

AT110V5 Installation Guide

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, take note of any fault lights or codes displayed on the vehicle dashboard
- 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, cleaned and de-greased
- 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 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)
- Full diagnostics should be completed before replacing panels and leaving the vehicle

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
- Voltmeter

AT110V5 Installation Procedure

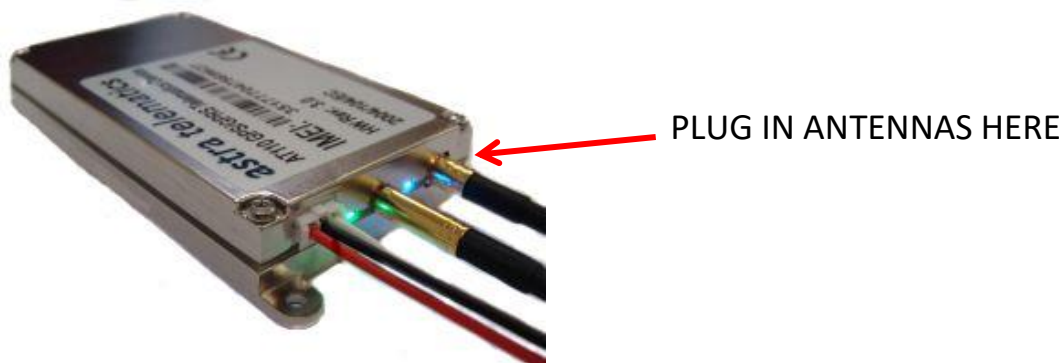
1. Install the Antenna

Choose a suitable location for the antenna, with a good 'view' of the sky for optimum GPS reception, according to the antenna type supplied:

- a. AE001 – under the dashboard, adhesive side down
- b. AE002 – roof mounted, requiring a hole in the panel
- c. AE003 – windscreen mounted, adhesive to the glass, typically in the bottom corner of the screen
- d. AE004 – separate GPS and GSM antennas. GPS to be fitted adhesive side down and GSM to be fitted at least 0.5m away, avoiding close proximity to metal or loudspeakers

2. Connect GSM and GPS antennas to the matching connectors on the AT110

Apply direct force when connecting and disconnecting the antennas. Do not waggle from side to side or apply excessive sideways force, to avoid damage to the device.



3. Hook up the power and ignition electrical connections using the CB110 cable

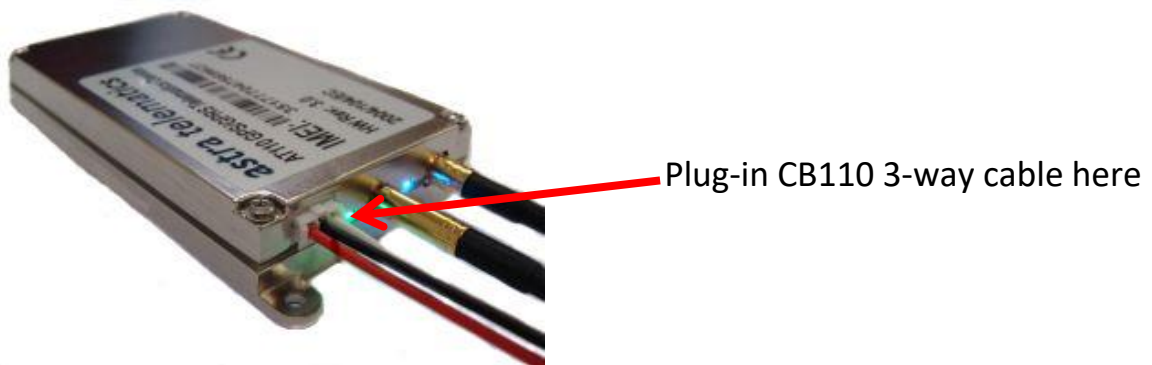


- a. Connect the BLACK wire to GND and the RED wire to a PERMANENT +12V/+24V vehicle power source. Connect the ignition sense input (digital input 1) to an ignition switched 12/24V signal (i.e. something that only goes live when the vehicle ignition is ON)

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

- b. 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.

4. Plug-in the 3-way CB110 cable to the matching connector on the AT110 device



5. Plug-in the CB113 plug & play data cable to the matching connector on the AT110 device



6. 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 CB113

7. 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 CB113

8. 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 CB113 cable

9. Fit the BZ001 buzzer (optional)



Plug the BZ001 external buzzer into the matching connector on the CB113 cable

10. Slide the SIM into the slot in the side of the AT110

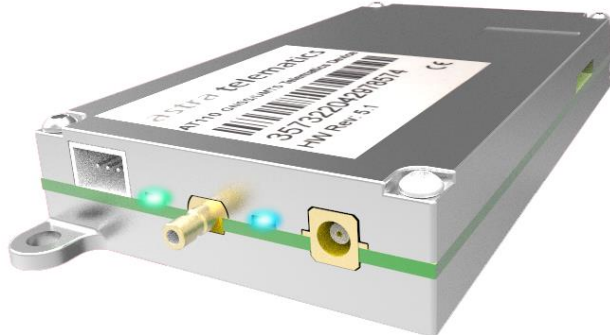
The SIM should be inserted with noted corner first, to the left-hand side

To remove the SIM, press it inwards and it will spring out



Note that the AT110 powers up when the SIM is fitted, both LEDs should illuminate. Note that the AT110 is fitted with an internal battery, and will power-up regardless of the external power connections, which should be verified as described in step 13 below.

11. Check GPS and GSM status LEDs



After a minute or two, the AT110 device should have obtained a GPS fix and registered with GSM service. Check the status LEDs to confirm. During normal operation the LEDs should:

GPS/GNSS STATUS (GREEN):

ON CONTINUOUSLY

FAST DOUBLE FLASH

OFF

device is powered-up and is searching for first location fix

good fix received, typically 1Hz flash (once per second)

device currently has no location fix

GSM/UMTS STATUS (BLUE):

OFF

100mS ON / 2S OFF

DOUBLE 50mS ON / 2 SEC OFF

DOUBLE 100mS ON / 2 SEC OFF

50mS ON / 50mS OFF

ON CONSTANTLY

800mS ON / 200mS OFF

no network service

Registered on home network 2G service

Registered on home network 3G service

Registered on roaming network 2G service

Registered on roaming network 3G service

device is currently transmitting data on home network

device is currently transmitting data on roaming network

12. Mount the AT110 under the vehicle dashboard

Secure the AT110 to a flat surface with double sided foam adhesive tape, being sure to degrease the vehicle side with an alcohol wipe. If practical, the AT110 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 AT110 User Guide and the Driver Behaviour Application Note for more details.

13. 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:

- i. Calling the service provider to check that the device is online, confirming external power, GPS, GPRS, CANBus and driver ID status.
- ii. Send \$TEST to the device by SMS and confirm the response.
 1. Confirm device IMEI is as expected
 2. Confirm power connection and availability (should be near 100%)
 3. Confirm GPS status and availability (should be near 100%)
 4. Confirm GSM status and availability (should be near 100%)
 5. Confirm all other status checks are "OK"
 6. Confirm correct reporting of IGNITION state
 7. Confirm presence of CAN data (if fitted)
 8. Confirm correct operation of immobiliser (if fitted)
- iii. Any exceptions to the above should be addressed before leaving the vehicle
- iv. 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:AT110V5
7.0.30.0
357322042745742
02 UK
PWR:12.5V (100%)
BAT:100%
GPS:OK (95%)
GPRS:OK (98%)
APN:OK
SKT:OK
ACK:OK
IGN:OK (OFF)
CAN:OK
IMOB:OFF
```

14. Troubleshooting

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

support@gps-telematics.co.uk

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