

DRAFT



Mercury Ethernet Gateway User Guide

WSG-ETH1-G4-SMA

This manual presents user instructions for the installation, operation and maintenance of the Mercury Ethernet gateway.

Wireless Measurement Ltd offers a range of Mercury wireless measurement sensors. For the latest information regarding this range please contact us. Contact details can be found at the end of this manual.

All Mercury sensors require a gateway with a corresponding Mercury radio to make measurements available on the internet. The Mercury Ethernet gateway achieves this using your regular internet connection.

Specification

Electrical

Normal Operating Voltage	5V - 6V DC
Current Consumption	< 0.2A
Power Supply	5 - 8V via 2.1mm power jack (centre positive)

Radio

Radio frequency	2.4 GHz
Radio Output Power	< 6 mW

Antenna

Type	¼ wave vertical, 2.4 GHz
Gain	< 4.9 dBi

Environmental

IP Rating	IP20
Temperature Range	-20°C to +60°C
Enclosure	UV-resistant ASA

Certification

FCC ID	2AKX6-E01
ISED ID	22384-E01

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help and for additional suggestions

ISED Statements

This device complies with Industry Canada license-exempt RSS. The operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter (22384-E01) has been approved by Industry Canada to operate with the antenna types listed below with the maximum allowable gain shown..

Antenna types not included in this list, having a gain greater than the maximum gain indicated for this type, are strictly prohibited for use with this device.

Antenna, vertical wave, 2.4 GHz
Gain <4.9 dBi

This device complies with the RF exposure requirements of RSS-102 at a distance of >20cm. It should not be installed within 20cm of a human body.

Cet appareil est conforme aux RSS exempts de licence d'Industrie Canada. L'opération est soumise à la suivant deux conditions:

- (1) Cet appareil ne doit pas causer d'interférences; et
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de causer un effet indésirable fonctionnement de l'appareil.

Cet émetteur radio (22384-E01) a été approuvé par l'industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous avec le gain maximum admissible indiqué.

Types d'antennes non inclus dans cette liste, ayant un gain supérieur au gain maximum indiqué pour cette type, sont strictement interdits pour une utilisation avec cet appareil.

Antenne, $\frac{1}{4}$ d'onde verticale, 2,4 GHz
Gain <4,9 dBi

Cet appareil est conforme aux exigences d'exposition RF du RSS-102 à une distance > 20cm. Il ne doit pas être installé à moins de 20 cm du corps humain.

Connection to a network

Ethernet Protocol	IEEE 802.3
DHCP	The network must have an IP v4 DHCP server.
DNS Resolver	The DHCP server must provide the address of a DNS resolver
IP Gateway	The DHCP server must provide an IP gateway address for connection to the internet
Outgoing Ports	The Ethernet Gateway will make intermittent outgoing TCP connections to a cloud based service on port 8344. Any boundary firewall must allow outgoing connections to this port.
Physical Layer	10 Mbit/s 10BASE-T Ethernet.

Installation

The gateway is housed in a plastic enclosure moulded from Acrylonitrile Styrene Acrylate (ASA).

It is rated to IP20, so is not suitable for mounting outdoors without additional protection.

The gateway can be fixed to a flat surface by fitting screws through the 4 holes provided in the base of the enclosure.

Alternatively, there are slots provided either side of the base which can be used to thread a strap through the case and around a suitable pole or pipe.

When choosing a mounting position, remember that the antenna should be kept well clear of any objects, especially metalwork. Mounting with the antenna in close proximity to other objects can have a detrimental effect on the radio performance, affecting communication range.

To comply with RF exposure limits, it must not be mounted within 20cm of a human being.

The gateway needs to be connected to an Ethernet network and a 5v DC supply.

The supply must be capable of providing a minimum of 0.25A continuously.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Trouble Shooting

The LED flash patterns are helpful in diagnosing and fixing any faulty network connections.

LEDs on The Ethernet Connector Port

Green	Ethernet link status
Amber	Blinks with Ethernet activity
If neither LED is flashing, please check your Ethernet and power connections	

Red LED on the Case

Short blinks	Operating correctly
2 long blinks	DHCP unsuccessful
3 long blinks	DNS lookup unsuccessful. Either the DHCP server did not provide the address of a working DNS resolver, the gateway was unable to contact the resolver, or the resolver was unable to look up DNS names on the internet.
4 long blinks	Cloud TCP connection unsuccessful. The gateway is unable to contact the internet, or outgoing port 8344 is blocked.
5 long blinks	Cloud TCP connection is incorrect. A TCP connection has been made, but the gateway is unable to communicate with the cloud services.

Warranty

This product carries a manufacturing defects warranty of 12 months from the date of purchase. Units returned under warranty will be repaired or replaced at the manufacturer's discretion. This warranty does not cover mishandling or modification and is subject to the standard Terms and Conditions of Sale, a copy of which is available upon request. The equipment/goods are sold "as is" and with "all faults". Claims under warranty should be referred to the point of sale.

End of Life

This product contains substances that can be hazardous to the environment if not disposed of properly. Electronic equipment should never be disposed of with general waste but must be separately collected for its proper treatment and recovery. The bin symbol on the product reminds you of the need to dispose of the product correctly at the end of its life. In this way you will assist in the recovery, recycling and reuse of many of the materials used in this product. With your help it is possible to reduce the amount of electronic waste ending up in landfill and improve quality of life by preventing the release of potentially hazardous substances into the environment.

At the end of life of your product please contact Wireless Measurement Ltd for information on collection arrangements.

Wherever possible, recycle your packaging.

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