# TECHNICAL SPECIFICATION

ATREYO
SOLUTIONS THAT SIMPLIFY

## Customisable IoT gateway

## AG-1115




### Features

- **4G LTE and GSM connectivity**
- **Dual SIM support**
- **3 independent NO relay outputs**
- **Opto-isolated RS485**
- **4 opto-isolated digital inputs**
- **Analogue input**
- **GNSS for accurate time and location**
- **Battery/superCAP backup option**
- **Indicators and SIM accessible from the front**
- **Aluminium compact size casing**
- **Panel mounting**

AG-1115 is a gateway designed for a customers who requires low cost gateway with custom software for their application. The gateway has opto-isolated RS485, digital inputs and outputs, one analog input and LTE/GPRS communication with SMS support. Gateway software is created according to specific customer requirements. The gateway is designed to monitor and control the remote energy switches, electricity meters, etc. It can be adapted to control any RS485 / Modbus based device. Atreyo offers software development services in accordance with the client's requirement.

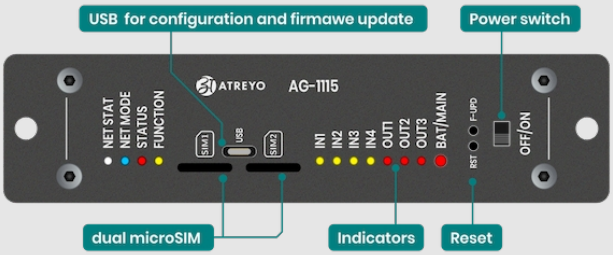
| Description | Parameter |
|---|---|
| **Processor** | |
| **Type** | ARM Cortex A5 |
| **Clock** | 500 Mhz |
| **RAM memory** | |
| **Memory size** | 16 MB |
| **Storage** | |
| **Internal flash** | 8 MB (only for system and application) |
| **MicroSD** | Optional (inside of the enclosure) |
| **Serial interface** | |
| **Port number** | 1 |

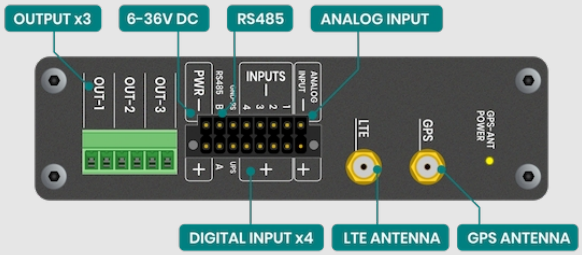
| Description | Parameter |
|---|---|
| **Interface type** | RS485 |
| **Data Rate** | 2400 – 19200 |
| **Signals** | A and B |
| **Connector** | Pluggable push-in socket |
| **Protection** | Opto-isolated 2.5 kV RMS per UL 1577 |
| | IEC 61000-4-2 level 4:<br>– 15 kV (air discharge)<br>– 8 kV (contact discharge) |
| | Fail-safe receiver for bus open, short and idle |
| **Cellular modem**[1] | |
| **Band** | Please refer table of cellular |

| Description | Parameter |
|---|---|
| | network on page 3 and 4. |
| **SIM card** | 2 x nanoSIM, tray to prevent cards falling out |
| | 3V/1.8V |
| **Antenna connector** | SMA female |
| **GNSS[2]** | |
| **GNSS systems** | GPS, BDS, Galileo, GLONASS, QZSS |
| **Antenna connector** | SMA female |
| **Digital inputs** | |
| **Input number** | 4 |
| **Input type** | Opto-isolated 2.5kV |
| **Configuration** | Separate IN-GND |
| **Connector** | Pluggable push-in |
| **Max $_{Vin}$** | 30V DC |
| **Logic 1 voltage** | 3.5V to max $_{Vin}$ |
| **Analog input** | |
| **Input number** | 1 |
| **Input type** | 0-30V no isolated |
| **System functions indicators** | |
| **Indicators** | ACT – activity |
| | NET status |
| | NET mode |
| | Digital output active indicators |
| | Digital input active indicator |
| | Custom use |
| **Configuration and System** | |
| **Configuration method** | USB |
| | SMS[3] |

| Description | Parameter |
|---|---|
| **Power supply** | |
| **Power supply** | 8-36V DC |
| **Power consumption** | 3W average (without battery charging) |
| **Connector** | Pluggable push-in socket |
| **Protection** | Reverse polarity, over voltage |
| **Battery backup[4]** | |
| **Battery type** | Li-Ion (18650) |
| **Battery voltage** | 3.7V |
| **Backup time** | 24h (approx, with relay off) |
| **Battery protection** | Over voltage, low battery |
| **Super-CAP backup[5]** | |
| **Backup time** | 10min approx |
| **Physical characteristics** | |
| **Installation** | Panel mount |
| **Housing** | Aluminium |
| **Weight** | 360g (without battery model) |
| **Dimensions** | 135×38×75mm |
| **Environmental specification** | |
| **Operating temp.** | -25 ~ 75°C (-13 ~ 167°F) (without battery model) |
| **Storage temp.** | -40 ~ 85°C (-40 ~ 185°F) (without battery model) |
| **Ambient RH** | 5% ~ 95% (non-condensing) |

## Gateway




1 Apply to LT models. Refer model selection chart. LTE/GSM Bands are mentioned for in Cellular table section on page 3 and 4.
2 Apply to LT models. Refer ordering chart.
3 Can be implemented.
4 Applicable only on battery models
5 Applicable only on super-cap models

### Cellular modem specification of IN (India) version

| IN version of gateway | Cellular network modem details | |
|---|---|---|
| **Band LTE FTD** | B1/ 3/ 5/ 8 | |
| **Band LTE TDD** | B34/ 38/ 39/ 40/ 41 | |
| **Band GSM** | B3/ 8 (900/1800MHz) | |
| **GPRS slot** | Multi-slot class 12/10 | |
| **Bandwidth** | 1.4/ 3/ 5/ 10/ 15/ 20 MHz | |
| **Output power** | LTE-FDD | Class 3 (23 dBm ±2 dB) |
| | LTE-TDD | Class 3 (23 dBm ±2 dB) |
| | EGSM900 | Class 4 (33 dBm ±2 dB) |
| | DCS1800 | Class 1 (30 dBm ±2 dB) |
| **Maximum data rate** | LTE-FDD | 10 Mbps (DL), 5 Mbps (UL) |
| | LTE-TDD | 8.96 Mbps (DL), 3.1 Mbps (UL) |
| | GPRS | 85.6 Kbps (DL), 85.6 Kbps (UL) |

### Cellular modem specification of EU (Europe and India) version

| EU version of gateway | Cellular network modem details | |
|---|---|---|
| **Band LTE FTD** | B1/3/5/7/8/20/28 | |
| **Band LTE TDD** | B38/ 40/ 41 | |
| **Band GSM** | B2/3/5/8 (900/1800MHz) | |
| **GPRS slot** | Multi-slot class 12/10 | |
| **Bandwidth** | 1.4/ 3/ 5/ 10/ 15/ 20 MHz | |
| **Output power** | LTE-FDD | Class 3 (23 dBm ±2 dB) |
| | LTE-TDD | Class 3 (23 dBm ±2 dB) |
| | EGSM900 | Class 4 (33 dBm ±2 dB) |
| | DCS1800 | Class 1 (30 dBm ±2 dB) |
| **Maximum data rate** | LTE-FDD | 10 Mbps (DL), 5 Mbps (UL) |
| | LTE-TDD | 8.96 Mbps (DL), 3.1 Mbps (UL) |
| | GSM | 85.6 kbps (DL), 85.6 kbps (UL) |
| **Power** | Compliant to GSM phase 2/2+ | |
| | – Class 4 (2 W 900MHz) | |
| | – Class 1 (1 W 1800MHz) | |

### Standard model list

These are models in regular production. Other models are only made on order with a minimum order quantity. Please contact us if you require a custom order.

| Model | Hardware Options | | | | | More information |
|---|---|---|---|---|---|---|
| | | | | Backup | | |
| | GPRS | LTE | GNSS | Battery | SuperCAP | |
| AG-1115-IN | ✓ | ✓ | ✓ | | | |
| AG-1115-IN-BAT | ✓ | ✓ | ✓ | ✓ | | Battery backup |
| AG-1115-IN-SC | ✓ | ✓ | ✓ | | ✓ | SuperCAP backup |

**For more details scan or click on QR code**


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