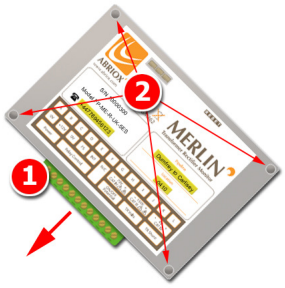
Document Description	**Changing MERLIN SIM Card Guide**
Document Number	**DOC-001-00-167**
Version	**2**
Date	**01 December 2009**

Prerequisites

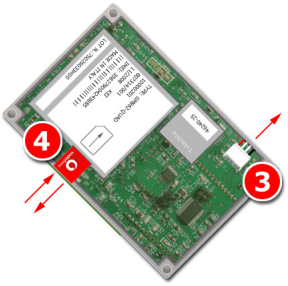
If the MERLIN has already been installed in the field the following should be completed prior to changing the SIM card:

1. Carry out a GSM survey to ensure the proposed alternative GSM network will work at the location.
2. Manually take CP measurements with a Digital Volt Meter (DVM) and note the values.
3. Make sure you know the telephone number of the new SIM and that it is activated.

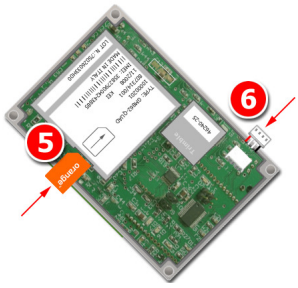
Changing the SIM card



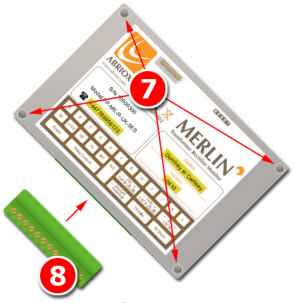
1. Unplug the green connector block from the side of the MERLIN unit.
2. Remove the lid by unscrewing the four screws (Phillips PH2). Be careful not to lose the screws.



3. Carefully unplug the battery connector.
4. Remove the old SIM card (Push in/Push out fitment).



5. Insert the new SIM card, ensuring it is pushed in fully.
6. Reconnect the battery connector.



7. Replace the lid, ensuring the Abriox logo is on the side away from the green connector (important so that the LED window is in the correct place), and tighten the four screws firmly.
8. Reconnect the green connector block.



9. Change the label on the front of the MERLIN to show the new telephone number.
10. Reset the MERLIN by swiping a magnet past the RESET switch on the front of the label.

Document Description	**Changing MERLIN SIM Card Guide**
Document Number	**DOC-001-00-167**
Version	**2**
Date	**01 December 2009**

MERLIN GSM Status

Both the MERLIN Transformer Rectifier Monitor (MERLIN TR) and the MERLIN Test Post Monitor (MERLIN POST) incorporate LED's that can help diagnose problems or notify the user of the current status.



The GSM specific LED information is as follows:

During normal operation after reset

LED Colour	Sequence	Description
Green LED	Single flash every 2 seconds	Unit is awake and active. SIM card is working OK.
Green LED	Double flash every 2 seconds	Unit is awake and active but not fully logged onto GSM network. Try another SIM card and/or fit external antenna.
Red LED	Single flash every 2 seconds	Unit is awake and active. SIM card is working OK. MERLIN POST = Battery is low. MERLIN TR = Battery is not connected. Check connection.
Red LED	Double flash every 2 seconds	Unit is awake and active but not fully logged onto GSM network. MERLIN POST = Battery is low. MERLIN TR = Battery is not connected. Check connection. Try another SIM card and/or fit external antenna.
No LED	No LED flashes	Unit is busy initialising GSM. Can take up to 3 minutes. If no LEDs come on after 3 minutes, check all connections.

Possible error codes after unit reset (error code within 3 minutes of reset)

LED Colour	Sequence	Description
Red LED	3 flashes	No GSM network. Unit will keep trying to log on. Try another SIM card and/or fit external antenna.
Red LED	4 flashes	No SIM card detected. Check SIM card is installed and seated correctly. Check SIM card works by installing it in a phone and checking SMS (text) is working.
Red LED	5 flashes	SIM card error. Check SIM card is installed and seated correctly. Check SIM card works by installing it in a phone and checking SMS (text) is working.
Red LED	6 flashes	PIN error. SIM card has PIN code enabled. Fit SIM card in a phone and disable the PIN code.

Testing the MERLIN

Once the new SIM card has been fitted it's time to test the MERLIN.

Using your mobile phone, send the following message:



CMD:READ

The MERLIN will respond via a text message back to your mobile phone detailing the units' serial number, type and channel inputs.

A reply from a MERLIN POST would look like:



CPM:020 UNIT:20000001 POST 1DC:-1000mV 1AC:300mV 2DC:-900mV 2AC:200mV 3DC:10.00mV 3AC:0.40mV

A reply from a MERLIN TR would look like:



CPM:020 UNIT:10000001 TR VOLTS:18.00V SHUNT:20.00mV ON:0mV OFF:0mV

Compare to DVM readings taken prior to changing SIM card. These should be similar, if they have changed significantly, check the wiring and repeat this section.

(Re)Installation of the MERLIN

If the MERLIN has been successfully installed at the location previously, send:



CMD:INSTALL

You will get a response from the iCPSM/CPSM(s) HQs.



Pipeline Name / Location Name Installed Successfully.

If the MERLIN has not been installed at this location, the unit will need to be configured with the HQ numbers of the iCPSM/CPSM(s) that it needs to report to. E.G.:



CMD:CONFIG HQ1: ***+44123456789****

**Where the number in light grey is the respective telephone number/s of your CPSM/iCPSM HQs. If you only have one HQ, enter HQ1: followed by the HQ telephone number. If you have two HQs, enter HQ1: and HQ2: along with the respective telephone numbers.*

The unit will then need to be installed with the pipeline name and location. E.G.:



CMD:INSTALL PIPE: ***PIPELINE NAME*** **LOC:** ***LOCATION NAME*****

***The Pipeline Name and Location Name are specific to each unit and should be named accordingly.*

Return the Old SIM Card

If the original SIM card was issued by Abriox, please return it to Abriox via recorded delivery as soon as possible.