



FlatMesh™



Product Data Sheet: FlatMesh 4G Gateway

The FlatMesh 4G Gateway is a fully integrated unit which provides all the functionality required to operate a FlatMesh wireless sensor network in a remote location.

No fixed IP address is required for the cellular service; the Gateway simply initiates the connection with the FlatMesh WebMonitor software over the Internet.

Key features

- Integrated Twelve Band LTE, Seven Band UMTS/HSPA+ and Quad Band GSM/GPRS/EDGE Modem for worldwide use
- Integrated solar charging circuit connected to internal lithium-ion chargeable battery pack (no external battery pack)
- Fully operational, including FlatMesh and cellular radios, for up to three weeks on internal battery
- On-board industrial-grade flash memory card for data buffering and backup
- Incorporates bracket for mounting to pole or wall
- Waterproof connection to solar panel or other DC power supply
- All components waterproof to IP67
- Firmware is remotely upgradeable over the air reducing costly site visits
- Extended temperature range battery option available for extreme conditions
- Micro-USB connector for maintenance and local data access



FlatMesh 4G Gateway

Physical Specifications

Parameter	Value
Dimensions excluding antennas	218 x 68 x 126 mm
Dimensions including antennas	390 x 68 x 126 mm
Total Mass	1.1 kg (approx.)
Housing Material	Die cast aluminium body ASA polymer lid rated to UL94HB Die cast aluminium lid optional
Internal Protection Marking	IP67
Mounting Options	Combination wall / pole mount bracket included Low profile pole clamp available as an option

Internal Battery (Standard)

Parameter	Value
Battery Type	Lithium Ion, rechargeable
Nominal Voltage	3.6 V
Nominal Capacity	8800 mAh
Typical Runtime without charge	21 days
Operating Temperature Range	-20°C to +60°C
Charging Temperature Range	0°C to +40°C

Internal Battery (-T Version)

Parameter	Value
Battery Type	Lithium Ion, rechargeable
Nominal Voltage	3.6 V
Nominal Capacity	8000 mAh
Typical Runtime without charge	19 days
Operating Temperature Range	-30°C to +75°C
Charging Temperature Range	-30°C to +60°C



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FlatMesh Radio Specifications

Parameter	Value
Communication Type	Proprietary FlatMesh v3 Mesh Networking Protocols IEEE 802.15.4 compliant
Frequency Band	2400 – 2485 MHz ISM Band
Maximum Transmit Power	6.2 dBm (EN 300 328 v1.8.1)
Maximum Antenna Gain	4 dBi (2400 MHz to 2500 MHz range)
Range	Up to 300 m depending on the environment Consult with Senceive for your application
Maximum Network Size	Typically up to 100 nodes Consult with Senceive to determine optimal system configuration
RF Module	Senceive FM3Gateway

Cellular Radio Specifications

Parameter	Value
Frequency Bands for GSM/GPRS/EDGE	850 / 900 / 1800 / 1900 MHz
Frequency Bands for UMTS/HSPA+	800 / 850 / 900 / 1700 / 1800 / 1900 / 2100 MHz
Frequency Bands for LTE	700 / 800 / 850 / 900 / 1700 / 1800 / 1900 / 2100 / 2600 MHz
Maximum Antenna Gain	+3.5 dBi
Supported SIM Cards	3 V and 1.8 V
RF Module	Thales/Gemalto PLS62-W FCC Identifier QIPPLS62-W



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Power Input

Parameter	Value
Recommended Solar Panel Type	12 V 20 W
Target Voltage for MPPT	15.0 V
Maximum Input Voltage	32.0 V
Input Voltage for Charging	15.0 V – 32.0 V (recommended 24 V)

Mains Power Adaptor (FP-AC40-x)

Parameter	Value
Dimensions	116.3 x 52.4 x 31.3 mm
Operating Temperature Range	0°C to +65°C
Input Voltage Range	90-264 VAC
Input Frequency	47-63 Hz
Input Power	0.5-23 W

Certifications

- CE, FCC, ISED
- Network Rail Acceptance PA05/O4146



FlatMesh 4G Gateway

Ordering Information and Accessories

Model	Description
FM3G-LTE	FlatMesh 3 LTE/4G Gateway
FM3G-LTE-T	FlatMesh 3 LTE/4G Gateway with Extended Temperature Battery
FM3G-LTE-A	FlatMesh 3 LTE/4G Gateway with Aluminium Front Panel
FP-SP20	20 W Solar Panel Pre-fitted with 2 metres of cable, includes pole mount kit
FP-SP30	30 W Solar Panel Pre-fitted with 2 metres of cable, includes pole mount kit
FP-AC40-UK	40 W Power Adaptor with UK Power Plug
FP-AC40-EU	40 W Power Adaptor with European Power Plug
FP-AC40-US	40 W Power Adaptor with USA / Canada Power Plug
FP-AC40-ANZ	40 W Power Adaptor with Australia / New Zealand Power Plug
FP-AC40-309Y44	40 W Power Adaptor with IEC60309 Yellow Power Plug, IP44 rated
FP-AC40-309B44	40 W Power Adaptor with IEC60309 Blue Power Plug, IP44 rated
FP-SPC	Gateway Power Connector To suit cable outside diameter 5.5 mm to 8.0 mm
FF-GW-PC	Pole Clamp for 4G Gateway Bolts directly into gateway enclosure for clamping to a pole
FF-GW-WB	Wall Bracket for 4G Gateway Can be screwed directly to a flat surface or attached with straps to a pole or other structure
FC-GA	Gateway Perspex Cover Clear plastic cover to protect gateway enclosure and antennas from frontal impact, includes masonry anchors
FA-3G-OMNI	Waterproof Omnidirectional antenna for 2G / 3G / 4G For use when the gateway location has poor cellular reception Includes 3 m cable and pole mount bracket