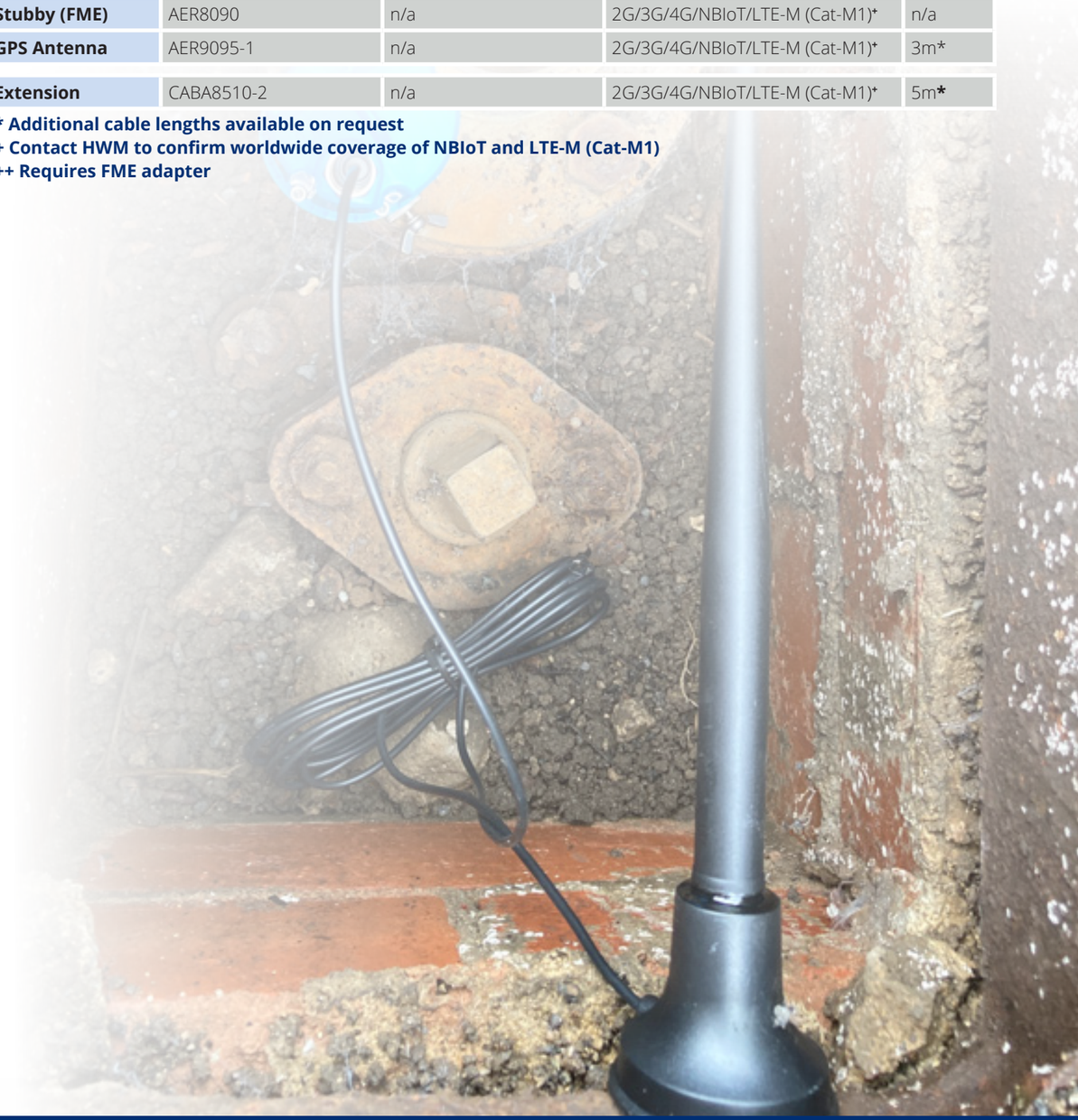
Frequency Range	L1:1575.42 ± 3mhz; L2: 1602±5mhz
Dimensions	16±2 x Ø46 mm
Operating Temp.	-40oC ~ +85oC
Mounting Method	M12 Screw

CLEAN WATER GAS NETWORKS AUTOMATED METER READING

Product Code	AER9095-1
Connector	FME

Antenna	FME Part Number	Bulgin Part Number	Connection	Length
T-Bar	AER8016	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)	1m*
I-Bar	AER8020	AER8021	2G/3G/4G/NBIoT/LTE-M (Cat-M1)	1m*
Hanging Antenna	AER6125/K	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)	2.5m*
Magmount	AER6100-4	AER6100-1	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	2.5m*
Button	AER9010	AER9010++	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	1.5m*
Dipole	AER8035	AER8035-1	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	2.5m*
Dome	RAG A07/FME/02M	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	2m*
Magpot	CABA8110-7	CABA9498	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	5m*
1/4 Wave	AER9015	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	n/a
1/4 Wave (WW)	n/a	AER9085	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	n/a
Stubby (FME)	AER8090	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	n/a
GPS Antenna	AER9095-1	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	3m*
Extension	CABA8510-2	n/a	2G/3G/4G/NBIoT/LTE-M (Cat-M1)+	5m*

*** Additional cable lengths available on request**
+ Contact HWM to confirm worldwide coverage of NBIoT and LTE-M (Cat-M1)
++ Requires FME adapter



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CLEAN WATER | WASTE WATER | GAS NETWORKS | AUTOMATED METER READING | FACILITIES MANAGEMENT

Clean Water Network Monitoring

With over 30 years in the water industry, HWM is skilled at addressing the challenges of water network monitoring. With increased pressure on water globally, we can solve the problems of effective water network management, providing data on performance and enabling effective network management.

Waste Water Network Monitoring

Control of waste water networks is a key public health challenge. Effective monitoring of waste water networks reduces both frequency and impact of pollution events. Permanent installation of remote monitoring equipment helps to alert network operators to immediate problem sites.

Gas Network Monitoring

Effective monitoring of gas networks has traditionally been a challenge, due to a lack of on-site power and deployment difficulty. Our gas products address these concerns, using our expertise in ATEX and low power design capabilities. This enables users to collect data about this critical infrastructure.

Automated Meter Reading

Accurate and consistent data is the foundation for effectively controlling energy usage and reducing waste. AMR delivers precise and timely consumption data for investigation and analysis of energy usage as well as exact billing.

Facilities Management

HWM has pioneered the development of wireless monitoring solutions for fixed network deployment. These can be combined with a variety of sensors, providing our partners with 'near real-time' data that they need to help their customers to eliminate waste, cut costs and reduce carbon emissions.

HWM

FCS invenio systems asl Palmer environmental RADIO-TECH RADCOM TECHNOLOGIES

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MONITORING ASSETS, DELIVERING DATA, BRINGING CONTROL