astra telematics

AT242 Installation Guide

Astra Telematics Generic Installation Recommendations:

- Devices should be configured for SIM and platform, details entered on the platform and tested to confirm configuration BEFORE being sent for installation
- Before starting, check the vehicle:
    - Make note of any fault warning lights or codes displayed on the vehicle dashboard
    - Measure the parasitic battery drain current with ignition off
- Devices and antennas should be securely mounted, so they cannot work loose
- If double-sided tape is being used to mount devices and/or antennas, surfaces should be flat and cleaned / de-greased with IPA before mounting
- Antennas and/or devices should not be mounted in close proximity to loudspeakers
- All connections should be soldered, using a gas-powered or battery-powered soldering iron
- Mains-powered or vehicle-powered soldering irons should never be used
- IDC crimps and any other form of insulated crimp connector should not be used
- Device permanent power should be taken directly from the battery or main battery feed, to avoid problems with current drain being detected by the vehicle ECU
- Ignition sense feed should be taken from an auxiliary or accessory circuit which goes live only when the vehicle ignition is on. For example, the auxiliary power socket or cigarette lighter socket is often a good choice
- Where the immobiliser feature is used, the relay should be fitted in the starter motor solenoid circuit, to prevent starting of the vehicle, NEVER in any manner that can prevent running mid-journey
- Immobiliser relays should be installed using the NORMALLY CLOSED contacts, to ensure that any failure in the device, wiring or configuration does not prevent starting of the vehicle (fail-safe mode)
- We recommend keeping notes of the installed astra device location for each installation and consider also taking a photo for verification of appropriate device location and mounting.
- Full diagnostics should be completed before replacing panels and leaving the vehicle (see last page)

Recommended Tools and Consumables:

- Butane gas or battery-powered soldering iron
- Cables ties (various widths and lengths)
- Double-sided foam adhesive tape (e.g. TESA 62936)
- Self-amalgamating insulating tape, fabric type (e.g. TESA 51608)
- IPA degreasing wipes, or IPA solvent and paper towels
- Craft knife
- Heat-shrink sleeve (various diameters)
- Side cutters (fine/sharp)
- Spare ATO fuses, 1A
- Volt meter
- Clamp meter

AT242 Installation Procedure

1. **Check that the back-up battery is fitted and plugged-in:**

   Each AT242 is supplied with a 510mAh back-up battery, which should be fixed to the PCB and connected as shown below:
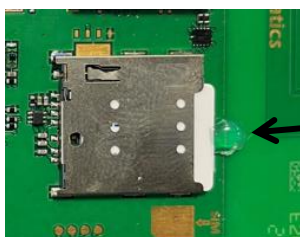

   Do not attempt to remove the battery from the cover, once it has been stuck down, as prising or bending could lead to explosion/fire and smoke.

2. **Slide the Micro SIM (3FF format) into the holder:**


   note orientation

   Note that the AT242 powers up when the SIM is fitted

   a drop of hot glue can be applied to prevent movement of the SIM, in applications where vibration may cause inadvertent SIM extraction

Check GNSS and LTE status LEDs

Place the AT242 somewhere with clear view of the sky in correct orientation for a minute or two, and then check the status LEDs as below:

GNSS Status   GSM Status   GNSS Antenna (SKY-SIDE)
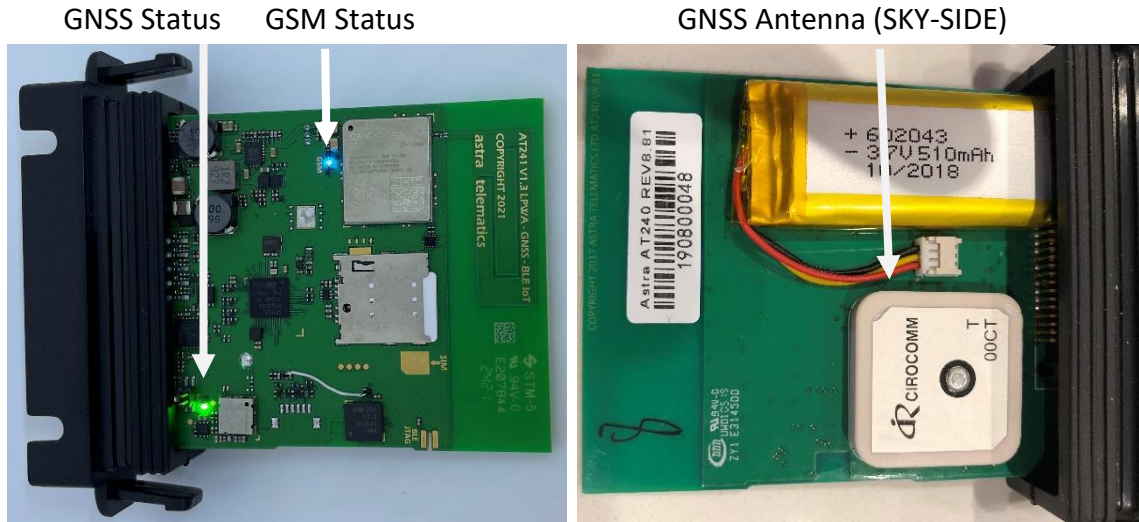
During normal operation the LEDs should appear as below:

GNSS	double flash once per second
LTE	ON for 1.8s and OFF for 0.2s
NOTE:	GNSS Rapid Flash indicates test modem – please contact astra support

3. After GNSS and GSM status is confirmed, slide the AT242 into the enclosure
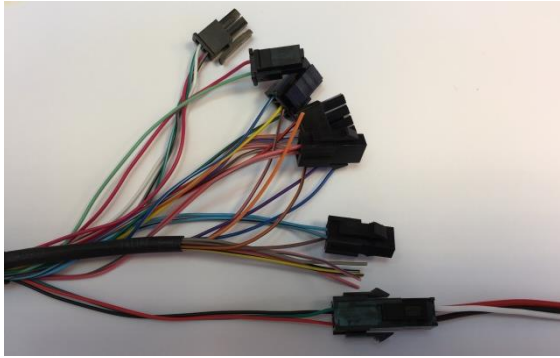

Note orientation – GNSS antenna on top

4. Fit the CB243 plug & play cable

Push cable until it clicks.
Avoid any side to side "waggling" when mating or disconnecting, as this can result in bent connector pins

5. Connect the CB001 3-way power & ignition cable

Plug the CB001 cable into the matching connector on the CB243

6. Hook up the power and ignition electrical connections

Connect the RED and BLACK wires to a PERMANENT +12V/+24V vehicle power source. Connect the ignition sense input (Digital 1) to an ignition switched 12/24V signal (i.e. something that only goes live when the vehicle ignition is ON)

i.	RED	PERMANENT +12 / +24V	1A FUSED
ii.	BLACK	GROUND	1A FUSED
iii.	WHITE	IGNITION SWITCHED +12/24V	1A FUSED

We recommend that all connections should be soldered to ensure reliable terminations. Crimps and IDC type terminations can be unreliable if used with the wrong tooling and/or wires sizes.

All unused wires should be left insulated to avoid undesired behaviour.

7. Fit the IB001 iButton Probe (optional)

Fit the IB001 iButton probe in the desired position on the vehicle dashboard (requires drilling a hole) and then connect to the matching connector on the CB243

8. Fit the CC001 CAN-click adapter (optional)

Fit the CC001 contactless CAN-click adapter to the CANH and CANL wires and then connect the other end to the matching connector on the CB243

9. Fit the CB242 OBD adapter cable (optional)

Our CB242 OBD cable provides 2 options for J1962 CANH and CANL termination:

Pins 6 and 14 as per the J1962 standard (if unsure, we suggest you try this one)
Pins 1 and 9   as implemented by some vehicle manufacturers

Plug the CB242 OBD cable into the vehicle OBD socket and then connect the other end (marked "CAN 1&9" or "CAN 6&14") to the matching connector on the CB243 cable

10. Fit the BZ001 buzzer (optional)

Plug the BZ001 external buzzer into the matching connector on the CB243 cable

11. Mount the AT242 under the vehicle dashboard

Choose a position towards the top of the dashboard and as far forwards as possible to give the optimum view of the sky through the vehicle windscreen

NOTE: SKY SIDE is the fitted with the Astra Telematics device label and slotted pattern:

SKY SIDE

There must be no conductive objects between the AT242 and the windscreen (i.e. nothing metallic, foil or carbon based)

Secure the AT242 to a flat surface with double sided foam adhesive tape, being sure to degrease the vehicle side with an alcohol wipe. If practical, the AT242 can be screwed in place using the two mounting lugs or secured with a cable tie.

Make a note the device orientation with respect to the vehicle (e.g. connector facing rear of vehicle) as this may be required later to set ORTN parameter for correct interpretation of accelerometer data for driver behaviour. Refer to the AT242 User Guide and the Driver Behaviour Application Note for more details.

12. Check Status and Commission Device

Before replacing panels and leaving the vehicle, we STRONGLY recommend that you confirm normal operation and good communication, using either method below:

Call the service provider to check that the device is online, confirming external power, GNSS, LTE communications, CANBus and driver ID status.

OR

Send $TEST to the device by SMS and confirm the response.

- Confirm device IMEI is as expected
- Confirm power connection and availability (should be near 100%)
- Confirm GNSS status and availability (should be near 100%)
- Confirm LTE communication status and availability (should be near 100%)
- Confirm all other status checks are "OK"
- Confirm correct reporting of IGNITION state
- Confirm presence of CAN data (if fitted)
- Confirm correct operation of immobiliser (if fitted)

Any exceptions to the above should be addressed before leaving the vehicle

Please refer to the OTA Device Test application note for further details and examples of $TEST command responses and advice on interpretation / handling of errors.

Example $TEST command response:

```
TEST:AT242
7.0.52.0
357322042745742
O2 UK
PWR:12.5V (100%)
BAT:100% (NC)
GNSS:OK (95%)
GPRS:OK (98%)
APN:OK
SKT:OK
ACK:OK
IGN:OK (OFF)
CAN:OK
IMOB:OFF
```

We recommend keeping records of device installation location and verification of appropriate mounting, orientation and location by photo.

13. Troubleshooting

If you have any problems, questions or if you suspect a product failure / malfunction, please contact Astra Telematics technical support:

support@astratelematics.com
+44 161 826 8800