Firemon Alarm Signalling Equipment (ASE) Installation Checklist

Technical Instruction

TI-0157

Version 19

Effective 11 December 2023

Change summary

Version	Date	Change description
19	**11 December 2023**	Restore missing section 7
18	18 November 2023	Clear comments
17	17 November 2023	Romteck RM3119 release

This document was created using Technical Instruction Template C-TEMP0168 Version 8.

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1 Purpose

This document defines the checks to be completed by the installer during the installation, modification and decommissioning of Alarm Signalling Equipment (ASE) for the Fire Alarm Monitoring System.

This document is to be used during the installation of each ASE prior to alarms being put into operational use. It is also to be used for any modifications to ASEs including relocations, replacements, and input modifications.

2 Background

The decommissioning of the 3G network by mobile carriers requires the replacement of existing legacy Alarm Signalling Equipment (ASE) devices which utilise these services for connectivity.

The latest generation Alarm Signalling Equipment (ASE) devices called the **Romteck RM3119** are being rolled out to replace existing legacy RM2118 and RM3118 “Lisa” (3G only) devices at monitored sites. The RM3119 device contains two mobile data modems, which provide a redundant uplink to the alarm monitoring network via two carriers, Telstra and Optus. The two SIMs required for the uplink are supplied by Airservices.

The existing 3G/4G RM3118 Telit ASEs, will remain in service until the decommissioning of the 4G network.

3 Scope

This document applies to both the Contractor/Installer/Customers and Airservices Australia personnel in preparation for commissioning of an ASE.

It summarises test results captured as part of installation procedures at a single ASE site.

4 Responsibility

During the time that an ASE is not fully operational, it is vital for the customer to put in place alternative fire safety protections to ensure an appropriate level of fire safety during the outage.

To assist all building owners and managers to know their rights and responsibilities in relation to automatic alarm monitoring, an information guide (Monitored Automatic Alarms) has been developed as a joint initiative by the Victorian Building Authority, CFA, MFB, ADT, Chubb and Romteck GRID.

It is the responsibility of the customer to:

1. Must be aware and comply with all Building Regulations.
2. If their monitored automatic alarm system is not fully operational, it is vital to put alternative fire safety procedures in place to ensure an appropriate level of fire safety during this period.
3. As outlined in How to Apply for Airservices Automatic Fire Alarm Monitoring, for new installations or upgrades, ensure an Application for Automatic Fire Alarm Monitoring Service form has been received by Airservices.
   a. Wait for written approval from arfffirealarmmonitoring@airservicesaustralia.com.
   b. Provide local ARFFS staff with keys and other applicable information about the building.
   c. Order the ASE and all associated equipment as defined in Section 7.
   d. Organise an Airservices Certified Maintainer to configure and install the ASE. A list of accredited installers is available via: Airservices_ASE_Installers
   e. Airservices will send the Telstra and Optus SIMs to your nominated Airservices Certified Maintainer.
   f. Ensure the Installation Checklist in Section 11 is completed and has been e-mailed to Airservices by your Airservices Certified Maintainer.
   g. The Airservices Certified Maintainer is to organise a suitable date and time to perform end-to-end testing with Airservices.
   h. A confirmation email will be provided by Airservices to notify the customer that commissioning has been completed successfully.
4. ~~To modify the Services monitored by ARFF, an Alteration of Service form must be submitted to arfffirealarmmonitoring@airservicesaustralia.com. Alteration of Service checklist shall be used to commission the new input(s).~~
5. Once an ASE is installed, a building permit from a registered building surveyor must be obtained to disconnect it. To decommission an ASE, a Removal of Service form must be submitted to arfffirealarmmonitoring@airservicesaustralia.com. Section 16 ASE Decommissioning checklist must be completed.
6. An inspection and testing of a completed installation **may** be carried out by ARFFS. When a re-inspection of an ASE is required due to the installation not complying fully with the installation checklists or the standard of work for some reason is unacceptable at the time of the inspection, a re-inspection fee may be levied on the customer.
7. Ensure the installation, maintenance and repair of ASEs complies with the requirements of the relevant Australian Standards.

8. The ASE configuration is used to rebuild a failed ASE to meet Australian Standard restoration times. The ASE configuration is to be archived and stored as per the customer's company's policy. Airservices takes no responsibility for archiving or storage of the ASE configuration.

   Note: No routine maintenance is required specifically for the ASEs. End-to-end testing of the ASE is performed as part of the monthly Australian Standards Fire Alarm checks (AS1851-2012).

Romteck Australia (https://www.romteck.com/) will supply:

1. New and replacement hardware as per section 7.
2. Manage ASE and associated equipment Warranty provisions.
3. ASE Maintenance Configuration and Diagnostics Software for ASE and FSE Devices Operators Manual, version Revision 0.5 or greater
4. Romteck ASE Config Operation Manual, version 0.1 or greater
5. Romteck RM3119 ASE Installation Manual, version 0.1 or greater
6. ASE RM3118 Alarm Signalling Equipment (ASE) Operation and Installation Manual, Revision 0.4 or greater
7. RM2118 GPRS/HSDPA Alarm Signalling Equipment (ASE) Operation and Installation Manual, Revision 0.8 or greater

It is the responsibility of the installer/maintainer technician to:

1. Understand that while a monitored automatic alarm system is not fully operational, it is vital to put alternative fire safety procedures in place to ensure an appropriate level of fire safety during this period.
2. Diligently follow the instructions contained within this document where applicable.
3. The ASE is fitted with an electronic key, the maintainer is to retain a record of who those keys are assigned to. Will not give the key to anyone else to use. It is only for your use in accordance with your operational need and work requirement.
4. Routine servicing end-to-end system checks are to be performed as part of the AS1851 monthly FDCIE checks.
5. Maintain after hours or emergency contact numbers for the building. When a fault is detected in an ASE or FDCIE which requires repairs to be undertaken, every effort must be made to complete the repairs as soon as possible.
6. Hold sufficient spare ASEs to meet Australian Standards restoration times.
7. Section 11 checklist shall be used to configure, install and commission a new ASE RM3119 or upgrading from a RM2118 / RM3118 to a RM3119.
8. Should an existing ASE be disconnected and reconnected for any reason, upon the reconnection the Section 12 checks shall be conducted and emailed to Airservices.
9. An e-mail must be sent to ARFFS when isolations are planned and likely to be over an extended period. Unplanned short term isolations, the technician may advise ARFFS via phone.

10. Arrange a time to perform live end-to-end commissioning testing. Note: 'Live end-to-end' commissioning testing activities occurs during normal business hours (Australian Eastern Standard Time).
11. Perform live end-to-end commissioning testing. Commissioning involves testing the primary and secondary communication paths and their signal strength. An end-to-end test is performed from the FDCIE through to the ARFFS station. All inputs connected to the ASE must be tested, including the Alarm, Fault and Zone Isolate.
12. Provide the Customer a backup of the ASE configuration.

It is the responsibility of an ASE key-holder to:

1. Understand that while a monitored automatic alarm system is not fully operational, it is vital to put alternative fire safety procedures in place to ensure an appropriate level of fire safety during this period.
2. Diligently follow the instructions contained within this document where applicable.
3. The ASE is fitted with an electronic key, the key-holder is to retain a record of who those keys are assigned to. Will not give the key to anyone else to use. It is only for your use in accordance with your operational need and work requirement.
4. Routine servicing end-to-end system checks are to be performed as part of the AS1851 monthly FDCIE checks.
5. An e-mail must be sent to ARFFS when isolations are planned and likely to be over an extended period. For unplanned short term isolations, the technician may advise ARFFS via phone.

It is the responsibility of Airservices to:

1. Provide technicians with a single point of contact for the Airservices System. This support is available business hours Australian Eastern Standard Time via arffsystemsupport@airservicesaustralia.com.
2. Provide the Telstra SIM, Optus SIM and ASE configuration.
3. For new installations, to create an alarm shell in Firemon.
4. Local ARFFS staff will collect Building keys and other routine information about the building.
5. Assist in performing live end-to-end commissioning testing.
6. Generate an internal Commissioning Test Report.
7. Provide a commissioning report to the Customer.

5 Legal obligations

The customer and technicians must comply with all state and territory regulations.

Fire alarm systems are complex in design and need to be maintained by a reputable fire maintenance company that has expertise in this field.

It is now an offence in most states and territories to damage or interfere with a fire indicator panel or other apparatus that transmits the signal to the fire services (monitored automatic alarm system) without reasonable excuse. Interference of this kind includes any action that causes the transmission of the signal to the fire service to be isolated, disconnected or disabled. This means that interfering with the ASE without a reasonable excuse is also an offence. Refer to Monitored Automatic Guidelines (Monitored Automatic Alarms) for more advice on managing an ASE.

Airservices recommends the customer adopt a minimum isolation policy. ASE isolations are not to be made to prevent false alarms from normal day to day activities.

If the monitored automatic alarm system is not fully operational, it is vital for the customer to put alternative fire safety procedures in place to ensure an appropriate level of fire safety during this period.

5.1 Managing an isolated alarm system, partial isolation or temporary disconnection: Alternative fire safety procedures

ASE isolations are not to be made to prevent false alarms from normal day to day activities.

Follow the instructions provided by the relevant building surveyor with the building permit or occupancy permit. If these are not provided, please consider the actions outlined in Monitored Automatic Guidelines (Monitored Automatic Alarms).

5.2 Can an ASE (or its separate inputs) be temporarily disconnected?

For emergency work (e.g., in the case of equipment breakdown), or for prolonged maintenance requirements that require the ASE or its separate inputs to be disconnected, Airservices may agree to a written request to disconnect an ASE for a maximum of 24 hours without a building permit. For all other temporary disconnections, a building permit must be obtained, and a copy provided to Airservices together with a reconnection date or best estimate for the length of the disconnection. Examples of when temporary disconnections are required:

- for structural renovation affecting the entire site protected by the ASE.
- for non-occupancy of building – ensure the site and/or building is made secure.

5.3 Can an ASE be permanently disconnected?

Once an ASE is installed, a building permit from a registered building surveyor must be obtained to disconnect an ASE.

6 How to become an Airservices Certified Maintainer or ASE key-holder

Fire alarm systems are complex in design and need to be maintained by a reputable fire maintenance company that has expertise in this field. The Airservices Certification process is a necessary part of the briefing the technicians must undergo before working on an ASE connected to the Airservices system. It is essential for the customer to confirm their technicians have had the minimum training. The certification is valid for 5 years. Upon expiry of the certification, the assessment must be retaken. Airservices Certified Maintainer or ASE key-holder request form is available via the following link TI-0223.

7 Hardware Configuration

This section contains the current standard configuration and other important information.

7.1 RM3119 Hardware Configuration

Order the following equipment directly from Romteck Australia.
37 Collingwood St, Osborne Park WA 6017 Phone: +61 8 9244 3011

Airservices standard configuration includes the following hardware:

New Quantity	***Replacement Quantity***	***Equipment***
1	1	Romteck RM3119-WIP-WIP-ASE-F
2	See Antennas	PID 27389 Benelec 024584 Cellular 5G Dipole Antenna
2	See Antennas	PID 9988 Benelec 02729 Stainless Steel Wall Bracket 58mm
1	1	Romteck 470-ohm Resistor Board
2	2	Airservices will supply the Telstra and Optus SIMs for the RM3119 ASEs.

Note: If there is poor mobile reception on site a 3 metre or 5 metre coaxial cable may be required.

7.2 Antennas

Please read the following important information if you are replacing an existing ASE.

7.2.1 Benelec 024584 Cellular 5G Dipole Antenna

The Benelec 024584 Cellular 5G Dipole Antenna was also previously sold with RM3118 units for 4G connectivity. Although it has since been renamed, it is the same model and covers the same frequencies. If you are replacing an RM3118 ASE, you may use the existing Benelec 024584 antenna(s), and bracket(s) installed at the site and order the difference to meet the required quantity.

Pictured on the following page are two variants of the Benelec 024584 antenna. An existing 4G labelled variant on the left, and the new 5G labelled variant on the right. Both variants cover the same frequencies.


BENELEC
BENELEC
024584
Cellular 4G B/Station Ant
690–960MHz & 1710–2700MHz
Made in Australia
BENELEC
024584
Cellular 5G
Base Station Antenna
Made in Australia

7.2.2 Benelec 02458 Cellular (3G) Dual Band Antenna (Legacy)

Important!

The Benelec **02458** Cellular (3G) Dual Band Antenna is not authorised for use with the RM3119 ASE.

When identifying antennas, be sure not to mistake the Benelec **024584** 4G/5G antenna for the Benelec **02458** 3G antenna, which is pictured on the following page.


BENELEC
BENELEC
02458
Cellular Dual Band B/Station Ant
820 – 960MHz & 1710 – 2200MHz
Made in Australia

7.3 Touch Keys

The RM3118/RM3119 ASEs use a Touch Key for access to key Test and key Isolate. Airservices is a Key Issuer and can issue keys with the key issuer code of “**ASA**”. Touch Keys may only be issued to Airservices Certified Maintainers or ASE key-holders. Refer to Section 6.

Only valid keys may be used on the RM3118/RM3119 ASE. ASEs monitored by ARFFS are configured to accept keys from ALL key issuers.

Firemon records an audit trail of when a key is used to access the ASE. Firemon records the key issuer, key number and key serial number. Firemon also records events such as key Test and Isolation events.

Touch Keys are ordered via the TI-0223 process.

8 Acceptance Criteria

Once all checks listed in Section 11 or 13 are successfully completed by the installer, a signed copy of the Checklist shall be emailed to Airservices.

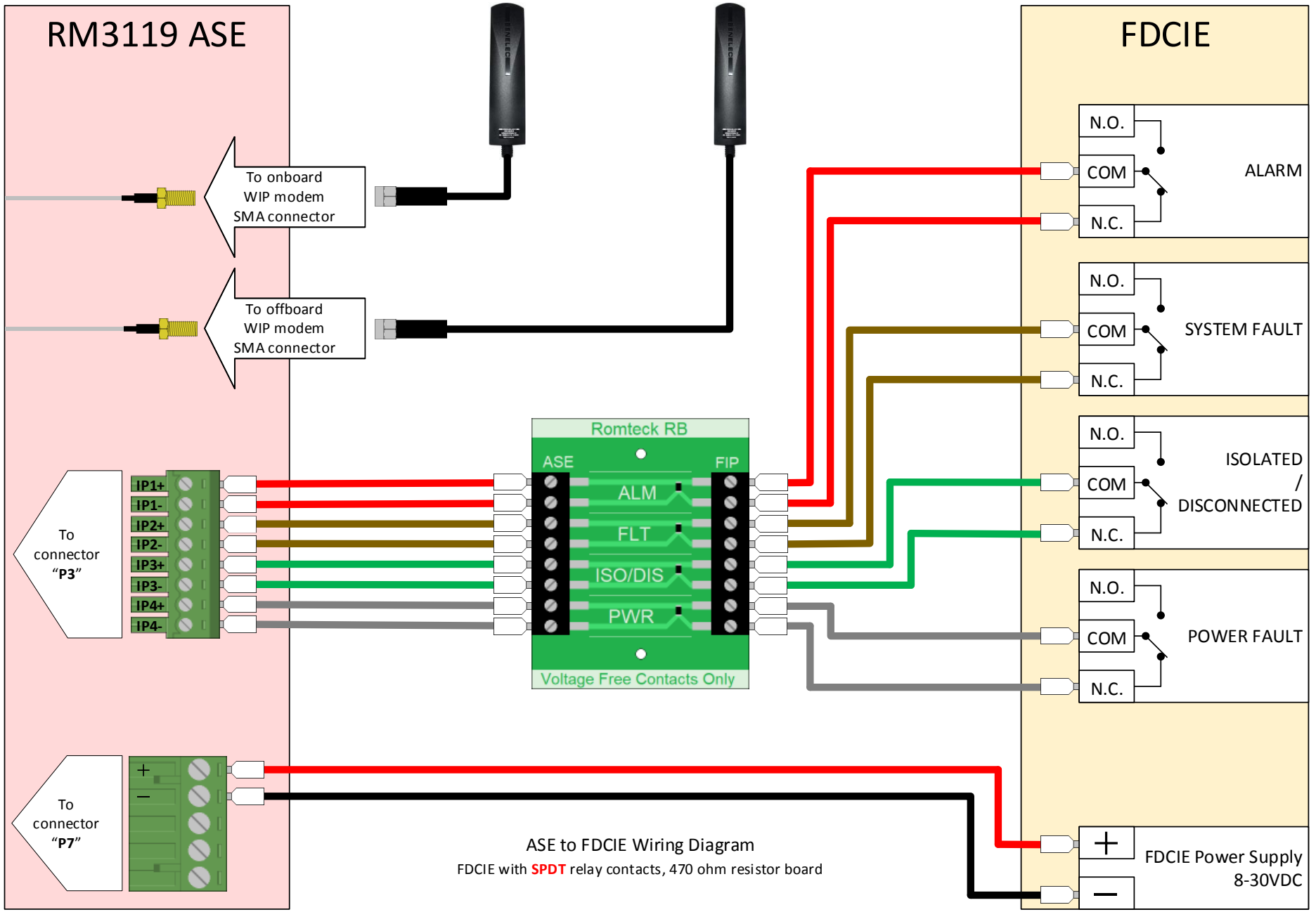
9 ASE Interfacing

9.1 ASE to FDCIE Interfacing

The ASE shall be connected to the Fire Detection Control and Indicating Equipment (FDCIE) relay contacts via a 470 ohm resistor board for monitoring of:

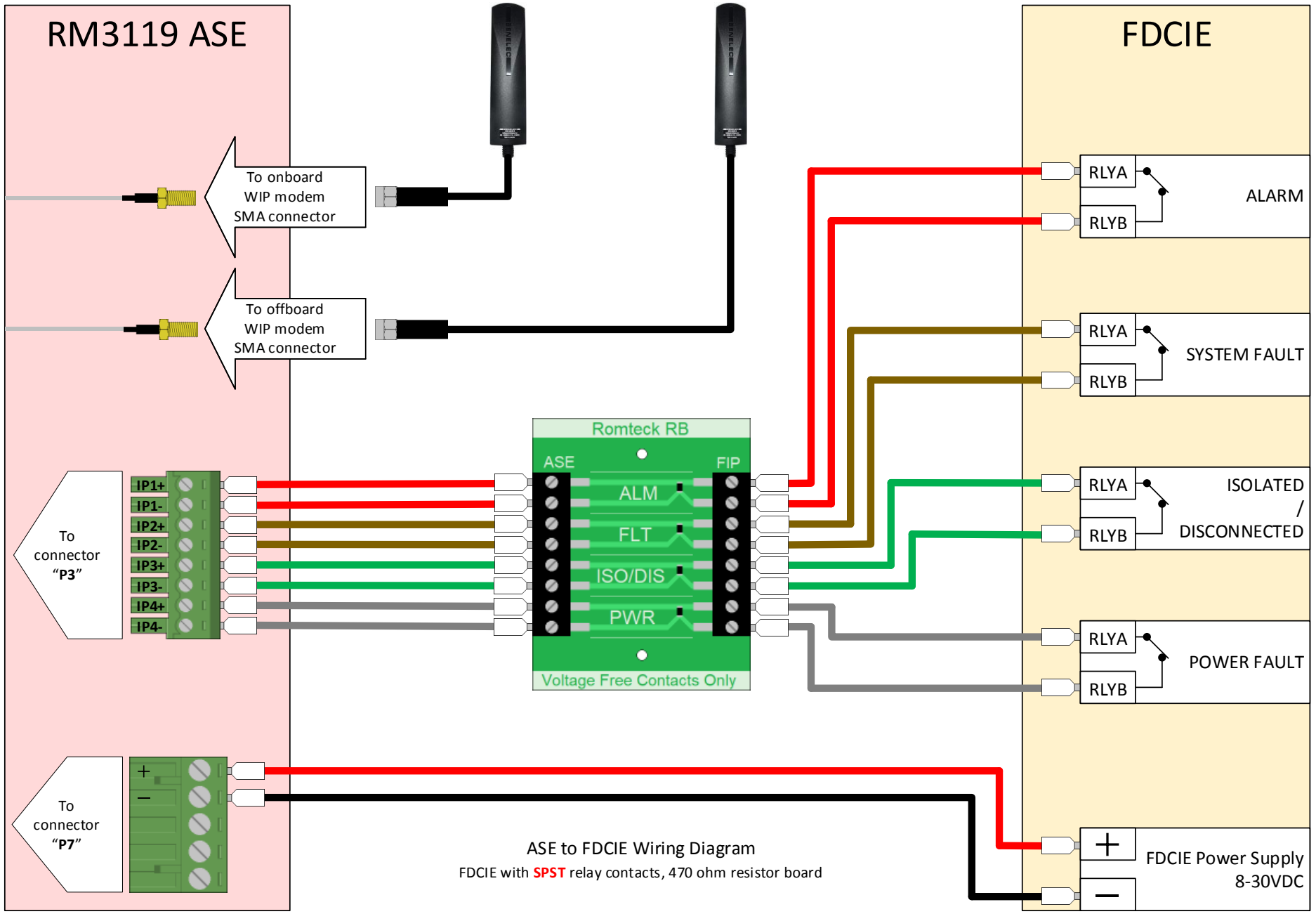
- "**Fire Alarm**"
- "**System Fault**"
- "**Disconnected / Isolated**"
- "**Power Fault**"

Refer to the wiring diagrams on the following two pages.



ASE to FDCIE Wiring Diagram

FDCIE with **SPDT** relay contacts, 470 ohm resistor board



ASE to FDCIE Wiring Diagram

FDCIE with **SPST** relay contacts, 470 ohm resistor board

9.2 ASE to Communications Network Interfacing

The ASE acquires the alarm signals from the Fire Detection Control and Indicating Equipment (FDCIE) and transmits these to the Airservices Firemon system using two communications paths. The primary path is Telstra and the secondary path is Optus.

Note that both communications paths are required to meet the reliability requirements in Australian Standard AS-1670.3.

10 Antenna Installation

The two antennas must be installed as per the Romteck RM3119 ASE Installation Manual:

- Never mount an antenna where it is likely to be within 200mm of a person's head.
- Never mount an antenna inside the FDCIE cabinet.
  This not only compromises the signal strength but can also cause interference with the FDCIE operation.
- ASE antennas must not be mounted near other equipment antenna which may interfere with its operation.
  Refer to section 3.3.2.1 "Dual Antenna Separation" in the Romteck RM3119 ASE Installation Manual.
- ASE antennas must be suitably separated from each other.
  Refer to section 3.3.2.1 "Dual Antenna Separation" in the Romteck RM3119 ASE Installation Manual.
- Antenna cable should be kept as short as possible or low loss cable used to minimise signal loss.
- ASE antenna must not be mounted where they are susceptible to vandals.
- ASE antenna type and location must be such as to ensure suitable signal levels in all operating bands.

If there is poor mobile phone signal on site, adjusting the location and orientation of the antenna will make a marked difference to improving the reception. A 3 or 5 metre coaxial cable can be provided by Romteck Australia on request.

11 New RM3119 Dual SIM ASE Installation Checklist

The following checklist is to be used when installing or upgrading to the RM3119 ASE.

It must be completed by the installer.

If installing a new RM3119 ASE:

- A Fire Alarm Monitoring Service Form must have already been submitted and **accepted** by arfffirealarmmonitoring@airservicesaustralia.com.
- Order equipment as per Section 7.
- Airservices will express post the following to the nominated Airservices Certified Maintainer:
  - Telstra and Optus micro-SIMs
  - A copy of TI-0157 pre-filled with the required information.
- Airservices will provide the following information via e-mail to the nominated Airservices Certified Maintainer:
  - Zip file containing the baseline configuration device for ASEs connected to the Airservices system
  - Site
  - Device Number
  - Device Name
  - Telstra Username, password and SIM IMSI
  - Optus Username, password and SIM IMSI
  - Concentrator, Module, Line and Drop
- Section 11.1 checklist shall be used to configure the ASE to connect to the Firemon test system. When configured, the new ASE will talk to the Airservices test network and hence alarms will not be displayed in the ARFFS Station.
- Section 11.2 checklist is completed **just prior** to the live end-to-end commissioning testing to minimise callout/downtime. ASE commissioning may proceed once a completed TI-0157 checklist is received from the installer and a final commissioning date is agreed to by: the installer, ARFFS FCC and ARFFS Systems Support. To ensure availability of all personnel, it is recommended this communication with arffsystemsupport@airservicesaustralia.com is made well before the installer goes to site.

11.1 ASE Configuration and Testing

This section details the procedures to configure an ASE prior to on-site installation.

11.1.1 RM3119 Baseline Configuration Device

The RM3119 baseline configuration device is a device template used to configure new RM3119 ASEs prior to installation. This procedure details the steps to import the device into the ASE Config application.

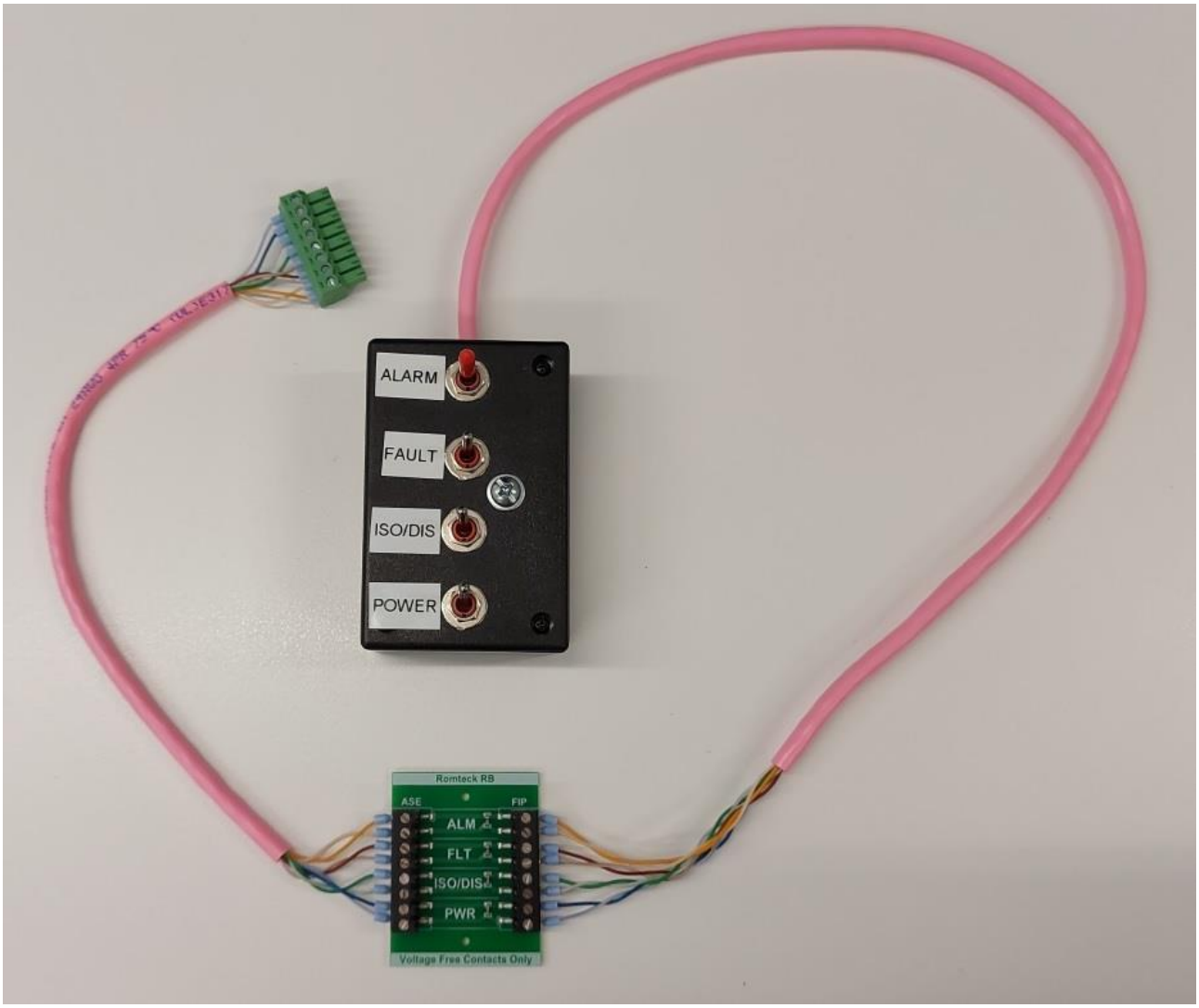
If you have already imported the latest RM3119 baseline configuration device into the **ASE Config** application, skip this procedure.

1) Launch the **Romteck ASE Config** application.
2) Optional: Navigate to “**Setup**” => “**System Settings**”,
   and set “**Data Directory**” to a desired location.
3) Navigate to “**File**” => “**Import Device(s)…**”.
   Browse to and select “**ASE_Baseline_1002_V3.zip**” and click “**Open**” to import it.
   Click “**OK**” on the import successful prompt.

11.1.2 Contact Simulator

The contact simulator is a test device used to simulate the relay contacts of a FDCIE upon the ASE's inputs.

Pictured below is an example constructed out of 4 SPDT toggle switches mounted inside an ABS enclosure. Wiring is done with offcuts of CAT-5 cable (stranded core) terminated with 24 AWG bootlace ferrules. It is connected to a Romteck 470-ohm resistor board for testing RM3119 ASEs.



11.1.3 ASE Configuration

This procedure details the steps to connect and configure an ASE prior to on-site installation.

1) Ensure the ASE is powered off.
2) Install the **Telstra micro-SIM** into the **on**board modem's micro-SIM socket.
3) Install the **Optus micro-SIM** into the **off**board modem's micro-SIM socket.
   Connect the two **Benelec 024584** antennas to the ASE's two SMA terminated antenna leads.
4) Connect the **Romteck RM3119 Programming Adaptor** to the ASE's onboard serial connector "**P6**".
   Use a **USB-C** cable to connect the **Romteck RM3119 Programming Adaptor** to your PC / laptop.
5) Connect your **contact simulator** via a **470-ohm resistor board** to connector "**P3**".
6) Connect the ASE's DC power supply to connector "**P7**", then power on the ASE.
   Power is supplied via pin **4** (negative) and pin **5** (positive) of connector "**P7**".
   The ASE operates on any DC power supply between 8V to 30V.

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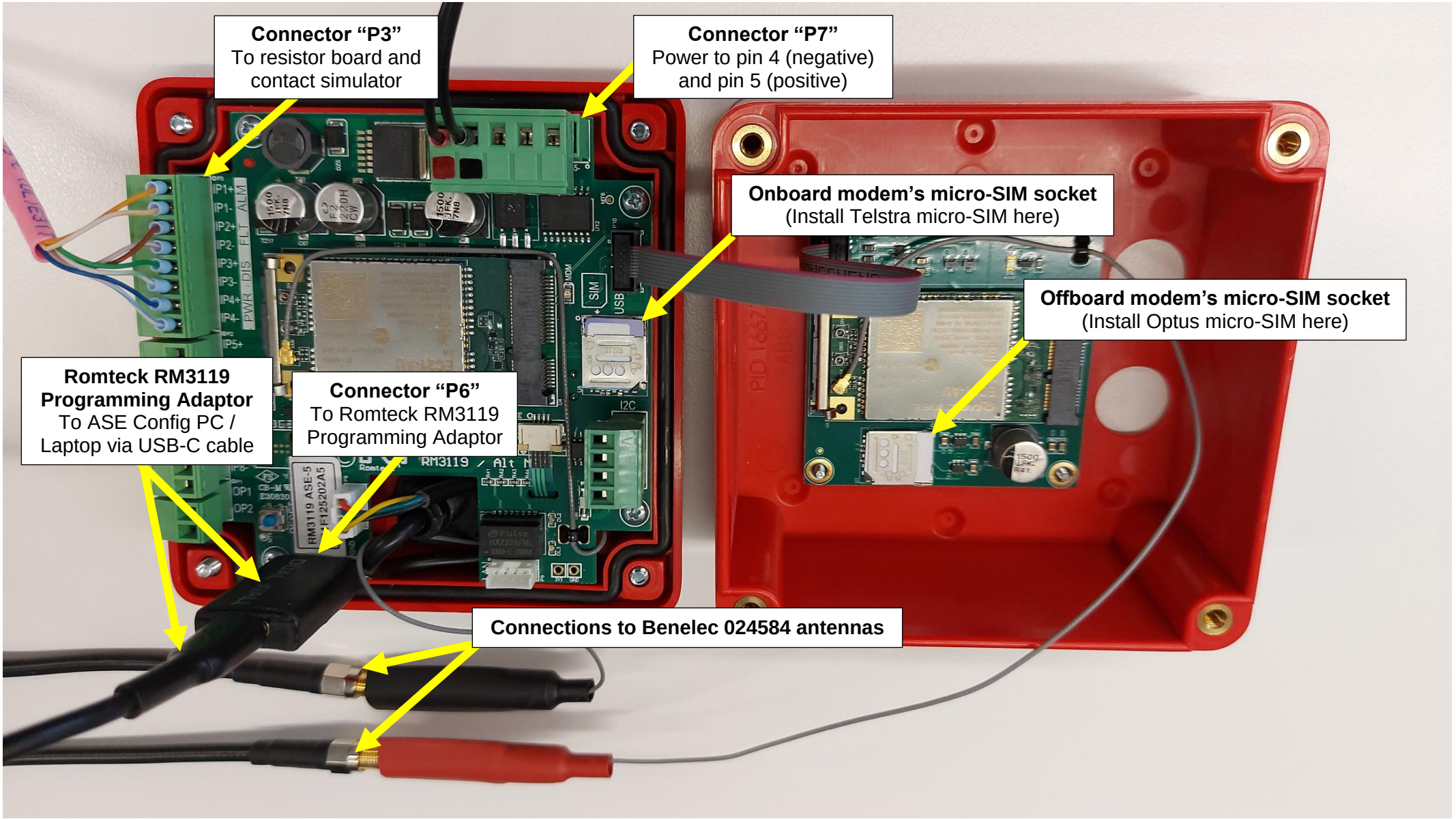

Connector “P3”
To resistor board and contact simulator
Connector “P7”
Power to pin 4 (negative) and pin 5 (positive)
Onboard modem’s micro-SIM socket
(Install Telstra micro-SIM here)
Offboard modem’s micro-SIM socket
(Install Optus micro-SIM here)
Romteck RM3119 Programming Adaptor
To ASE Config PC / Laptop via USB-C cable
Connector “P6”
To Romteck RM3119 Programming Adaptor
Connections to Benelec 024584 antennas

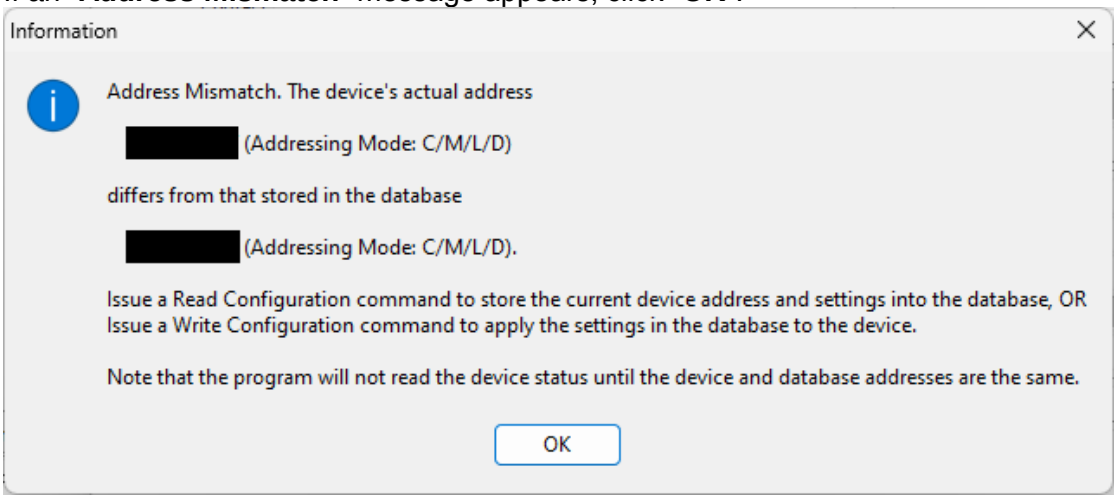
7) Launch the **ASE Config** application.

8) Navigate to “**Setup**” => “**System Settings…**” and select the “**Communication Settings**” tab. Ensure “**Com Port:**” is set to the correct port, then click “**OK**”.
Note: The exact COM port number associated with the **Romteck RM3119 Programming Adaptor** will depend on your system, the USB port used, as well as the number of existing COM ports present. To check COM port allocations, open “**Device Manager**” and expand “**Ports (COM & LPT)**”, then look for “**USB Serial Port (COM#)**” where “#” is the COM port number.

9) Sort the device list by clicking on the “**Firemon Device No**” column header, then locate **Firemon Device No 1002**.
This blank ASE contains the Airservices baseline configuration, which is configured to connect to the **TEST** system.

10) Right-click **Firemon Device No 1002** and select “**Copy Device**”.
This will create a copy which is then highlighted.

11) Right-click on the copy just created, and select “**Connect**”.
This will connect to the ASE and open the device configuration window.
If an “**Address Mismatch**” message appears, click “**OK**”.



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12) Select the "**Device Details**" tab and update the following details using the information provided by Airservices (indicated in red in the image below):

a) "**Concentrator**"

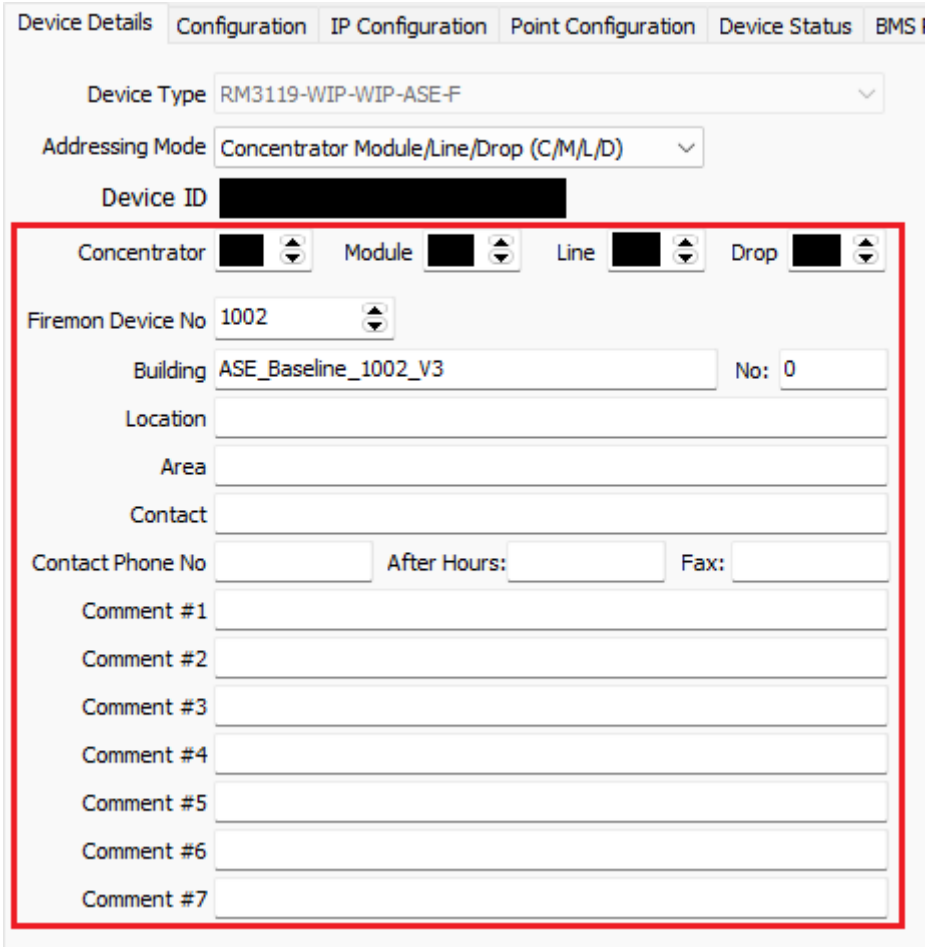
b) "**Module**"

c) "**Line**"

d) "**Drop**"

e) "**Firemon Device No**"

f) In the "**Building**" field, use the naming convention: "**XX-Building Name**". Where "**XX**" is the region and "**Building Name**" is the name of the building.



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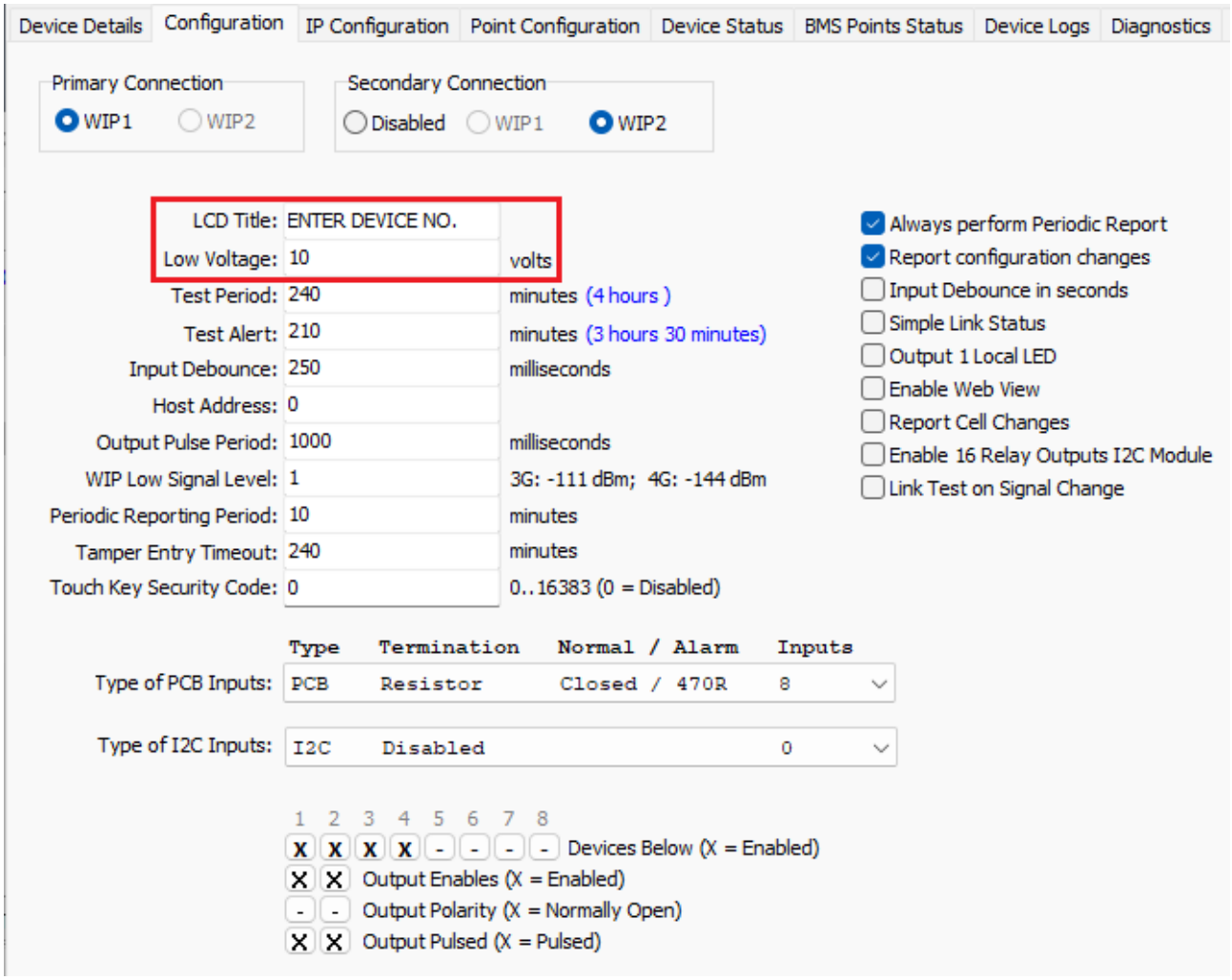
13) Select the "**Configuration**" tab and update the following details (indicated in red in the image below):

a) In the "**LCD Title:**" field, enter "**DEVICE ###**",
where "###" is the **Firemon Device No**.

b) In the "**Low Voltage:**" field, enter a value approximately 10% below the installed FDCIE power supply voltage.



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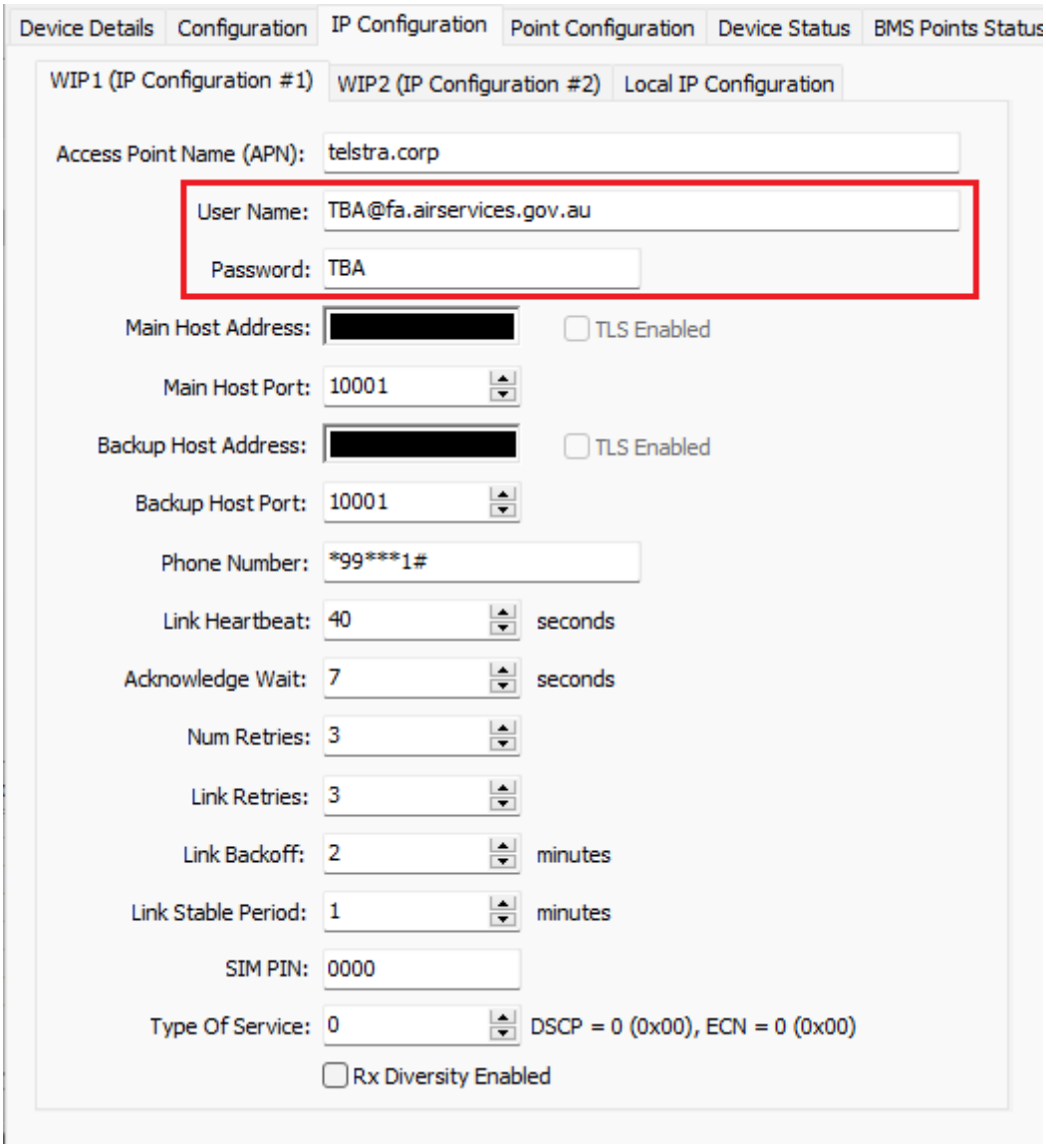
14) Select the "**IP Configuration**" tab.

15) Under the "**IP Configuration**" tab, select the "**WIP 1 (IP Configuration #1)**" tab and update the following details (indicated in red in the image below):

   a) In the "**User Name:**" field, enter "**<USERID>@fa.airservices.gov.au**", where "**<USERID>**" is the Telstra user ID provided by Airservices.

   b) In the "**Password:**" field, enter the password provided by Airservices.



Note: For RM3118/9 ASEs, the PIN will be disabled (i.e., 0000)

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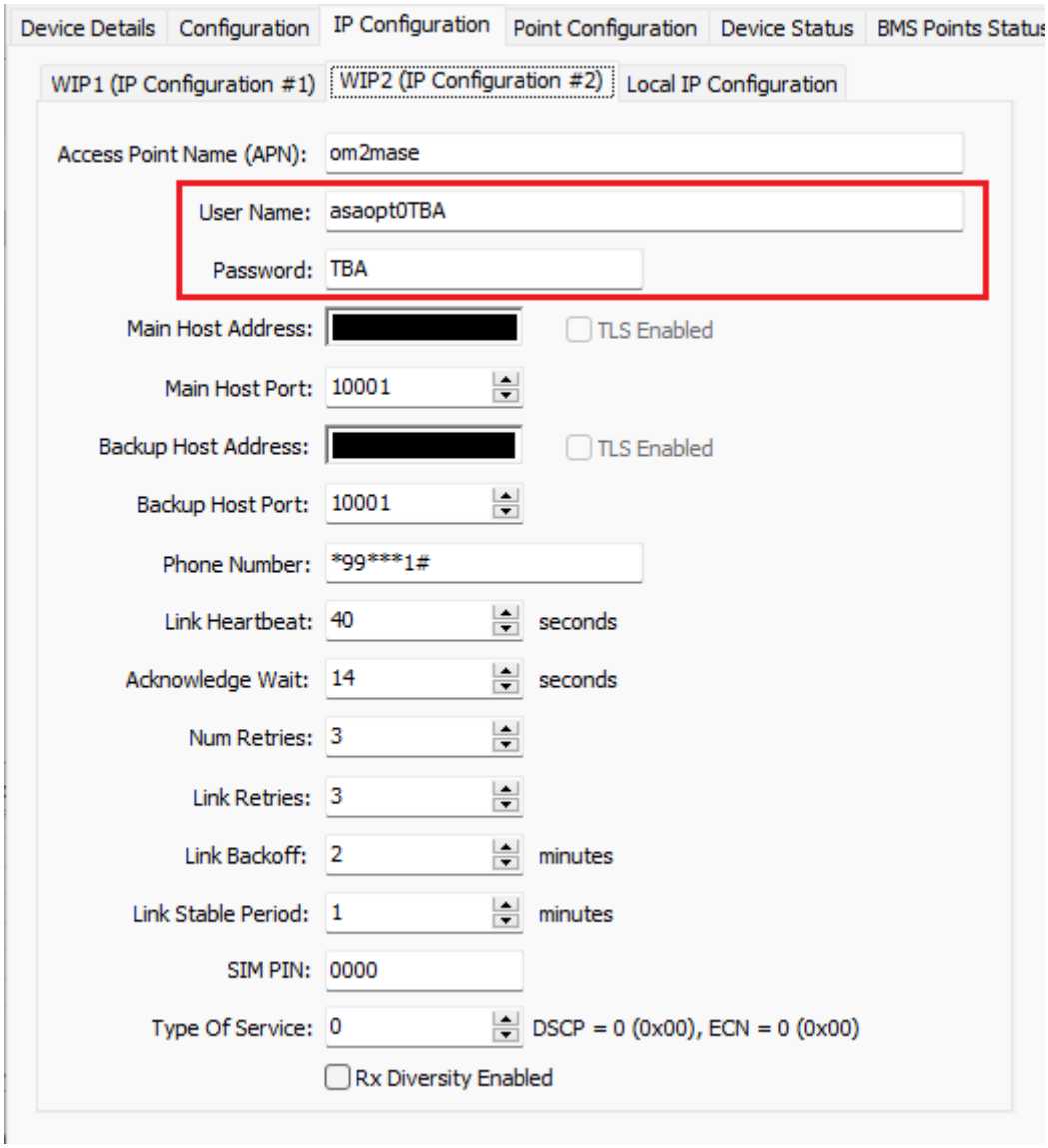
16) Under the "**IP Configuration**" tab, select the "**WIP 2 (IP Configuration #2)**" tab and update the following details (indicated in red in the image below):

a) In the "**User Name:**" field, enter "**asaopt0<USERID>**",
where "**<USERID>**" is the Optus user ID provided by Airservices.

b) In the "**Password:**" field, enter the password provided by Airservices.



Note: For RM3118/9 ASEs, the PIN will be disabled (i.e., 0000)

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17) Click “**Write Configuration**” to write the configuration changes to the ASE.
18) Click “**Save Changes**” to save the configuration in the local ASE Config database.
19) Close the device configuration window.
20) Close the **ASE Config** application.
21) Disconnect the USB connection to the ASE and unplug the **RM3119 Programming Adaptor**.

11.1.4 ASE Testing

This procedure details the steps to test an ASE prior to on-site installation.

1) Ensure the **Up** and **Down** arrows by the **primary** path "**P**" signal meter are alternatively flashing.
2) Ensure the signal strength for the **primary** path "**P**" is either:
   a) Displaying **-109dBm** or greater for **4G** connectivity.

      Or

   b) Displaying **-83dBm** or greater for **3G** connectivity.
3) Ensure the signal strength for the **secondary** path "**S**" is either:
   a) Displaying **-109dBm** or greater for **4G** connectivity.

      Or

   b) Displaying **-83dBm** or greater for **3G** network connectivity.
4) Using the contact simulator:
   a) Open the "**ALARM**" switch and verify "**ALM**" appears on the ASE's LCD screen. Close the "**ALARM**" switch.
   b) Open the "**FAULT**" switch and verify "**FLT**" appears on the ASE's LCD screen. Close the "**FAULT**" switch.
   c) Open the "**ISO/DIS**" switch and verify "**DIS**" appears on the ASE's LCD screen. Close the "**ISO/DIS**" switch.
   d) Open the "**POWER**" switch and verify "**PWR**" appears on the ASE's LCD screen. Close the "**POWER**" switch.
5) Power off and disconnect the ASE.

11.2 RM3119 ASE Installation Checklist

Installer's Name: _____

Mobile Number: _____

ASID Reference: _____ **Device ID:** _____

Building Name: _____

Building Address: _____

Note: *When initially configured, the ASE will communicate with the Airservices test network and hence alarms will* ***not*** *be displayed in the fire station.*

The following checklist is to be completed by the installer:

CHECK ITEM	
Email arffsystemsupport@airservicesaustralia.com to organise a preferred commissioning date and time.	**YES / NO**
If relacing an existing ASE, call the local ARFFS Station and advise them that the ASE will be offline whilst it is being replaced.	**YES / NO / N/A**
The old RM2118 mounting red ASE box has been replaced by the deeper RM3119 mounting box.	**YES / NO / N/A**
Removed the old **Benelec 02458** 3G antenna.	**YES / NO / N/A**
Two **Benelec 024584** antennas installed and correctly mounted, with any penetrations sealed and waterproofed.	**YES / NO**
Telstra is connected to the primary (onboard) modem. Optus is connected to the secondary (offboard) modem.	**YES / NO**
Appropriate lightning surge protection installed, if required.	**YES / NO / NA**
Inputs 1, 2, 3 and 4 connected as prescribed in Section 9.	**YES / NO**
ASE LCD screen shows status of "**Normal**".	**YES / NO**
Record the network connectivity and signal strength for the **primary** "**P**" path, as displayed on the ASE LCD screen.	**4G / 3G**
For **4G** network connectivity, the signal strength must be **-109dBm** or greater. For **3G** network connectivity, the signal strength must be **-83dBm** or greater.	**-** _____ **dBm**
Record the network connectivity and signal strength for the **secondary** "**S**" path, as displayed on the ASE LCD screen.	**4G / 3G**
For **4G** network connectivity, the signal strength must be **-109dBm** or greater. For **3G** network connectivity, the signal strength must be **-83dBm** or greater.	**-** _____ **dBm**
Set the ASE **Low Voltage** value to approximately 10% below the installed FDCIE Power Supply Voltage.	**YES / NO**

Continued on next page.

Measure and record the voltage between the terminals for "**ALM**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Measure and record the voltage between the terminals for "**FLT**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Measure and record the voltage between the terminals for "**ISO/DIS**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Measure and record the voltage between the terminals for "**PWR**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 5** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 6** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 7** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 8** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Activate the **Alarm** on **Input 1**. Confirm ASE LCD screen shows **ALM**. Clear the **Alarm**.	**YES / NO**	
Activate the **System Fault** on **Input 2**. Confirm ASE LCD screen shows **FLT**. Clear the **System Fault**.	**YES / NO**	
Activate the **Zone Isolate** on **Input 3**. Confirm ASE LCD screen shows **DIS**. Clear the **Zone Isolate**.	**YES / NO**	
Activate the **Power Fault** on **Input 4**. Confirm ASE LCD screen shows **PWR**. Clear the **Power Fault**.	**YES / NO**	
Repeat above test with **Input 5**, if connected.	**YES / NO / N/A**	
Repeat above test with **Input 6**, if connected.	**YES / NO / N/A**	
Repeat above test with **Input 7**, if connected.	**YES / NO / N/A**	
Repeat above test with **Input 8**, if connected.	**YES / NO / N/A**	

Continued on next page.

Call Airservices ARFFS System Support. Airservices will then perform the following end-to-end commissioning activities: 1) Move the ASE from the test network to the operational network. 2) Test the primary and secondary communication paths and their signal strengths. 3) Notify the local ARFFS Station that the ASE has been connected and is about to be tested. The Installer will then perform the following end-to-end tests: 1) Activate **Alarm** on **Input 1**. Airservices will confirm that ARFFS have acknowledged the alarm. Clear the Alarm. 2) Activate **System Fault** on **Input 2**. Airservices will confirm that ARFFS have acknowledged the fault. Clear the System Fault. 3) Activate **Isolated / Disconnected** on **Input 3**. Airservices will confirm that ARFFS see the zone isolate. Clear the Isolated / Disconnected. 4) Activate **Power Fault** on **Input 4**. Airservices will confirm that ARFFS have acknowledged the fault. Clear the Power Fault.	
Use the ASE Config application to take a backup of the ASE configuration. Store the backup as per your company's policy.	**YES / NO**
If upgrading from an RM2118, deactivate the old Telstra SIM and POTS line.	**YES / NO / N/A**
If upgrading from an RM3118, send Telstra and Optus SIMs to: ARFFS System Support Airservices Australia Alan Woods Building, 25 Constitution Avenue Canberra ACT 2601 Airservices will de-activate the Telstra and Optus SIMs.	**YES / NO / N/A**

Installer's Signature: _____ **Date:** _____

Comments: _____

_____

_____

Note: Electronic submissions are not required to be signed.

Email this completed form to: arffsystemsupport@airservicesaustralia.com

12 Disconnecting and Reconnecting of an ASE

Should an ASE be disconnected and reconnected for any reason, upon the reconnection the below checklist shall be conducted. If a building remains occupied while this work is carried out, upon completion it is essential that the below checklist testing be completed at the time of reconnection. If the building is not occupied when the work is completed, the below checklist testing shall be completed as soon as practical. Email the signed form to: arffsystemsupport@airservicesaustralia.com.

Installer's Name: _____

Mobile Number: _____

ASID Reference: _____ **Device ID:** _____

Building Name: _____

Building Address: _____

CHECK ITEM		
Put the ASE into **Test** mode. Record time and date: _____	**YES / NO**	
Notify the local ARFFS Station that the ASE has been reconnected.	**YES / NO**	
Confirm the ASE is running normally.	**YES / NO**	
Measure and record the voltage between the terminals for "**ALM**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Measure and record the voltage between the terminals for "**FLT**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Measure and record the voltage between the terminals for "**ISO/DIS**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
Measure and record the voltage between the terminals for "**PWR**" on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 5** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 6** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 7** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**
If applicable, measure and record the voltage between the terminals for **input 8** on the resistor board. The voltage difference must be less than **10mV**. See Appendix D.		**mV**

Continued on next page.

Activate the **Alarm**. Confirm with the local ARFFS Station that they are seeing the **Alarm**. Clear the **Alarm**.	**YES / NO**
Activate the **System Fault**. Confirm with the local ARFFS Station that they are seeing the **System Fault**. Clear the **System Fault**.	**YES / NO**
Activate the **Isolated / Disconnected** status. Confirm with the local ARFFS Station that they are seeing the **Isolated / Disconnected** status. Clear the **Isolated / Disconnected** status.	**YES / NO**
Activate the **Power Fault**. Confirm with the local ARFFS Station that they are seeing the **Power Fault**. Clear the **Power Fault**.	**YES / NO**
Repeat above test with **input 5**, if connected	**YES / NO / N/A**
Repeat above test with **input 6**, if connected	**YES / NO / N/A**
Repeat above test with **input 7**, if connected	**YES / NO / N/A**
Repeat above test with **input 8**, if connected	**YES / NO / N/A**
Put the ASE into **Normal** mode. Record time: _____	**YES / NO**

Installer's Signature: _____ **Date:** _____

Comments: _____

Note: Electronic submissions are not required to be signed.

Email this completed form to: arffsystemsupport@airservicesaustralia.com

13 Replacement ASE

Fire alarm systems are complex in design, and need to be maintained by the customer's reputable fire maintenance company that has expertise in this field. Whenever there is a fault with the fire alarm monitoring equipment, Airservices will notify the customers. The responsibility to rectify any fault / defect resides with the customer as the owner / occupier of the building. The installer/maintainer holds a stockpile of ASEs that are to be used to replace a customer's failed device. The process will depend on the particular failure mode. As a guide the process will typically involve:

1) The two SIMS are to be installed in the new hardware
2) The ASE Maintenance application and A.1.44 procedures are to be used to load the ASE configuration.
3) Section 12 checks shall be conducted and emailed to Airservices.

14 Replacement of a single failed ASE SIM

1) Contact Airservices arffsystemsupport@airservicesaustralia.com to order a replacement SIM.
2) Send faulty SIM to:

   ARFFS System Support, Airservices Australia
   Alan Woods Building
   25 Constitution Avenue
   Canberra ACT 2601

15 Misuse of Airservices SIMs

Airservices performs a monthly audit of SIM usage. If Airservices detects a SIM is being misused, Airservices will:

1) Notify the customer using the normal fault notification process.
2) Deactivate the misused SIM.
3) Send a replacement SIM to the customer.
4) Invoice the customer for the extra SIM charges.

16 ASE Decommissioning

Once an ASE is installed, a building permit from a registered building surveyor must be obtained to disconnect it. To decommission an ASE, a Removal of Service form must be submitted to arfffirealarmmonitoring@airservicesaustralia.com.

The following checklist is to then be completed. Email the signed form to arffsystemsupport@airservicesaustralia.com.

Installer's Name: _____

Mobile Number: _____

ASID Reference: _____ **Device ID:** _____

Building Name: _____

Building Address: _____

The following checklist is to be completed by the Installer:

CHECK ITEM	
Airservices will use Firemon to clear the ASE configuration and provide email confirmation.	**YES / NO**
If it is an **RM3118** or **RM3119**, send Telstra and Optus SIMs to: ARFFS System Support Airservices Australia Alan Woods Building 25 Constitution Avenue Canberra ACT 2601 Note: Airservices will de-activate the Telstra and Optus SIMs. If it is an **RM2118**, previously, the customer paid for the Telstra SIM and POTS line. Deactivate the Telstra SIM and POTS line.	**YES / NO**
The ASE can then be physically removed from the FDCIE.	**YES / NO**

Installer's Signature: _____ **Date:** _____

Comments: _____

Note: Electronic submissions are not required to be signed.

Email this completed form to: arffsystemsupport@airservicesaustralia.com

17 Definitions

Within this document, the following definitions apply:

Term	Definition
ALM (alarm monitoring)	Fire Alarm
ARFFS	Aviation Rescue Fire Fighting Service
ASE	Alarm Signalling Equipment
AWG	American Wire Gauge
COM (relay / switch contacts)	Common
COM (port)	Communications port
DC	Direct Current
FCC	Fire Control Centre
FDCIE	Fire Detection Control and Indicating Equipment
FIP	Fire Indicator Panel Legacy terminology for FDCIE.
FLT (alarm monitoring)	System Fault
FTDI	Future Technology Devices International Limited
GPRS	General Packet Radio Service
HSDPA	High Speed Downlink Packet Access
ISO/DIS (alarm monitoring)	Isolated / Disconnected
LCD	Liquid Crystal Display
N.C.	Normally Closed
N.O.	Normally Open
PC	Personal Computer
POTS	Plain Old Telephone System
PWR (alarm monitoring)	Power Fault
SIM	Subscriber Identification Module
SMA	SubMiniature version A
SPDT	Single Pole Double Throw
SPST	Single Pole Single Throw
USB	Universal Serial Bus
USB-A	USB Type-A plug / port
USB-C	USB Type-C plug / port
WIP	Wireless Internet Protocol

18 References

Title
ROMTECK RM2118 GPRS/HSDPA Alarm Signalling Equipment (ASE) Operation and Installation Manual
ROMTECK RM3118 Alarm Signalling Equipment (ASE) Operation and Installation Manual
Romteck RM3119 ASE Installation Manual
Firemon Fire Alarm Signalling Equipment (ASE) Configuration, Integration and Commissioning
ASE Maintenance Configuration and Diagnostics Software for ASE and FSE Devices

Appendix A How to Backup or Restore RM3119 Dual SIM ASE Configuration

A.1 ASE Config Software

A.1.1 External Customer Technicians

The latest version of ASE Config Software and Romteck RM3119 ASE Installation Manual are ordered via the TI-0223 process

Note: ASE Config Software Version 1.15.0 or higher is required. Airservices recommends only installing the software on Windows 10 or later.

A.1.2 Initial Setup and Licensing

Prior to connecting an ASE for the first time, ensure the PC / laptop is connected to the network, as Windows may need to download and install the appropriate USB-to-Serial FTDI driver. Once the driver is installed, the PC does not need to remain connected to the network.

1. On the PC / laptop, start "**Device Manager**".
2. Use a **USB-C** cable to connect the **RM3119 Programming Adaptor** to your PC / laptop.
3. Wait a few moments for Windows to retrieve and install the device driver.
4. Verify a new com port is listed under "**Device Manager**" **=>** "**Ports (COM & LPT)**" called "**USB Serial Port (COM**X**)**" where "**X**" is the com port number.
   Note that if you connect the **Romteck RM3119 Programming Adaptor** to a different USB port, or another USB to serial adaptor is connected, the assigned COM port number may change.

ASE Config installs in **Express Mode** and requires a license to operate in **Unrestricted Mode**. Use the following procedure to license ASE Config.

1. Launch ASE Config.
2. Navigate to "**Help**" > "**License Manager…**" and select "**Request License**"
3. Save the generated **license request file** "**.lrq**" to the desktop.
4. Email a license request to licenses@romteck.com with the "**.lrq**" file attached.
5. Once Romteck respond with a license, save the attached "**.lic**" to your PC / laptop.
6. Navigate to "**Help**" > "**License Manager…**" and select "**Install License**".
7. Browse to and select the "**.lic**" file, then click "**Open**"
8. On the "**Confirm**" prompt, verify the details are correct, then click "**Yes**"

ASE Config must be pointed to the correct com port. Use the following procedure to set the com port number ASE Config will use.

1. Navigate to "**Setup**" > "**System Settings…**"
   If you receive a "**Com Port is not available**" error, click "**OK**"
2. Select the "**Communication Settings**" tab
3. In the "**Com Port:**" dropdown, select the port associated with the **Romteck RM3119 Programming Adaptor** connected to your PC / laptop, then click "**OK**"

A.1.3 Saving an ASE's Configuration

1. Use a **USB-C** cable to connect the **RM3119 Programming Adaptor** to your PC / laptop.
2. Insert the **Romteck RM3119 Programming Adaptor** into connector "**P6**" on the ASE.
3. Start the **ASE Config** application.
4. Select "**File**" **>** "**Add Device…**".
5. Select "**Type 53: RM3119-WIP-WIP-ASE-F**" and click "**OK**".
   This will create and highlight a new device in the list.
6. Right-click the newly created device and select "**Connect**"
   If an "**Address Mismatch** …" prompt displays, click "**OK**"
7. On the bottom left of the device window, confirm you see
   "**Comms State: COMMS OK:** …".
8. On the top right of the device window, click "**Read Configuration**"
   You will be prompted to confirm. Click "**Yes**".
9. Verify you receive a "**Read configuration command completed successfully**" prompt.
   Click "**OK**"
10. Click the "**Configuration**" tab.
11. The "**LCD Title:**" field will contain "**DEVICE ###**",
    where "###" is the **Firemon Device Number**. Copy this number.
12. Click the "**Device Details**" tab.
13. Update the "**Firemon Device No**" field with the number you copied in **Step 12**.
14. Update the "**Building**" field with the **Firemon Device Number**, building name and address.
    Important: The **Firemon Device Number** is added to the "**Building**" field as the ASE Config application currently does not allow the "**Firemon Device No**" field to be included in the filenames of exported devices.
    Additionally, ensure the text in the "**Building**" field does not match any other devices' "**Building**" field in the ASE Config application. For instance, if you have multiple backups of the same device, add a date code to the field.
15. On the bottom right of the device window, click "**Save Changes**"
16. Close the device window.
17. Remove the **Romteck RM3119 Programming Adaptor** from connector "**P6**" on the ASE.

Continued on next page.

18. Select “**File**” **>** “**Export All Devices…**”.
    Important: Do not use “**File**” **>** “**Export Device**” as it does not include sufficient meta data in the file name.
19. On the “**Export All Devices**” dialogue, click “**Define fields…**”
20. On the fields selection prompt, do the following:
    a. Click “**<<**”
    b. Select “**Building (Prompt 1)**” and click “**>**”.
    c. Select “**Device Address (Conc_Module_Line_Drop)**” and click “**>**”.
    d. Verify “**Fields in file name**” lists only the following in order:
    Building (Prompt 1)
    Device Address (Conc_Module_Line_Drop)
    e. Click “**OK**”
21. Ensure the “**Export Directory**” field is set to “**C:\ProgramData\Romteck\ASEConfig\Export**”.
    Alternatively, select another suitable location to store the exported data.
22. Click “**OK**” and wait for the export to complete.
23. Verify you receive a “**Successfully exported all device data to:**” prompt.
    Click “**OK**”.
24. Navigate to “**C:\ProgramData\Romteck\ASEConfig\Export**”, or the alternative location you selected for the export in **Step 21**.
25. Copy or archive the zip file as per your company’s policy.
26. If this backup is for an Airservices internal device, e-mail the zip file to arffsystemsupport@airservicesaustralia.com

A.1.4 Restoring an ASE's Configuration

Warning: **BEFORE** you proceed, ensure the Telstra and Optus micro-SIMs are **NOT** installed.

1. Use a **USB-C** cable to connect the **RM3119 Programming Adaptor** to your PC / laptop.
2. Insert the **Romteck RM3119 Programming Adaptor** into connector "**P6**" on the ASE.
3. Power on the ASE.
4. Start the **ASE Config** application.
5. Select "**File**" **>** "**Import Device(s)…**"
6. Navigate to the location of the device to import and select the zip file, then click "**Open**"
7. Confirm you receive an "**Import Successful** …" prompt. Click "**OK**"
   The imported device will be highlighted in the list.
   Alternatively, sort by the "**Device No**" column and select the last device.
8. Right-click on the imported device and select "**Connect**"
   If an "**Address Mismatch** …" prompt displays, click "**OK**"
9. On the bottom left of the device window, confirm you see "**Comms State: COMMS OK:** …".
10. On the top right of the device window, click "**Write Configuration**"
11. Verify you receive a "**Write Configuration command completed successfully**" prompt.
    Click "**OK**"
12. Close the device window.
13. Remove the **Romteck RM3119 Programming Adaptor** from connector "**P6**" on the ASE.
14. Power off the ASE.
15. Install the **Telstra** micro-SIM into the **on**board modem's micro-SIM socket.
16. Install the **Optus** micro-SIM into the **off**board modem's micro-SIM socket.

Warning: Do **NOT** power on the ASE until it has been installed and wired into the FDCIE. The ASE will communicate back to the local ARFFS station once powered on.

Appendix B ARFFS Contact details

ARFFS Station	FCC Contact Number
ADELAIDE	(08) 8154 4010
ALICE SPRINGS	(08) 8958 4710
AVALON	(03) 5282 7010
AYERS ROCK	(08) 8956 1910
BALLINA	(02) 6618 7710
BRISBANE	(07) 3860 3210
BROOME	(08) 9194 3310
CAIRNS	(07) 4042 4910
CANBERRA	(02) 6243 2110
COFFS HARBOUR	(02) 6691 7610
COOLANGATTA	(07) 5590 2710
DARWIN	(08) 8920 4810
GLADSTONE	(07) 4973 5410
HAMILTON ISLAND	(07) 4948 5610
HOBART	(03) 6248 3410
KARRATHA	(08) 9183 6210
LAUNCESTON	(03) 6391 6810
MACKAY	(07) 4968 3010
MELBOURNE	(03) 9286 3110
NEWMAN	(08) 9130 7110
PERTH	(08) 9373 9210
PORT HEDLAND	(08) 9158 5910
ROCKHAMPTON	(07) 4930 7410
SUNSHINE COAST	(07) 5458 2910
SYDNEY	(02) 9556 5510
TOWNSVILLE	(07) 4759 1810

Appendix C Notification Form 204 Explanations & ASE Status Screen

Refer to **Section 3.7** “**Viewing The LCD**” in the **Romteck RM3119 ASE Installation Manual**.

Appendix D Notification Form 204 High Number of FDCIE Faults

If a high number of FDCIE faults are being reported, do the following:

1) Check if the FDCIE is generating the faults, and take corrective action on the FDCIE if necessary.
2) Inspect the wiring between the FDCIE, resistor board and ASE. Check for signs of moisture, corrosion, or other damage. Check for loose or incorrect terminations. Replace, re-terminate, and properly secure the wiring as necessary.
3) With the ASE connected to the FDCIE and powered on, use a multimeter to measure and record the voltage difference between each pair of input terminals on the resistor board. Perform the measurements while each associated FDCIE relay contacts are in the Normally Closed position.
   If the voltage difference on a pair of input terminals is greater than 10mV, clean the relay contacts or install a replacement relay if necessary.