



microSpider2 Industrial Quick Start Guide

This guide is not a replacement for the User Manual. Please refer to the complete microSpider2 manual available from our website: www.halytech.com.au

Once on our website go to Products→Data Loggers→microSpider Industrial, at the bottom of the page select the 'Downloads' tab and from there you will be able to download the manual to suit your software version.

Package Contents:

Item	Quantity	Checked
microSpider2 Industrial	1	
LAN Crossover Cable		
USB Cable		
Accessories Pack	1	
Additional I/O Connector		
Packed By:		

Opening the microSpider2 Industrial

1. Disconnect all external power supplies and sensors from the microSpider2.
2. Remove the microSpider2 Industrial top cover by gently squeezing the two tabs on the side of the cover to release it from the base.



Closing the microSpider2 Industrial

Align the top of the case with the base and then press down so the two plastic clips lock into the top half of the case.

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Installing a SIM card

You need a SIM card to receive automatic e-mail and/or FTP reports from your microSpider2. Halytech can provide fully functioning SIM cards for you.

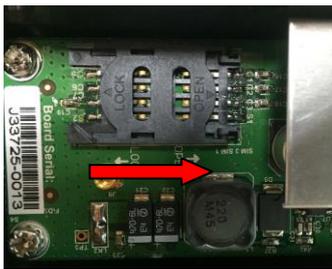
If you want to source your own SIM card, contact your preferred mobile phone carrier and ensure that the SIM card is provisioned with a plan enabling internet access.

microSpider2 units are fitted with two different type of SIM card holders. They are easily distinguishable by the colour of their cover - either black or silver. Please follow the instructions relevant to the type of SIM card holder installed in your unit.

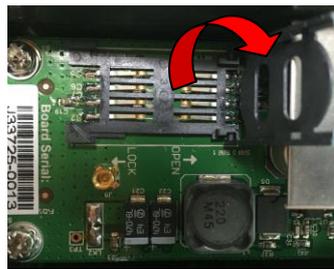
IMPORTANT: Before installing a SIM card into a microSpider2, put it in a standard mobile phone and disable its PIN, if it has one.

To install a SIM card into a microSpider2 fitted with a **BLACK** SIM card holder:

1. Open up the microSpider2 as described in "Opening the microSpider2 Industrial".
2. Insert the SIM card:
 - a. Slide the SIM card cover holder to the "OPEN" position
 - b. Lever it upwards on its hinge to open it.
 - c. Slide the SIM card into the groove of the cover, observing the proper notch orientation.
 - d. Close the cover and slide the cover into the "LOCK" position.



a.



b.



c.



d.

To install a SIM card into the microSpider2 fitted with a **SILVER** SIM card holder:

1. Open up the microSpider2 as described in "Opening the microSpider2 Industrial".
2. Insert the SIM card:
 - a. Slide the SIM card cover holder to the "OPEN" position
 - b. Lever it upwards on its hinge to open it.
 - c. Lay the SIM card flat onto the base of the SIM socket, observing the proper notch orientation.
 - d. Close the cover
 - e. Slide the cover into the "LOCK" position.



a.



b.



c.



d.



e.

Connecting Internal 9V “Backup” Battery (Optional)

The internal 9V battery serves as a ‘backup’ for microSpider2 RAM. RAM is used to maintain information such as counters, alarm state, when the modem should perform retries, and other current system information.

Should microSpider2 lose power entirely, RAM will be lost, and on reboot the information listed above will reset.

In the event that microSpider2 Industrial loses power (External Power In drops below 10V), the backup battery will be used to maintain microSpider2 Industrial in a low-power mode which will maintain the RAM. When in low-power mode, the microSpider2 will not log, and will not be accessible via LAN (even if USB cable is connected).

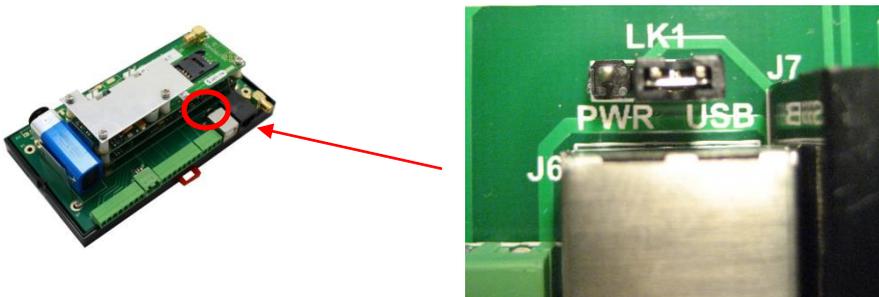
To exit the low power mode and resume normal operation, either External Power of 12V or the Charger Power of 16V must be applied to the microSpider2.

To insert the battery, open up the microSpider2 and connect a standard 9V battery to the battery clip. Insert the battery into the metal holder – as shown in the picture. Close up the microSpider2.



LAN Power Selector

The network (LAN) interface of the microSpider2 can operate in two different modes. Select your desired mode by opening up the microSpider2 and inserting the black jumper as required:



“**USB**” position – This is the default position. The microSpider2 will communicate with an external computer only if both the USB cable and the LAN cable are connected to the computer. This mode provides the lowest possible power consumption and should always be used for battery powered installations.

“**PWR**” position – Use this position **only** for mains powered units. The LAN interface will always be powered enabling continuous LAN communications with external PC’s, at the cost of significantly increased power consumption. Only the LAN cable needs to be connected. This setting is suitable for industrial applications requiring continuous LAN access.

Connecting Antenna

Connect the antenna lead by screwing the flying lead connector onto the gold antenna “ANT” connector – finger tight only



↑
Antenna Connector

Connecting Power

Connect a 16V – 24V DC, 2A minimum current Power Supply or a 12V Solar Panel to the “Charger” connector. Please observe the correct polarity.

Optional - connect a 12V battery to the “BT” connector. The battery will be charged automatically. Please observe the correct polarity.



↑
Optional 12V battery

FRONT I/O CONNECTORS (from left to right in previous image)

PIN	NAME	FUNCTION	COMMENT
D1	DIN1	SWITCH 1 / COUNTER 1 / QUADRATURE 1A	Active is short to GROUND
A1	AIN1	ANALOGUE 1	0 – 2.4V or 4-20 mA range
-	GND	GROUND	
D2	DIN2	SWITCH 2 / COUNTER 2 / QUADRATURE 1B	Active is short to GROUND
A2	AIN2	ANALOGUE 2	0 – 2.4V or 4-20 mA range
-	GND	GROUND	
PO	PWR OUT	SWITCHED POWER OUT	Driven by CONTROL 1, max 1A
-	GND	GROUND	

PIN	NAME	FUNCTION	COMMENT
BT+	PWR IN	BATTERY / EXTERNAL POWER IN	Nominal 12V DC max 7.2Ah battery
BT-	GND	GROUND	

PIN	NAME	FUNCTION	COMMENT
D3	DIN3	SWITCH 3 / COUNTER 3 / QUADRATURE 2A	Active is short to GROUND
A3	AIN3	ANALOGUE 3	0 – 2.4V or 4-20 mA range
-	GND	GROUND	
D4	DIN4	SWITCH 4 / COUNTER 4 / QUADRATURE 2B	Active is short to GROUND
A4	AIN4	ANALOGUE 4	0 – 2.4V or 4-20 mA range
-	GND	GROUND	
PO	PWR OUT	SWITCHED POWER OUT	Driven by CONTROL 1, max 1A
-	GND	GROUND	

PIN	NAME	FUNCTION	COMMENT
OC	OC OUT	OPEN COLLECTOR OUTPUT	Driven by CONTROL 2, nominal 10 mA
-	GND	GROUND	
LV	LV OUT	INTERNAL LOW VOLTAGE SENSOR POWER SUPPLY	User selectable as 3.3V or 5V, max 100 mA
-	GND	GROUND	

BACK I/O CONNECTORS

PIN	NAME	FUNCTION	COMMENT
CHG+	CHARGER IN	CHARGING POWER IN	Nominal 16 - 24V 2A DC or 12V Solar Panel
CHG-	GND	GROUND	

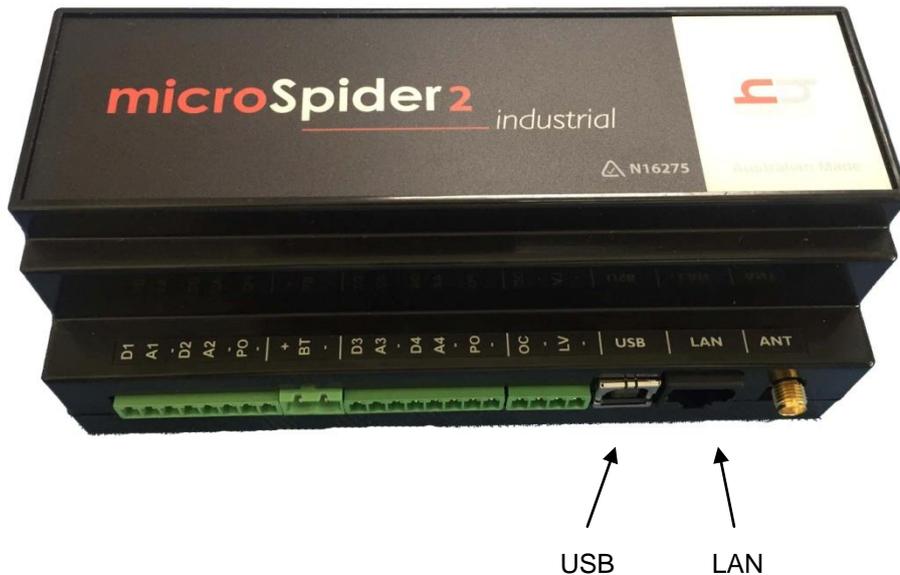
NOTE: all of the GND pins are equivalent and all inputs and outputs are referenced to this common ground.

Some usage scenarios of the microSpider2 I/O connectors are outlined below:

1. Using the connectors provided, connect Inputs as per manual
 - a. Switch, counter, quadrature and tamper inputs - connected directly to appropriate input and GROUND.
 - b. 4-20mA – connect directly between an available analogue input and GROUND.
External resistors are NOT required
 - c. Voltage inputs with a range of up to 2.4V – connected directly between an available analogue input and GROUND
 - d. Voltage inputs with a range over 2.4V – connected via dividing resistors (not supplied – see the manual for details)
2. “SWITCHED POWER OUT” can be used to power sensors from an external battery or power supply connected to “EXTERNAL POWER IN”. The microSpider2 will switch the power to the sensor when required.
3. “OPEN COLLECTOR OUTPUT” can be used to control external devices such as samplers and power supplies. When activated, this output will create a connection to GROUND through a 440 Ohm resistor.
4. “INTERNAL LOW VOLTAGE SENSOR POWER SUPPLY” can be used to power low power sensors directly from the microSpider2. This output is user settable as either 3.3V or 5V and is current limited to approximately 100mA. Please note that using this power supply will increase the system power consumption, reducing the battery life.

Connecting the microSpider2 Industrial to your PC

1. Disconnect your computer from your network and turn it on.
2. Connect one end of the red crossover LAN cable into the “LAN” connector of the microSpider2.
3. Connect one end of the white USB cable into the “USB” connector of the microSpider2.



4. Connect the other end of the LAN cable into your computer LAN port.
5. Connect the other end of the USB cable into a free USB port on your computer. (No drivers are required nor will be installed.)
6. Wait 60 seconds.
7. Open a browser program on your PC and request the following page: <http://192.168.0.177>
8. Log in, User Name is “user” and Password is “changeme” (without inverted commas)

Please note: while your PC is connected as described above, it will supply the power to the microSpider2. Therefore, there is no need to minimise PC connection times – the external battery will be unaffected by their duration. The only exception to this is modem operation.

NOTE: Steps 3 and 5 are not required for microSpider2 units with their LAN port mode selector set to “PWR”. Please refer to the “LAN Power Selector” section earlier in this document for more details.

Configuring your microSpider2

Continuing on from the previous section, follow these steps to begin configuring your microSpider2:
Once you have logged in, select "Change Setup" and

1. Go to the "Change Setup" page
2. Set location – to your site name
3. Set date and time
4. Set username and password for security
5. Configure and name the Inputs as required
6. Calibrate any Analogue Inputs
7. Set scaler and offset for any Counter or Event Inputs
8. Set the Control names
9. Set up Alarms and what you want to happen when the alarm triggers
10. Set up Network parameters
11. Set up E-mail parameters
12. Set up automatic report sending as required
13. Save setup

These steps should get you started, but make sure to read through the full manual to find out how to configure the microSpider2 features not mentioned above. There is a help button on most pages that provides additional information and tips.

Testing your microSpider2

Once you have set up and configured your microSpider2, you can test its input, output and communications functionality

Inputs and outputs are tested in the "normal" manner by connecting real or simulated sensors and observing the readings on relevant web pages.

Modem communications can be tested through the web browser by accessing the "Change Settings -> Modem Diagnostics" page. It provides sophisticated interactive diagnostics capable of testing most of the microSpider2 communication features.

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