IRIS-4 160

Quick Installation and
Maintenance Guide

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1. INTRODUCTION

The IRIS-4 160 offers a new concept in Alarm over IP (AoIP) providing cost effective AoIP for the residential sector. IRIS-4 160 is certified as suitable for all Grade 2 systems with an Alarm Transmission System (ATS) configuration up to SP3 for single path, or ATS configuration DP2 for dual path.

The IRIS-4 160 is based on the successful IRIS Touch NG range of AoIP diallers with the same hardware and software used in all IRIS diallers; with the same level of security and features provided to military, governments, banks and commercial industry but now also available to the residential sector.

Polling and alarm transmission are performed via the Ethernet, Wi-Fi or 4G/3G/2G communications to the monitoring centre using the IRIS Secure Apps monitoring software.
Using AddSecure's advances in hardware and software, the IRIS-4 160 is unique in providing battery backup for mains over 15 hours support in the case of mains power source failure. This backup is provided with only 4 NiMH AA rechargeable batteries, which allow a longer replacement life and a smaller design.

Note 1: The 15 hours standby is based on 15 minute polling with the recommended quality batteries. May reduce performance using a faster polling or other system loading.

Note 2: You can fit the IRIS-4 160 without batteries and will run as a standalone device without battery backup.

This manual gives a quick guide to the installation of products from the IRIS-4 160. For the full engineering manual, including multi-lingual versions, please visit our website http://www.addsecure.com

2. PRODUCT FEATURES

FEATURES	IRIS-4 160
Fire retardant enclosure	●
NiMH battery backup	>15 hrs
Ethernet	1
4G/3G/2G	●
Dial capture	●
Relays	3
Inputs (Pins)	4
Serial RS485	●
Serial TTL	●
RS232 (Basic)	●
Text messaging	●
Multi language menus	●
VoIP & SIP services	●

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3. PACKAGE CONTENTS

Contents:
• Dialler board in plastic housing
• 3 x screws and plugs for fixing the housing to a flat surface
• 2 x screws and washers for fixing PCB to plastics
• Ethernet cable
• 18k Ohms sense resistor for dial capture tamper detection

4. BOARD CONFIGURATION

① = Release clip
② = Sense
③ = DC power
④ = Micro USB
⑤ = Serial (TTL)
⑥ = RS485
⑦ = RS232
⑧ = Relays
⑨ = Dial capture port
      screw terminals
⑩ = Pin inputs
⑪ = AP Button
⑫ = Ethernet
⑬ = Battery case
⑭ = SIM card holder
⑮ = 4G/3G/2G antenna
⑯ = SYS LED
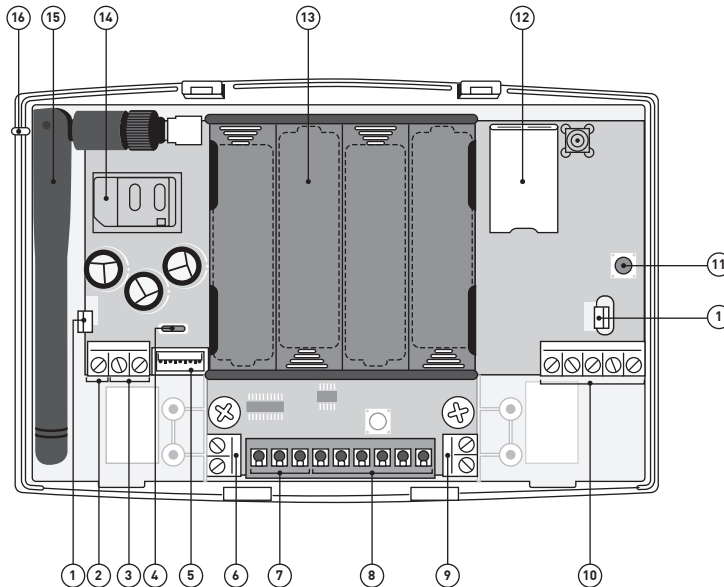
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LED INDICATION-tabell into another suitable location.
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5. BEFORE YOU START

Monitoring Centre (ARC)

Make sure that the monitoring centre to which the IRIS-4 160 device will send alarm signals is equipped with the appropriate IRIS Secure Apps receiving system. The following information should be obtain from the Monitoring Centre.

Dialler account number:	
Monitoring centre IP address:	

Ethernet Connection Details

The customer's Ethernet (LAN) network details are required in order to connect the IRIS-4 160.
Obtain the following information from the customer.

Fixed IP address or DHCP: ☐ Fixed   ☐ DHCP

If using DHCP then the following information will not be required as it will be assigned by the network.

IP address:	
Gateway address:	
Subnet mask address:	

Wi-Fi Connection Details

The customer's Wi-Fi network details are required in order to connect the IRIS-4 160 and the configuration device (e.g. Smart Phone). Obtain the following information from the customer.

Network name (SSID):	
Security type: (WEP/WPA/WPA2)	
Password:	

4G/3G/2G SIM Card and Access Point Name

If the installation uses 4G/3G/2G then a SIM card will be required. The IRIS-4 160 will also need to be given a 4G/3G/2G 'Access Point Name' (APN) and other possible configurations as shown below. Obtain these from the SIM card provider.

Access Point Name (APN):	
User name (USR):	
Password (PWD):	
SIM Pin:	

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6. INSTALLING THE IRIS-4 160 DIALLER

6.1. Mounting

Choose a suitable location, taking into consideration the routing of both power and dialler interface cables. To remove the cover push the two release prongs on the underside of the plastic case as indicated on the back of the case.

Once released, lift the lid slightly and push up until lid comes off, remove the dialler PCB (retained by two clips to left and right off the board). Position the housing on the wall and drill three holes. Feed the cables through the opening at the base of the plate, or via the 'knockouts', and secure the plate to the wall with the three screws supplied.

Slide the PCB back into the top retainers and within the side pillar and then gently secure the dialler back in place using the release clips.

Now secure the bottom part of the PCB using the 2 screws and washers supplied as shown in the image below, to comply with EN 50131-1:2006+A2:2017:

Fixing Screw
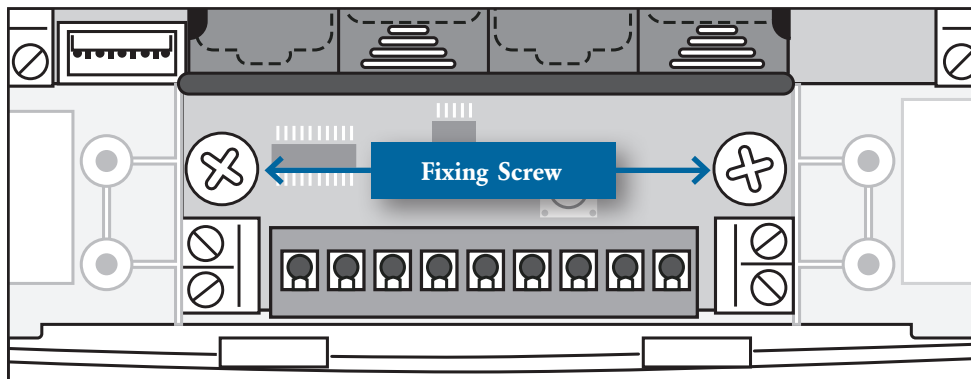
6.2. Power

Power using a 9-17V DC power supply specified to deliver a minimum of 1A current, and can use either screw terminals or TTL header indicated in Section 4 "Board Configuration".

Note: For Radio Equipment Directive compliance, the power cable must be no longer than 3 meters in length.

Fit the power cable. DO NOT APPLY POWER TO THE DIALLER UNTIL INDICATED.

6.3. Backup Batteries (optional)

Designed to continue reporting to the IRIS Secure Apps System at the Monitoring Centre to maintain confidence of link status in the case of a main power source failure. The design provides over 15 hours battery support with 15 minute polling across either Ethernet, Wi-Fi or 4G/3G/2G.

Note: Battery support could be shorter than the 15 hours if the polling period is shortened or other activities such as alarm alerting by the panel at regular intervals.

If batteries are required, DO NOT FIT until indicated in Section 6.9 "Configuration".
Use Batteries approved to IEC61951-2 (EN 61951-2). The IRIS-4 160 requires 4 x 1.5V NiMh AA size rechargeable batteries (not included).
Recommended manufacturers/types are:
- GP ReCyko 210AAHCB
- Annsman maxE 2100

Note: Do not use other battery types – including non-rechargeable batteries.

The required battery capacity is 2000mAH minimum and ideally they should feature low self-discharge. Maximum time to recharge to 80% = 32 Hours. Overvoltage protection triggered at 6.5V DC, with a deep discharge protection of 4V DC.

Note: Reduced system standby life and battery life if lower quality batteries fitted, not recommended.

6.4. Connections

Connect cables to the PCB for the system as shown on in Section 4 "Board Configuration":
- Ethernet enabled systems: Connect the 'ETH' connector using the Ethernet cable to the local IP router/switch or socket that allocated for the LAN/WAN network IP connection.
- Wi-Fi: Wi-Fi (wireless) 2.4GHz b/g/n internal PCB chip antenna.
- 4G/3G/2G enabled systems: 4G/3G/2G antenna already fitted to board.
- Dial capture port (optional and for more information see section below).
- 4 x Pin inputs (optional for more information see section below).

Optional Serial Connection
The following three connections to alarm panel are available.
- RS485 currently available for Honeywell Galaxy data bus (Alarms and Upload/download) or Risco ProSys bus (Upload/download) connections (optional).
- Serial (TTL) currently available for Texecom Com1 connections (optional).
- RS232 screw terminal (optional).

Note 1: For Radio Equipment Directive compliance, any interconnecting cable (Dial capture, Pin inputs or Serial connection) must be no longer than 3 meters in length.

Note 2: Please refer to the IRIS-4 160 Engineering Manual for wiring and connections information available from http://www.addsecure.com

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6.5. 4G/3G/2G SIM Card

DO NOT FIT SIM card until after you have performed the 4G/3G/2G Network Scan detailed in the Section 6.9 "Configuration". You will be prompted when to insert the SIM card.

6.6. Dial Capture

Dial Capture enabled systems: Connect the two dial screw terminals to the alarm panel dialler telecoms line connection. If the alarm panel has screw connections.

Note: Polarity is not important in this instance. For EN 50136-2: 2013 compliance fit the supplied 18K sense resistor in parallel with the dialler output of the alarm panel, at the alarm panel end of the cable.

Note: This resistor enables the dialler to detect cable faults and/or tampers, the Monitoring Centre will also need to enable the dial port monitoring on the IRIS Secure Apps software to receive alarm notifications.

6.7. Pin Inputs

The IRIS-4 160 dialler has four pin inputs that can be used to generate messages, These can be:

- Text messages via SMS (4G/3G/2G).
- SIA, Contact ID or Fast Format alarm messages over IP to the monitoring centre.

Note: You can also use the Pin alarm inputs in addition when directly connected to an alarm panel via the dial capture, serial or RS485 connections.

Via Open/Close Contact Source

Each pin input is designed to be connected in a loop via an open/close contact source from an alarm panel, or other device, to a reference ground pin available on the IRIS-4 160 dialler, as shown below.

Opening the contact (i.e. loop is open circuit) generates an alarm signal. Closing the contact generates the equivalent restore signal.
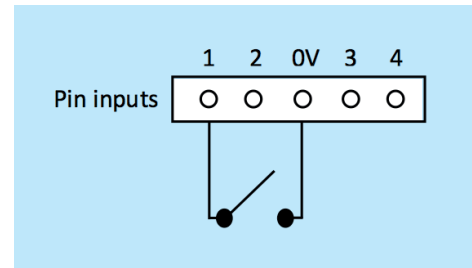
Via Sense Resistors

It is also possible to link the contacts to the IRIS-4 160 dialler via sense resistors so that an open or short circuit tamper on the loop is detectable and the Monitoring Centre alerted. In this case, the connections made should be as shown below.
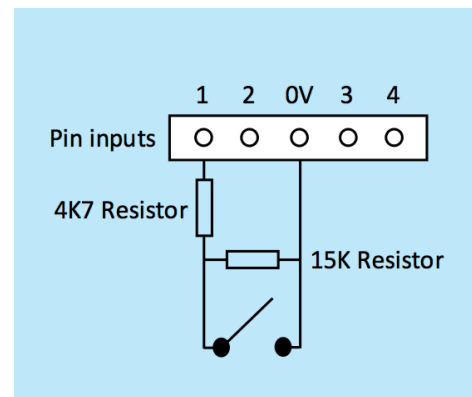
Note: For this feature to work correctly it is essential to connect the resistor at the contact end of the loop and not the dialler end. The Monitoring Centre must also enable the monitoring of this facility on the dialler within the IRIS Secure Apps receiving system.

6.8. Switch On

To confirm power is applied, look for the indicator 'SYS LED' flashing red on the IRIS-4 160 dialler board, top left hand corner.

6.9. Configuration

To configure the dialler, use any of the following the methods:

- Web browser via Wi-Fi.
- AddSecure IRIS Bluetooth App.
- Alarm panel integration e.g. Honeywell Galaxy (RS485 connection) Texecom Premier range (RS232 TTL connection).

Note: Please configure the alarm panel first for connections to Honeywell Galaxy or Texecom Premier on the serial integration, as these will transmit configuration to the IRIS-4 160 dialler. For more details on the alarm panel integration, download the full panel installation manual from http://www.addsecure.com.

- Connect the board's Micro USB connector to a laptop/PC running the IRIS Toolbox software. Download the IRIS Toolbox user guide from http://www.addsecure.com.

Defaulting

If at any point a complete default of the dialler is required, use the following procedure:

1. Completely power down the IRIS-4 160 by removing the power and one of the batteries (if fitted).

2. Now press and hold down the AP button.

3. Reconnect the batteries if needed and reapply power whilst still holding down the AP button for 10 seconds.

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Configuration via Web Browser using Wi-Fi Connection

Can be configured using the Wi-Fi connection using a standard Web browser from any smartphone/tablet or laptop device and supports the following network security WEP/WPA/WPA2.

The IRIS Web browser interface currently supports the following operating systems.

Note: You may be required to install some additional software for some operating systems:

Microsoft Windows.
Microsoft Windows based operating system (PC or laptop device) will require the initial installation of the Apple Bonjour service. Downloaded from the following link:

http://support.apple.com/kb/DL999

Android and Window phones.
Android operating system and Microsoft Windows phones will require the IRIS Connect App. Available for Windows Phone or Android from the App Store, simply search for 'IRIS Connect'.

Apple iOS.
Apple iOS operation system will work using the Safari Web interface and already has the Apple Bonjour service installed.

To initiate the Wi-Fi connection ensure that the IRIS-4 160 has power and then depending whether the front cover is on you have two options:

• Front cover on; use a physical 'Tap Tap' on the cover around ½-second interval between.

• Front cover removed; press the button labelled AP on the IRIS-4 160.

Press or perform either the AP button or the 'Tap Tap' and the SYS LED will change colour. For a local access point connection via Wi-Fi the SYS LED should be flashing 'purple', this indicates AP mode activated and is awaiting a connection. You now have a 30-minute time window to search and find the 'IRIS' network using either a smartphone, tablet or laptop's Wi-Fi connect search function.

Once the smartphone, tablet or laptop's Wi-Fi connects to this network, you will need to enter the password; by default, the password is 'password' all lower case.

Connecting to this should turn the SYS LED solid 'purple' and using the web browser connect to the IRIS-4 160 web interface by browsing to 'iris.local'.

Once connected enter the default installer code: 111111 and then click Logon. You will be prompted to change the password, please record the new password. Enter and confirm a new password and press Submit.

Note: Currently only communicating with the IRIS-4 160 via its internal Wi-Fi Access Point.

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IRIS-4 160 using 4G/3G/2G connection:

4G/3G/2G Network Scan

Select the '4G/3G/2G network scan'.
The scan must be carried out without the SIM card fitted. The dialler listens for every base station in range, requests operator name and records the signal strength. This will take a few minutes to complete.

This will take a few minutes to complete.
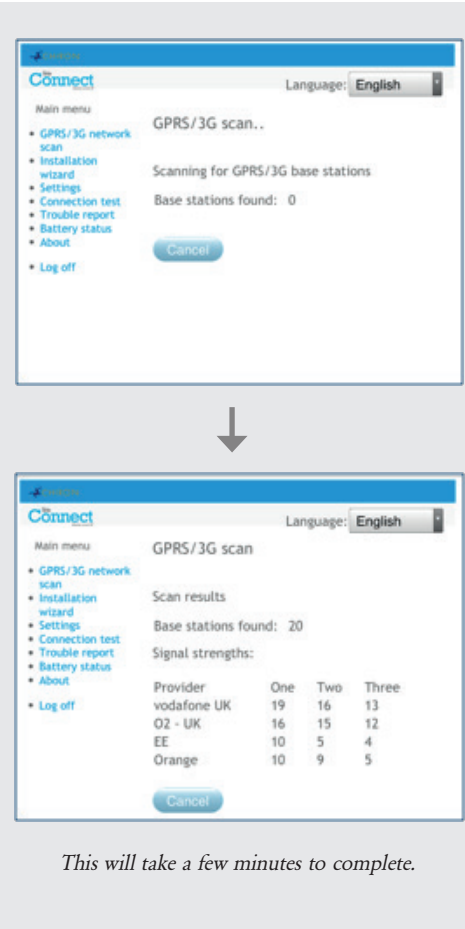
For a reliable 4G/3G/2G connection it is recommended that for the chosen network (SIM card) used there should be at least two base stations with signal strength (CSQ) of 10 or more.

If the signal strength is below or close to minimum then try to reposition the IRIS-4 160 or use an external building or high gain antenna (if necessary), and rerun the network scan to check signal strength.
Once you have the required 4G/3G/2G signal strength power down the dialler and insert the SIM card into the SIM card holder.
Insert the 4 x AA batteries if required and power the dialler back up.

Now press the button labelled AP again and on the connection device connect to the 'IRIS' network and using the web browser connect to the IRIS-4 160 web interface again by browsing to 'iris.local'.
Enter in the installer code setup beforehand and then select the Installation Wizard as indicated next.

IRIS-4 160 not using 4G/3G/2G or using Ethernet/Wi-Fi after network scan completed:

Installation Wizard
Select the Installation Wizard and follow the on screen prompts.

Note 1: If installing the IRIS-4 160 without batteries then please untick the 'Use battery backup' option.

Note 2: During the Installation Wizard the Wi-Fi status screen and the signal strength will be displayed. For a reliable Wi-Fi connection it is recommended that the Wi-Fi network used should have a signal strength of 20 or more. If this signal strength is lower than suggested try moving the IRIS-4 160 nearer the Wi-Fi router.
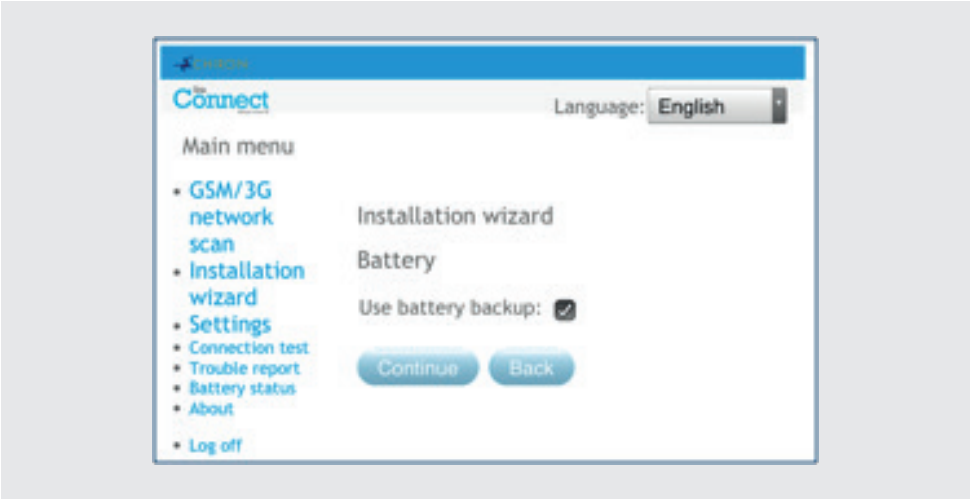
Once Installation Wizard is completed and any additional panel interface configuration setup via the settings menu, check/configure the panel for the connection method being used and the current battery status.

To check the current battery status go to the option 'Battery status' in the main menu and this will indicate the current status of the batteries.
Please go into the 'Battery status' option and confirm that the Health status is showing as "Good" before leaving site, as shown:
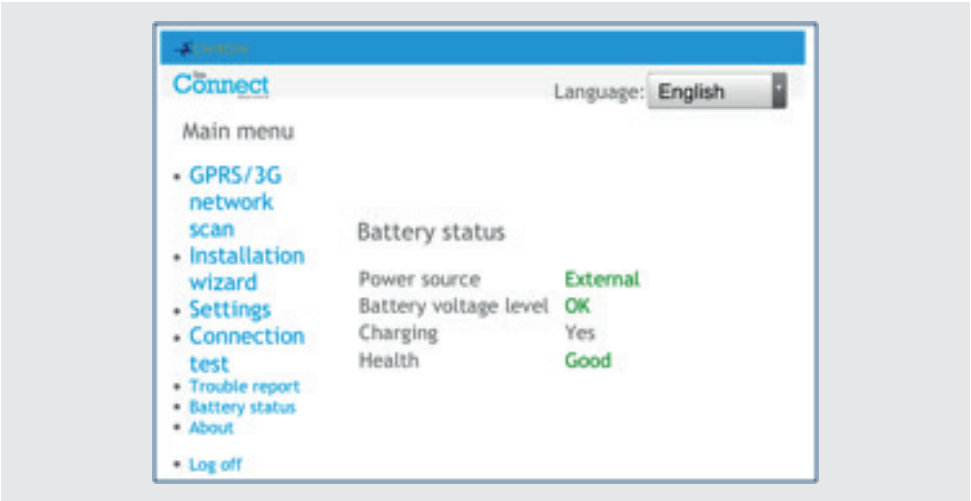
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6.10. Panel Configuration

Panel Configuration for Dial Capture

If connecting the IRIS-4 160 dialler via the dial capture method which is connecting the Telecoms module of the panel to the dial port of the IRIS-4 160, the following options will need to be configured:

Telephone Number = the 12 digit format of the Monitoring Centre IP address (e.g. 192.168.0.34 would become 192168000034). Account Number: 4 – 6 digit account number allocated by the Monitoring Centre.

Note: If the 'Alarm Override' mode is selected, the IRIS-4 160 dialler replaces the phone number and the account number used by the alarm dialler with the IP address of the Monitoring Centre and account number entered during configuration, so there is no need to change any settings on the alarm panel.

Alarm panel integration e.g. Honeywell Galaxy (RS485 connection) Texecom Premier range (RS232 TTL connection).

If you have not already made the changes to the relevant configurations in the panel for the integration, and require further details on these configurations then please download the full panel installation manual from http://www.addsecure.com.

6.11. Testing

Once all configurations are complete, perform a full commissioning test with the Monitoring Centre. This will normally involve testing normal alarm transmissions from the alarm panel over all communication paths to the Monitoring Centre. Verifying acknowledgement of these alarms with the operators at the Monitoring Centre.

7. MAINTENANCE

Inspect the dialler on an annual basis.
At each inspection, please perform the following:

- Confirm the status of the IRIS-4 160 unit.
- Clear any faults on the dialler.
- Check battery status and replace if below required level.
- Reflash IRIS-4 160 software to latest version.
- Test the configured communication paths (Ethernet/Wi-Fi/4G/3G/2G).
- Perform full test of alarms from the alarm panel and confirm acknowledgement of these by the operators at the Monitoring Centre.

The IRIS-4 160 will give a visual indication of the current system status via the SYS LED on top left side of case. If this is green the dialler is all reporting ok, if red the dialler has some trouble events being reported.

Engineers have the option via the Web Browser screen, or in the AddSecure Bluetooth app (coming soon), to see current faults, reflash to latest software and perform communication path checks.

To initiate the Wi-Fi connection engineers will need to ensure the IRIS-4 160 has power and then perform a Tap Tap (1/2 second gap between) on the front cover to put the dialler in Wi-Fi Access Point or Bluetooth mode (SYS LED flashing Purple or Blue depending on the desired connection).

You now have a 30 minute time window to search and find the 'IRIS' using either a smartphone, tablet or laptop's Wi-Fi/Bluetooth connect search function.

For Wi-Fi an 'IRIS' network should appear. Please connect to this which should turn the SYS LED solid 'blue' and using the web browser connect to the IRIS-4 160 web interface by browsing to 'iris.local'.

LED COLOUR	INDICATION
Red Flashing	Default state not currently configured
Red Constant	Wi-Fi successfully connected but still outstanding faults
Blue Flashing	In Bluetooth mode for configuration but with no current connection
Blue Constant	In Bluetooth mode for configuration and a device is connected
Purple Flashing	In Access point mode (AP) for configuration but with no current connection
Purple Constant	In Access point mode for configuration and a device is connected (AP)
Green Constant	Communicating and no current faults (flickers on every poll)

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Once the smartphone, tablet or laptop's Wi-Fi connects to this network, you will need to enter the password; check installation notes to see if this has been changed, the default password is 'password' all lower case.

Note: If engineers have never used/connected to an IRIS-4 160 before it may be necessary to download/install some application software to connect via the Wi-Fi Web browser, please refer to Section 6.9 "Configuration".

Enter the installer code (should be noted somewhere, possibly installation notes) and then click Logon. Engineers will now be in the Main Menu and can perform the following checks:

7.1. Confirm Current Status

Green SYS LED status is being reported ok go straight to Section 7.2 "Checking battery status". Red SYS LED indicates a trouble reported go to the option for "Trouble report".

Check the reported system troubles via the "Trouble report" menu. Please refer to the IRIS-4 160 Engineering Manual for more details available from http://www.addsecure.com.

7.2. Checking Battery Status

The IRIS-4 160 dialler will indicate any issues with the batteries. Engineers can check the current battery status via the "Battery Status" option and confirm that the Health Status is showing as "Good" before leaving site.
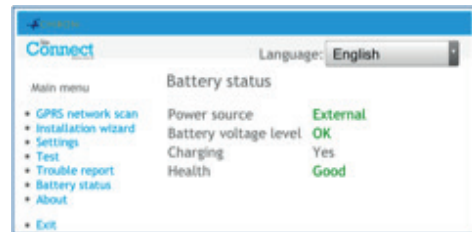
7.3. Replacing Batteries

If batteries fitted for backup purpose replaced them every two years.

7.4. Check Software Version/Reflash

Go to the settings menu and then select "Latest software?" this will then check with the AddSecure Reflash server if there is a later version available.

If a later version is available, the engineer will see the option to press the reflash button.

On first entry to the reflash option, which could be during installation or maintenance, the engineer need to change the password as required for EN50136-2 compliance. Please record the password on the installation documentation.

The reflash will take up to 15 minutes if via 4G/3G/2G and approximately 2 minutes with the Ethernet connection. Once completed the dialler will reboot and switch to the new software.

Note: All configurations for the IRIS-4 160 dialler are stored and there is no need to reconfigure.

7.5. Communication Path Checks

The engineers can test the communication paths for both polling and alarm communications using the 'Connection Test' option in the Main Menu. This will perform communication path checks for each path configured. Please refer to the IRIS-4 160 Engineer Manual for more detail available from http://www.addsecure.com.

7.6. Test Alarm Panel Alarms and Communication to Monitoring Centre

Depending on the monitoring centre, engineers will now be required to perform alarm test and possibly other tests to the Monitoring Centre. Before leaving site, the engineer should obtain confirmation from the Monitoring Centre that all is working correctly.

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8. SPECIFICATIONS

Transmission paths		IRIS-4 160
Ethernet		
	Standard	UTP 10/100 Base T with auto-negotiation
	Connection	RJ45 socket for CAT5 cabling
	IP addressing	Dynamic (DHCP) or fixed
	Fault detection	Loss of Ethernet synchronisation
Wi-Fi		
	Standard	IEEE 802.11 b/g
	Connection	2.4GHz b/g/n with internal PCB chip antenna
	Fault detection	Loss of association/data
4G/3G/2G		
	Frequencies	Penta band LTE (4G)
		800/900/1800 MHz
		2100/2600 MHz
		Dual band UMTS (3G)
		900/2100 MHz
		Dual band GSM (2G)
		900/1800 MHz
	Connection	SMA socket for antenna
	Fault detection	Loss of registration with network
IP		
	TCP ports (outbound)	53165 (Alarms & Polling), 51292 (Diagnostic & Reflashing),
		10001 (Upload/Download)
Alarm transmission		
Interface to Monitoring Centre		IRIS Secure Apps or IRIS Management Suite via EN 50136-2 pass-through mode
Dial capture interface to alarm panel		Two wire interface via terminal block **Note: Cabling must not exceed 3 meters**
Serial interface to alarm panel		RS485, TTL, RS232 **Note: RS232 cabling must not exceed 3 meters**

Transmission paths	IRIS-4 160	
Alarm transmission		
PIN Inputs interface to alarm panel	Maximum input voltage range 0V to +24V	**Note: Cabling must not exceed 3 meters**
	Input 'low' (alarm) threshold < 1V	
	Input 'high' (restore) threshold > 2V	
	Internal pull-up impedance 10K to 3.3V supply	
Alarm protocols	SIA (level 1 to 3) reference SIA DC-03-1990.01(R2003.10)	
	Contact ID reference SIA DC-05-1999.09	
	Fast format (Scancom) for dial capture and serial connections	
	Robofon (Dial capture only)	
	Telim (Dial capture only)	
	CESA (Dial capture only)	
Tamper detection reporting to Monitoring Centre	Dial capture interface, lid & back tamper, serial interface, pin inputs	
Fault reporting to Monitoring Centre	External power supply fail, low battery, transmission interface/path fault	
Relay outputs		
Maximum operating voltage	24V DC	
Maximum current rating	100mA DC	
Power supply		
Supply voltage	9V to 17V DC	
Typical current	83mA @ 12V DC	
Maximum current	1A @ 12V DC	
Recommended external PSU	12V DC 1A 12 Watt **Note: For Radio Equipment Directive the power cable needs to be no longer than 3 meters in length**	
Power storage		
Storage device type	4 x AA NiMH rechargeable batteries	
Storage device capacity	2000mAh	
Storage device time to recharge to 80% capacity	32 hours	
Storage device – voltage at which fault is reported	4.5V DC	
Storage device – voltage at which fault is restored	5V DC	
Storage device – over voltage protection triggered	6.5V DC	
Storage device – deep discharge protection	4V DC	
Environmental		
Operating temperature range	-10°C to 55°C	
Operating humidity range	95% max., non-condensing	
Weights and Dimensions		
Physical dimensions (L x W x D)	11.5 cm x 17.5 cm x 4.5 cm	
PCB weight	400 grams	
Fully packaged weight	600 grams	

SAFETY

Care should be taken when connecting telecommunications equipment to ensure only like interfaces are connected to avoid safety hazards.

SELV: SELV (Safety Extra-Low Voltage) is defined as a secondary circuit which is so designed and protected that under normal and single fault conditions the voltage between any two accessible parts does not exceed a safe value (42.4V peak or 60V dc maximum)

The interfaces on the IRIS-4 160 have the following safety classifications:
- Dial capture interface: SELV suitable for connection to the TNV interface of single line telecommunications equipment such as telephones, alarm panels, etc.
- Power Interface: SELV for connection to a DC supply
- Inputs: SELV for connection to alarm output pin.

CONFORMANCE

European Directives

The IRIS-4 160 complies with the following European Directives:
- 2014/53/EU (Radio Equipment Directive)
- 2013/35/EU (Electromagnetic Fields)
- 2004/108/EC (CE directive)
- 2002/96/EC (WEEE)
- 2011/65/EC (ROHS)

EN50131, EN50136 (VdS Certified)
The dialler is compliant with the requirements of European Standards:
EN 50131-1: 2006+A2:2017 & EN 50131-10:2014
EN 50136-1: 2012 & EN 50136-2: 2013
Security Grade 2
ATS-SP3 over Ethernet or Wi-Fi, ATS-SP3 over 4G/3G/2G, and ATS-DP2
Environmental Class II

CE