Firemon Alarm Signalling Equipment (ASE) Installation Checklist

Technical Instruction

TI-0157

Version 16

Effective 04 November 2019

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Change summary

Version	Date	Change description
16	04 November 2019	Appendix added for troubleshooting for high number of nuisance FIP faults. Added step to check FIP relay resistance.
15	05 May 2019	Electronic submissions are not required to be signed

This document was created using Technical Instruction Template C-TEMP0168 Version 5.

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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) prior to its commissioning into the Fire Alarm Monitoring System.

2 Background

The National Broadband Network (NBN) is replacing most existing landline phone and internet networks across Australia. As the NBN becomes available, the copper network is being switched off and no longer accessible. The NBN roll-out will directly affect how Airservices monitors fire alarms. A new generation Alarm Signalling Equipment (ASE) device called the Romteck RM3118 will be rolled out to replace the RM2118 unit currently installed in buildings. The RM3118 has dual SIMs, which the RM3118 will utilise to access the new dual communications paths of the alarm monitoring network. The network is run as two virtual private networks utilising Telstra and Optus. The RM3118 ASE has the capability of connecting to both networks via two SIM cards. Airservices will supply these SIMs for the RM3118 ASEs.

The new RM3118 is compatible with 3G/4G. It is predicted that the first 3G/4G units will begin to appear in premises from Q2 2019. Every RM2118 ASEs across the fleet should be replaced with the RM3118 3G/4G. Priority will be given to current NBN sites and established premises connecting for the first time. The rollout should take approximately 18 months, finishing in 2020.

The existing 3G (only) RM3118 Lisa ASEs will remain until either their failure or when 3G is decommissioned at some point in the future, at which stage they will need to be replaced with the 3G/4G model.

The old RM2118 ASE will continue to use PSTN and Telstra SIM (with Telstra Shared APN with implementation code GPCORPB3, call 13 22 00 to confirm) supplied by the customer. Please note it is the owner of the RM2118 Telstra services (Mobile Broadband and PSTN), has the responsibility to pay for and maintain these services. Failure to do so may result in their facility being unmonitored.

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.

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 alternative fire safety protection in place 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 upgrading from a RM2118 to a RM3118, 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. Section 16 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 17 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 (internal link MAN-709)
4. ASE RM3118 Alarm Signalling Equipment (ASE) Operation and Installation Manual, Revision 0.4 or greater (internal link RM3118)
5. RM2118 GPRS/HSDPA Alarm Signalling Equipment (ASE) Operation and Installation Manual, Revision 0.8 or greater (internal link MAN-639)

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 FIP checks.
5. Maintain after hours or emergency contact numbers for the building. When a fault is detected in an ASE or FIP 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 RM3118 or upgrading from a RM2118 to a RM3118.
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 FIP 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 FIP 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 a 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 it will be required to be refreshed and the assessment retaken. Airservices Certified Maintainer or ASE key-holder request form is available via the following link TI-0223.

7 Hardware configuration

7.1 RM3118 3G/4G 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	1 x ASE MK III - RM3118-WIP-WIP-ASE-F No box engraving, Touch Key, Telit 4G modem configured to accept keys from ALL key issuers
2	2	2 x PID 27389 Benelec 024584 RF Antenna MultiBand 3G/4G Dipole 3dB 3m
2	2	2 x PID 9988 Benelec 02729 RF Bracket Patch Cellular
1	1	1 x ASE-EOLRB End Of Line Resistor Board with Fixed screw terminals.
2	2	Airservices will supply the Telstra and Optus SIMs for the RM3118 ASEs.

*Note: The old RM2118 single 3G antenna can **NOT** be re-used as its bandwidth does not cover the Telstra and Optus 4G frequencies.*

Note: If there is poor mobile phone signal on site a 3 or 5 meter coaxial cable may be required.

7.1.1 Touch Keys

The RM3118 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 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.

7.2 RM3118 Lisa (legacy Q1-2018 to Q2-2019) Hardware configuration

Airservices previous standard configuration included the following hardware:

New RM3118 installations	*RM2118 upgrade*	*Equipment*
1	1	RM3118-WIP-WIP-ASE-F-0-TK-**LISA** ASE MK III - RM3118-WIP-WIP-ASE-F, Touch Key **3G** modem configured to accept keys from ALL key issuers
2	1	PID 27389 Benelec 024584 RF Antenna MultiBand 3G/4G Dipole 3dB 3m
N/A	1	PID 9987 NextG/3G Quad Band 3dBi antenna
2	2	PID 9988 Benelec 02729 RF Bracket Patch Cellular
1	1	ASE-EOLRB End Of Line Resistor Board with Fixed screw terminals.
2	2	Airservices supplied the Telstra and Optus SIMs for the RM3118 ASEs.

Note: At the time the old RM2118 single 3G antenna was re-used for the RM3118 Lisa installation as its bandwidth covers the 3G Telstra and Optus bands. A new 3G/4G antenna was installed for the second path.

To upgrade to a new RM3118 **Telit** ASE the legacy 3G antenna must also be upgraded to a 3G/4G antenna.

7.3 RM2118 (legacy 2012 to Q1-2018) Hardware configuration

Airservices previous standard configuration included the following hardware:

RM2118	*Equipment*
1	HSDPA-PSTN-ASE-F-S - Romteck RM2118 - Alarm Signalling Equipment (ASE) unit
1	PID 9987 Benelec 02458 NextG/3G Quad Band 3dBi antenna including 3m cable and mounting bracket
1	PID 9988 Benelec 02729 RF Bracket Patch Cellular
1	ASE-EOLRB End Of Line Resistor Board with Fixed screw terminals

Note: Telstra SIM (with Telstra Shared APN with implementation code GPCORPB3) was supplied by and paid for by the customer.

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 FIP-ASE interfacing

The ASE shall be connected to the Fire Indicator Panel (FIP) relay contacts via an End-of-Line Resistor Board (EOLRB) for Alarm, Fault and Isolate as recommended by Romteck, as shown in Figure 1 below.

The FIP Alarm and FIP Fault relay contacts shall be wired into the PRI and SEC terminals respectively on INPUT 1 (connector P2). The ISO terminals on INPUT 1 shall be bridged out. i.e.:

INPUT 1: (PRI) FIP Alarm
INPUT 1: (SEC) FIP Fault
INPUT 1: (ISO) Bridged

The FIP Zone Isolate relay contact shall be wired into the ISO terminals of INPUT 2 (connector P3). The PRI and SEC terminals on INPUT 2 shall be bridged out. i.e.:

INPUT 2: (PRI) Bridged
INPUT 2: (SEC) Bridged
INPUT 2: (ISO) FIP Zone Isolate

Any additional relay contacts shall be wired into the PRI terminals on INPUT 3 (connector P4) and INPUT 4 (connector P5). The SEC and ISO terminals shall be bridged out. i.e.:

INPUT 3: (PRI) Additional Input (e.g. SPKL)
INPUT 3: (SEC) Bridged
INPUT 3: (ISO) Bridged
INPUT 4: (PRI) Additional Input (e.g. SPKL)
INPUT 4: (SEC) Bridged
INPUT 4: (ISO) Bridged

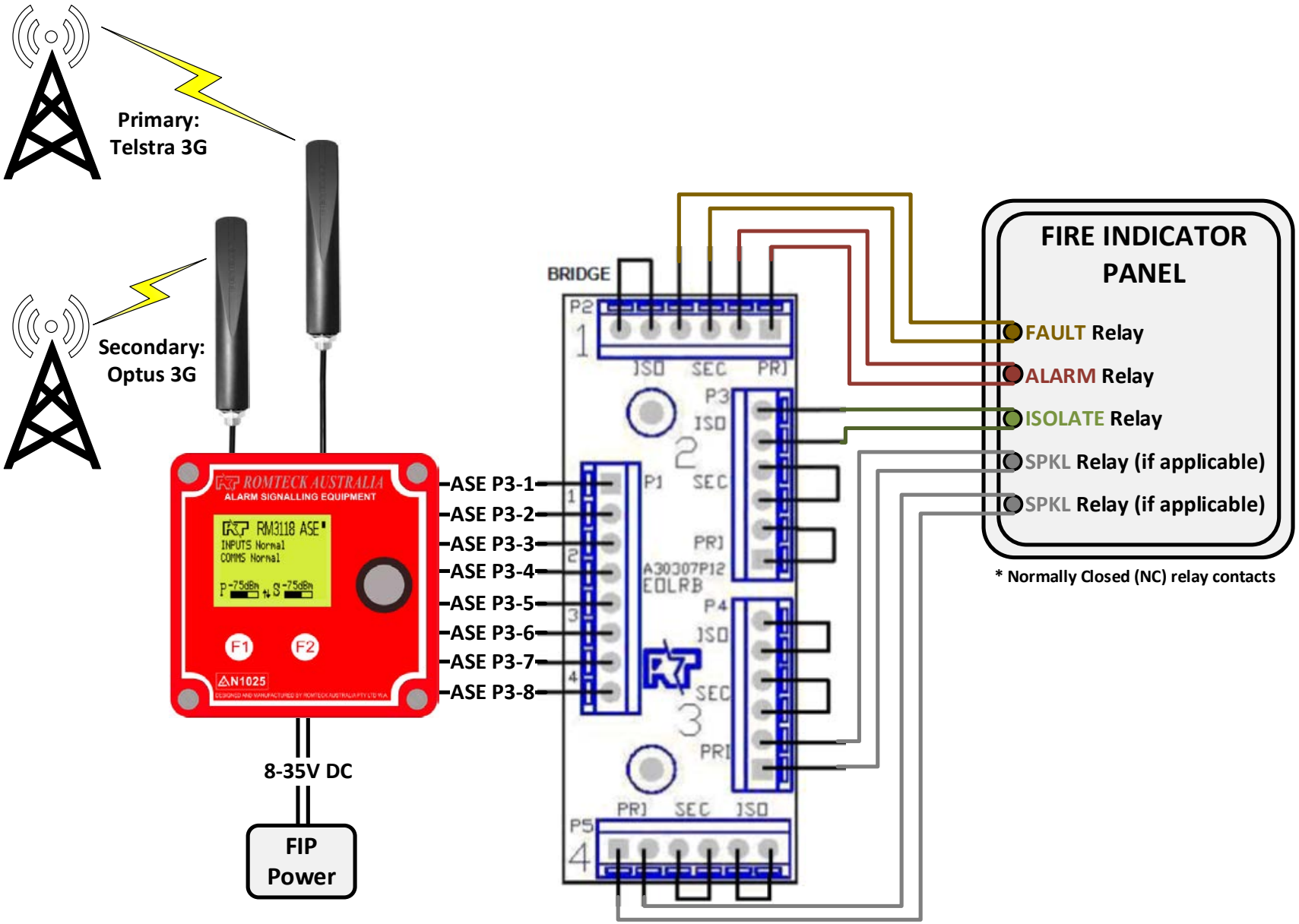


Figure 1 – FIP to ASE Wiring Diagram

9.2 ASE-Communications Network interfacing

The ASE acquires the alarm signals from the Fire Indicator Panel (FIP) and transmits these to the Airservices Firemon system using two communications paths. The primary path is Telstra 3G/4G and the secondary path is Optus 3G/4G. Refer to Figure 1.

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

10 Recommended antenna installation

The two antennas must be installed as per RM3118 ALARM SIGNALLING EQUIPMENT (ASE) OPERATION AND INSTALLATION MANUAL:

- Antennas are not to be installed in a location readily accessible to the public.
- Antennas must be mounted in a safe location.
- Antennas must not be placed where it can cause interference with the FIP or associated equipment, nor where it can cause harm to operators.
- Antennas must be separated by at least 2m horizontally or 1m vertically.
- Mount the antenna upright on a Benelec 02729 bracket.
- It is crucial to mount the antenna vertically and the installer should use ASE LCD Screen to ensure a signal of -83dBm or greater is obtained.

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 meter coaxial cable can be provided by Romteck Australia on request.

11 New RM3118 dual SIM ASE installation checklist

The following checklist is to be used when installing a new ASE or upgrading from a RM2118 to a RM3118 dual SIM Telit 3G/4G ASE.

It must be completed by the installer.

If installing a new RM3118 dual SIM Telit 3G/4G ASE:

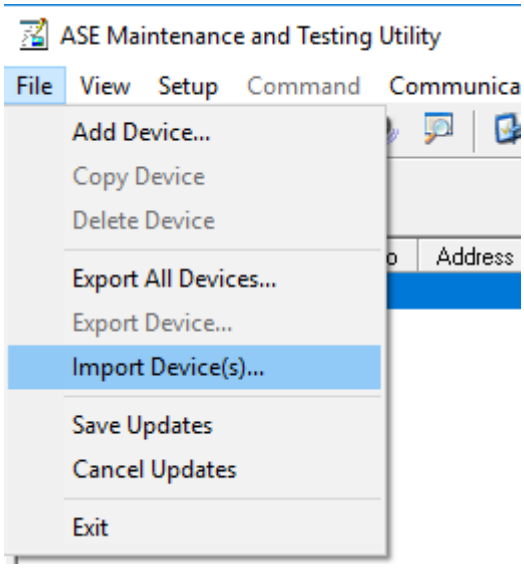
- A Fire Alarm Monitoring Service Form must have already been submitted and **accepted** by arfffirealarmmonitoring@airservicesaustralia.com.
- Order equipment as per section 7.
- Airservices will express post the following to the nominated Airservices Certified Maintainer:
    - Telstra and Optus SIMs
    - 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 for ASEs connected to the Airservices system
    - Site
    - Device Number
    - Device Name
    - Telstra Username, password and SIM International Mobile Equipment Identity(IMEI) number
    - Optus Username, password and SIM IMEI
    - Concentrator, Module, Line and Drop
- Section 11.1 checklist shall be used to configure the ASE to connect to the Firemon test system on both the Telstra and Optus paths. 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 ASE 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.

Note: *If signal strength is less then -83dBm once the ASE has been installed onsite, the ASE will not be commissioned.*

11.1 ASE Configuration using ASE Maintenance

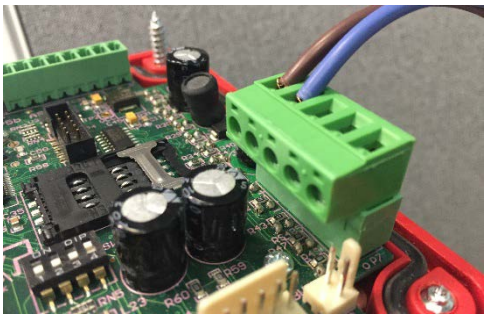
11.1.1 Import Baseline Configuration into ASE Maintenance

1) Start ASE Maintenance
2) Select **Setup > System Settings** and set the Data Directory to a desired location
3) Select **File > Import Device** and **select** file ASA_baseline_1002.zip. Press OK at import successful prompt.

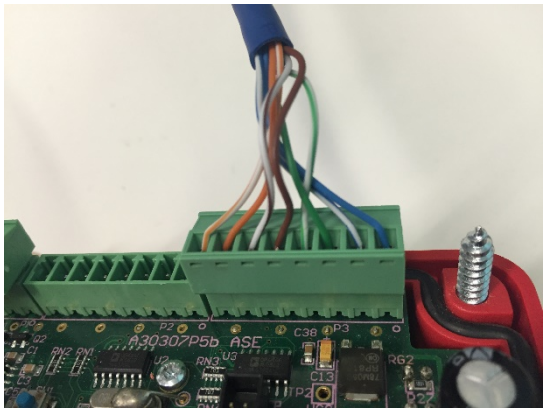


11.1.2 ASE Setup

1) Power off the ASE
   a) Install the Telstra SIM in the on-board SIM slot
   b) Install the Optus SIM in the modem module connected to the mounting box.
2) Use a label maker to label the following on the ASE:
   a) Device Number
   b) Input 1 – Alarm/Fault
   c) Input 2 – Isolate
3) Connect the following equipment:
   a) Connect the 2 Antennas to the ASE via the SMA connector.
   b) Connect the USB cable to the ASE.
   c) Connect the power supply leads of the 12V DC power supply using the provided 5-way PCB Connector-Plug onto pins 4 (-ve) and 5 (+ve) of connector “P7” (see photo below) making sure the polarity is correct.

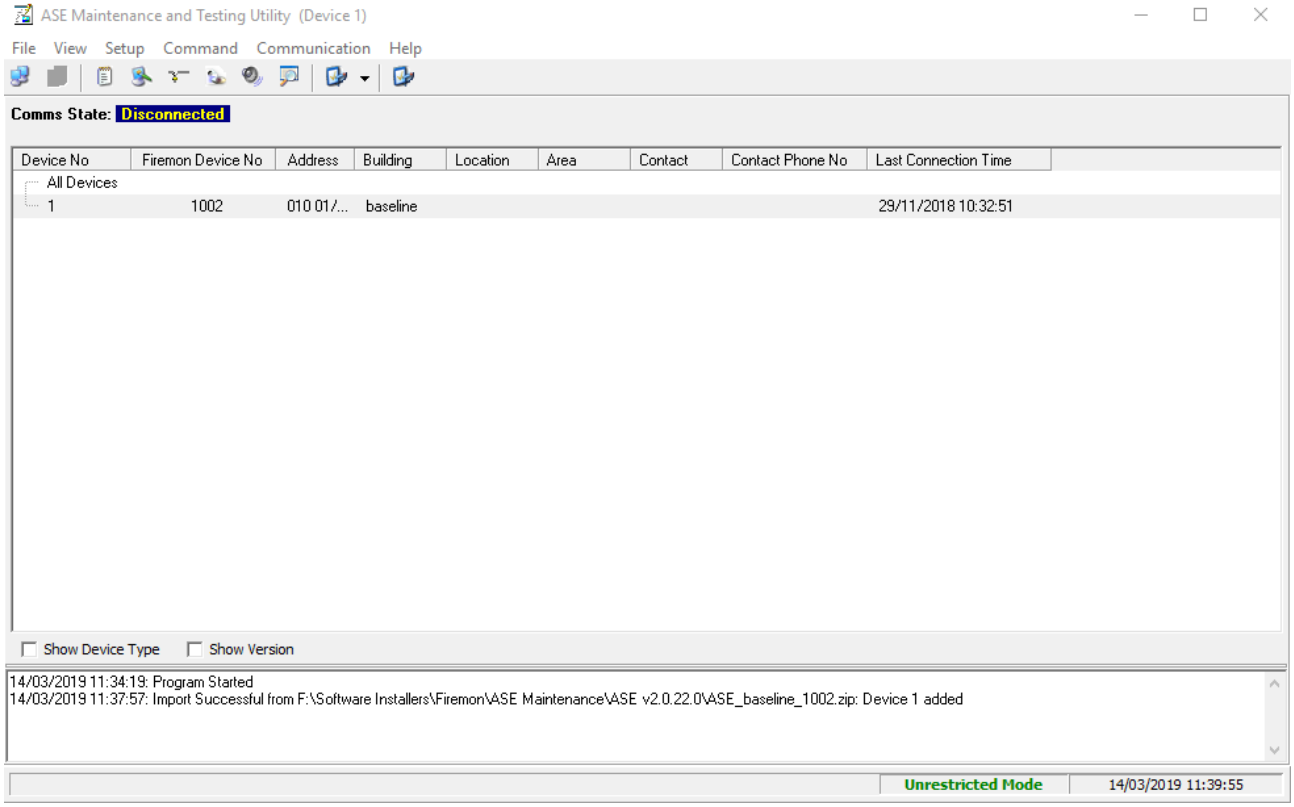


d) Connect the T&E physical alarm input simulator – An EOLRB is wired to 3 test switches (ALARM, FAULT and ZONE ISOLATE) as per Section 5. Attach the physical alarm simulator and EOLRB to connector “P3” on the ASE motherboard (see photo below).

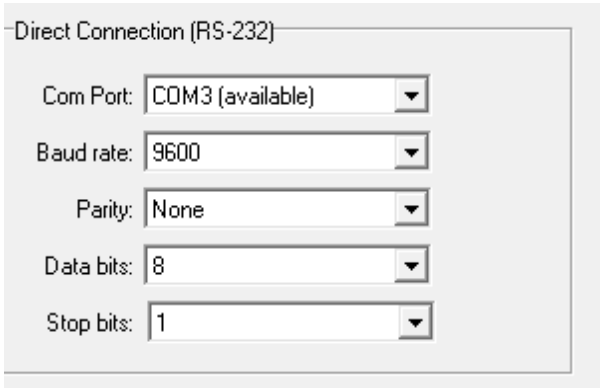


4) Power on the ASE.

5) Start ASE Maintenance



6) Go to **Setup > System Settings > Communication Settings** tab. Ensure its set up as:



Note: the Com Port may vary, but it should say (available).

7) Sort by **Firemon Device No** by clicking on the column header.

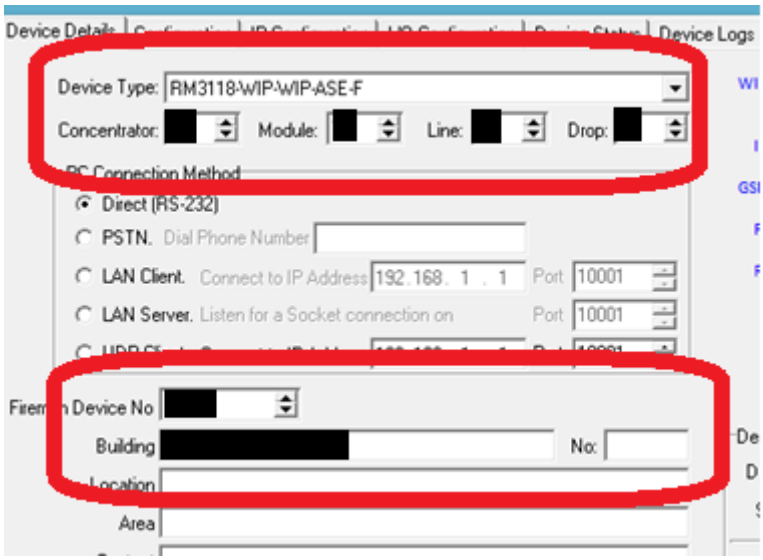
8) Scroll to Firemon Device **1002**, which is a blank ASE with the standard configuration.
Note: it will be configured to talk to the TEST system

9) Right-click on **Device 1002** and select **Copy device**. The new record will be highlighted after the copy command.

10) Right-click on the new device and select **Connect**. If an information box pops up, click **OK**.

11) The next steps involve updating the various details for this specific ASE. Use the information provided by Airservices.

12) Update the following details on the **Device Details** tab (circled red in the image below):
   a) Concentrator
   b) Module
   c) Line
   d) Drop
   e) Firemon Device No
   f) For the **Building** name, use the naming convention: **XX-Building Name** where: **XX** is the region and **Building Name** is the name of the building.

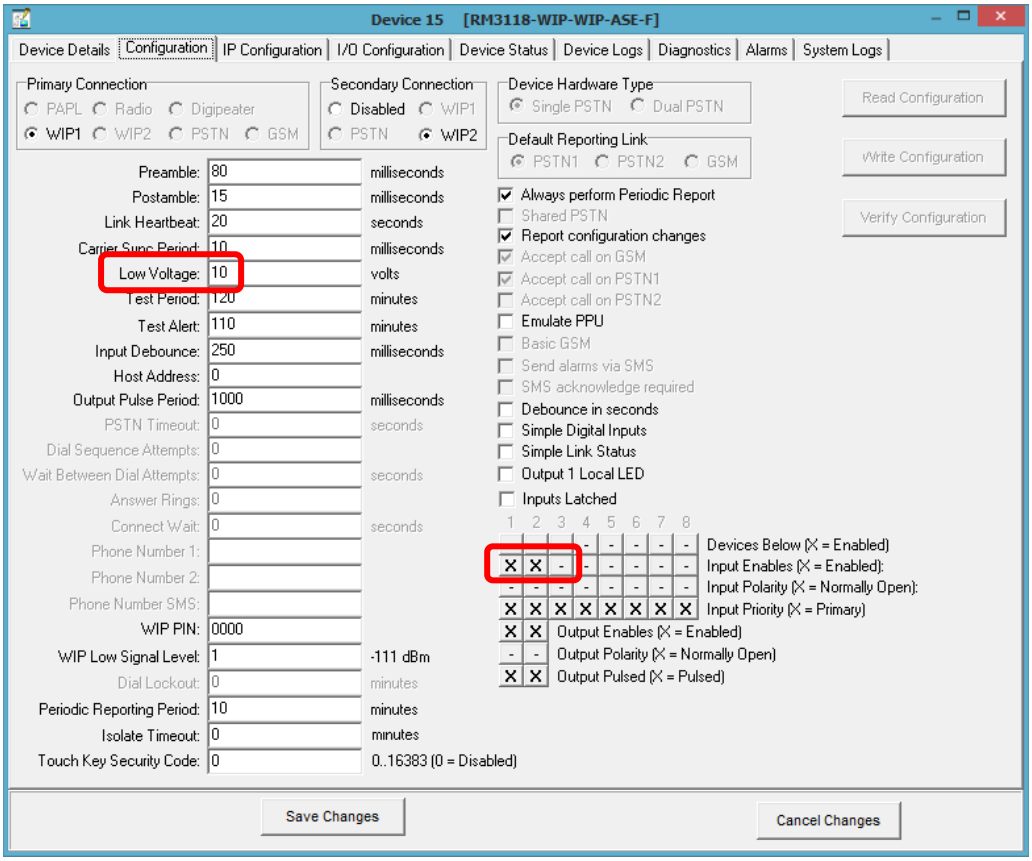


13) Update the following details on the **Configuration** tab (circled red in the image below):

a) **New ASE:** The standard input configuration is ALARM and FAULT on Input 1 and ZONE ISOLATE on Input 2. If more than 2 inputs will be wired to the device (e.g. Input 3 SPKL), add additional inputs by clicking on bottom right, so that the icon changes from [-] to [X].

ASE Upgrade: Activate the correct number of inputs. Activate at least the first two inputs as per the standard

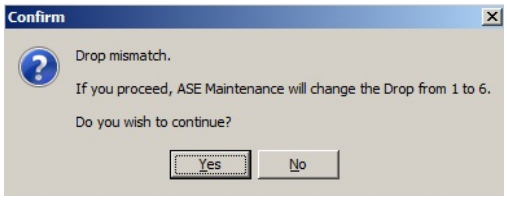
b) Set the **Low Voltage** value to approximately 10% below the installed ASE Power Supply Voltage.



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

14) Click **Write Configuration** to write the database configuration changes to the ASE.

15) Click **Yes** when the Confirm box appears

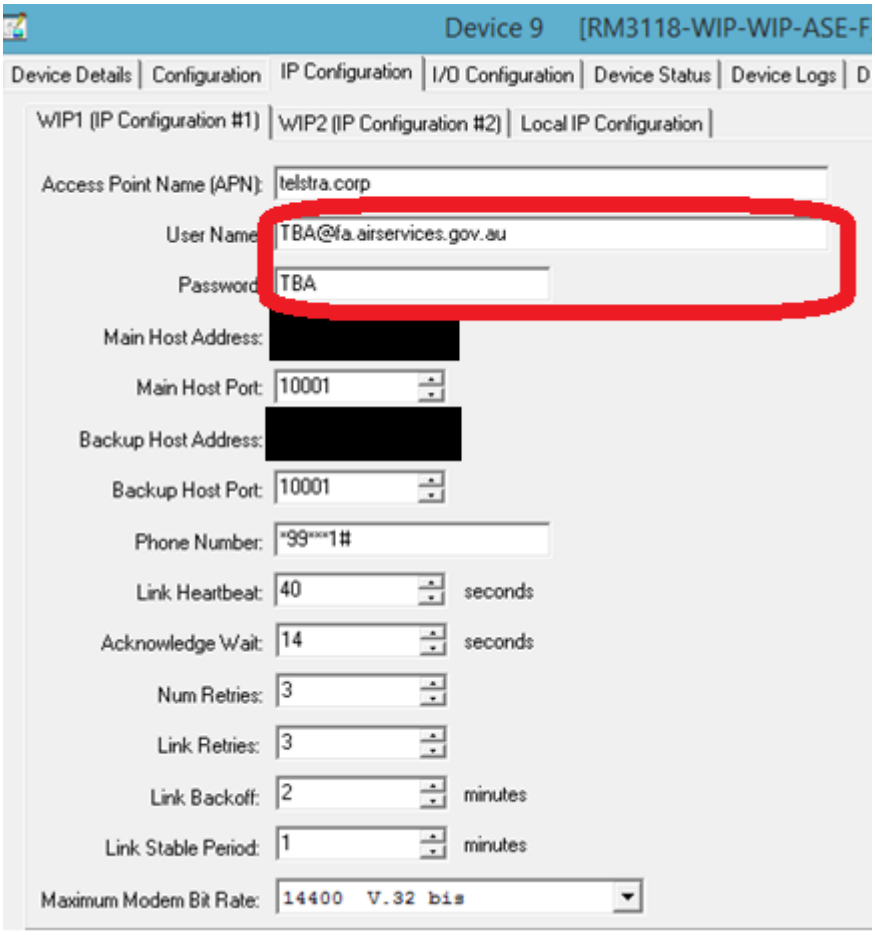


16) Select the **IP Configuration > WIP1 (IP Configuration #1)** tab.

17) Update the following details on the **WIP1 (IP Configuration #1)** tab (circled red in the image below) using the allocated username and password for that specific CMLD:

   a) User Name (format: XXXXX@fa.airservices.gov.au)

   b) Password (format: XXXXXX)



18) Click **Write IP Configuration** to ASE to write the database configuration changes to the ASE.

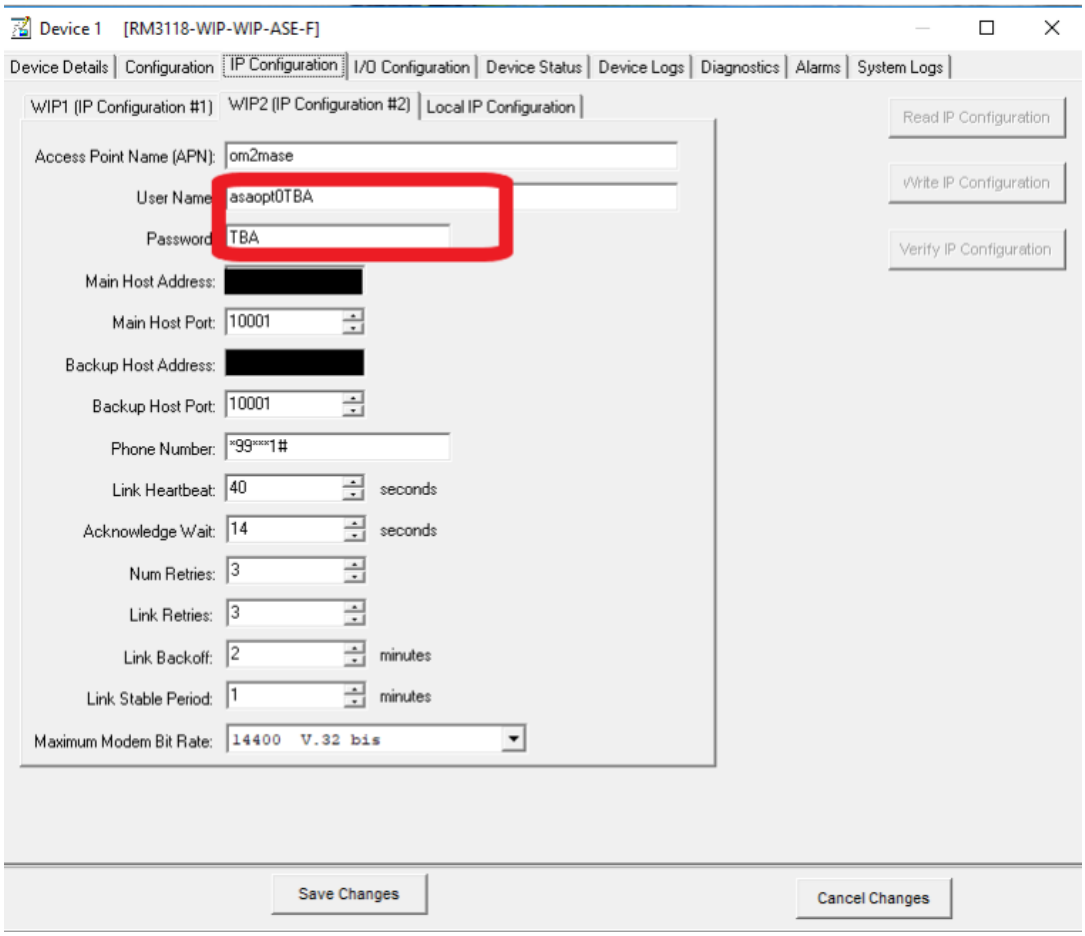
19) Click the **Save Changes** button.

20) Select the **IP Configuration > WIP2 (IP Configuration #2)** tab.

21) Update the following details on the **WIP2 (IP Configuration #2)** tab (circled red in the image below) using the allocated username and password for that specific CMLD:

   a) User Name (format: asaoptXXXX)

   b) Password (format: XXXXXX)

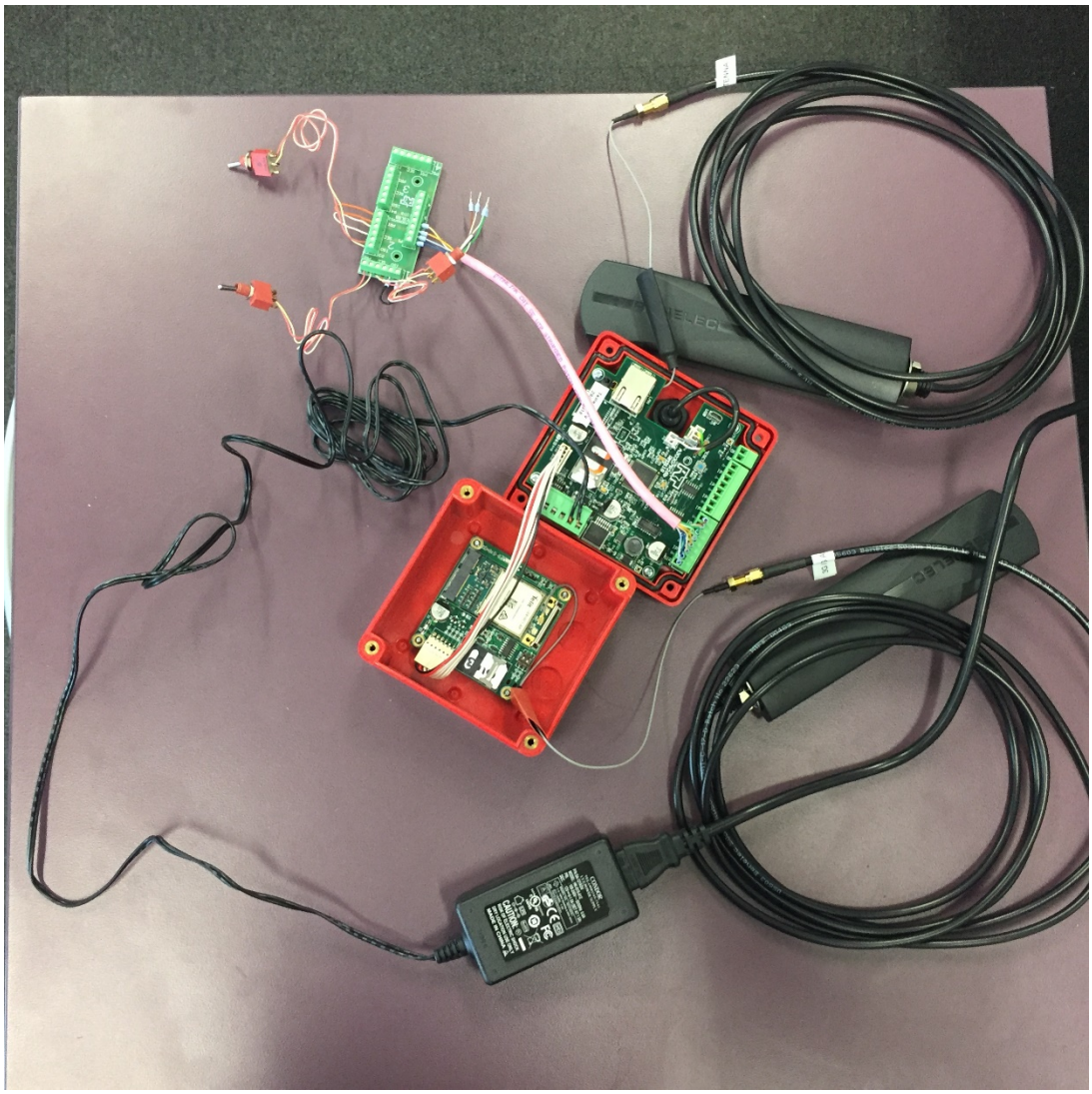


22) Click **Write IP Configuration** to ASE to write the database configuration changes to the ASE.
23) Close the Device Configuration tool.
24) Close the ASE Maintenance application.
25) Disconnect the USB connection to the ASE.

11.1.3 ASE Testing

On the ASE:

1) Ensure the **Up** and **Down** arrows next to the **P** are alternatively flashing.
2) Ensure signal strength on both the **P** and **S** paths are **-83dBm** or greater
   a) Record result P: _____dBm
   b) Record result S: _____dBm
3) Using the alarm input simulator, simulate:
   a) **Open Circuit PRI** Input 1 - Verify the **ALARM Z1** is visible on ASE.
   b) **Open Circuit SEC** Input 1 Verify the **Fault Z1 is** visible on ASE.
   c) **Open Circuit ISO** on Input 2 Verify the **Isolate Z2** are visible on ASE.



4) Use a Touch Key to put the device into **Isolate** mode.
5) Power off the ASE.

11.2 RM3118 dual SIM ASE installation checklist

Installer's Name: _____

Mobile Number: _____

ASID Reference: _____

Device Number: _____

Building Name/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**
Advise if installing a **RM3118 Lisa (3G)** or a **RM3118 Telit (3G/4G)** ASE	**3G Only** **3G / 4G**
If upgrading from a RM2118 to a RM3118, 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 RM3118 mounting box	**YES / NO / N/A**
Removed the old **Benelec 02458** 3G antenna.	**YES / NO**
Two new **Benelec 024584** 3G/4G antennas installed correctly mounted and any penetrations sealed and waterproofed. Telstra is connected to the on-board modem. Optus is connected to the auxiliary circuit board.	**YES / NO**
Appropriate lightning surge protection installed, if required.	**YES / NO / NA**
End Of Line Resistor Board inputs 1 and 2 connected as prescribed in Section 9.	**YES / NO**
End Of Line Resistor Board inputs 3 and 4 connected as prescribed in Section 9, if required.	**YES / NO / N/A**
ASE LCD screen shows COMMS STATUS of Normal.	**YES / NO**
ASE LCD screen shows P & S Signal Strength of -83dBm or greater. Note: Allow 10 minutes for signal strengths to stabilise. If this ASEs signal strength is below -83dBm when the ASE is first installed, and efforts to increase signal strength fail, please call to discuss as the -83dBm rule may need to be adjusted for 4G ASEs.	**P:** _____ **S:** _____
Check the voltage between ISO (screw 1&2), SEC (screw 3&4), PRI (screw 5&6) terminals for each enabled input on the EOLRB when no alarm fault or isolate are active. If they are greater than 30mV when Normally Closed, check if any wiring between the FIP, EOLRB and ASE are loose or incorrectly connected. Consider replacing the FIP relay. Refer to Appendix D for further information.	**Voltage:** **Input 1** / **Input 2** **PRI:** ____ / ____ **SEC:** ____ / ____ **ISO:** ____ / ____
Using ASE Maintenance application, set the **Low Voltage** value to approximately 10% below the installed ASE Power Supply Voltage.	**YES / NO**

Activate the **Alarm** on **Input 1**. Confirm ASE LCD screen shows **Alarm**. Clear the **Alarm**.	**YES / NO**
Activate the **Fault** on **Input 1**. Confirm ASE LCD screen shows **Fault**. Clear the **Fault**.	**YES / NO**
Activate the **Zone Isolate** on **Input 2**. Confirm ASE LCD screen shows **Zone Isolate**. Clear the **Zone Isolate**.	**YES / NO**
Repeat above test with **Input 3**, if connected	**YES / NO / N/A**
Repeat above test with **Input 4**, if connected	**YES / NO / N/A**
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 **Isolate** mode.	**YES / NO**
Note: Electronic submissions are not required to be signed. **Installer Signature:** _____ **Date:** ____/____/____ Comments: _____	
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 the **Alarm** on **Input 1**. Airservices will confirm that ARFFS have acknowledged the alarm. Clear the Alarm. 2) Activate the **Fault** on **Input 1**. Airservices will confirm that ARFFS have acknowledged the fault. Clear the Fault. 3) Activate the **Zone Isolate** on **Input 2**. Airservices will confirm that ARFFS see the zone isolate. Clear the Zone Isolate.	
Use the ASE Maintenance application to take a backup of the ASE configuration. Store the backup as per your company's policy.	**YES / NO**
Previously, the customer paid for the Telstra SIM and POTS line. If upgrading to a new RM3118, deactivate the Telstra SIM and POTS line.	**YES / NO**

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 'As Installation Checklist' shall be conducted. If a building remains occupied while this work is carried out, upon completion it is essential that the 'As Installation Checklist' testing be completed at the time of reconnection. If the building is not occupied when the work is completed, the 'As Installation 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 Number: _____

Building Name/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**
Activate the **Alarm** on **Input 1**. Confirm with the local ARFFS Station that they are seeing the alarm. Clear the Alarm.	**YES / NO**
Activate the **Fault** on **Input 1**. Confirm with the local ARFFS Station that they are seeing the fault. Clear the Fault.	**YES / NO**
Activate the **Zone Isolate** on **Input 2**. Confirm with the local ARFFS Station that they are seeing the zone isolate. Clear the Zone Isolate.	**YES / NO**
Check the voltage between ISO (screw 1&2), SEC (screw 3&4) PRI (screw 5&6) terminals for each enabled input on the EOLRB when no alarm fault or isolate are active. If they are greater than 30mV when Normally Closed, check if any wiring between the FIP, EOLRB and ASE are loose or incorrectly connected. Consider replacing the FIP relay. Refer to Appendix D for further information.	**Voltage:** **Input 1** / **Input 2** **PRI:** _____ / _____ **SEC:** _____ / _____ **ISO:** _____ / _____
Repeat above test with input 3, if connected	**YES / NO / N/A**
Repeat above test with input 4, if connected	**YES / NO / N/A**
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 Signature: _____ **Date:** ____/____/____

Comments: _____

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.1.5 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 Alteration of Service

The following checklist is to be used when modifying inputs on an existing ASE. It must be completed by the installer. An Alteration of Service form must have already been submitted to arfffirealarmmonitoring@airservicesaustralia.com.

Wire the additional input/s as per Section 9 prior to completing this checklist. Installation must be performed by an Airservices Certified Maintainer.

Email the signed form to: arffsystemsupport@airservicesaustralia.com.

Installer's Name: _____

Contact Mobile Number: _____

Company Name: _____

Device No.: _____

Building Name & Address: _____

Input 3 Description: _____

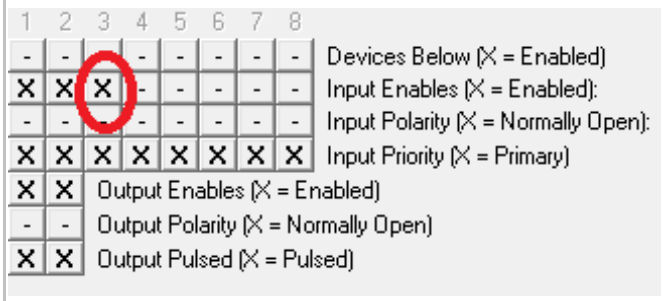
Input 4 Description: _____

The following details are to be completed by ARFFS Systems Support:

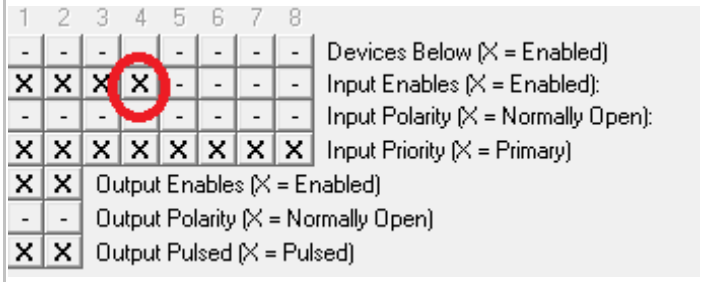
ASID Reference: _____

The following checklist is to be completed by the Installer:

CHECK ITEM	
Confirm with ARFFS Systems Support that Firemon has been updated to alert the local Operator. Do not proceed without confirmation, or arrange a time to perform reconfiguration.	**YES / NO**
Resistor networks connected to inputs as prescribed in Section 9: Input 1: (PRI) ALARM Input 1: (SEC) FAULT Input 1: (ISO) Bridged Input 2: (PRI) Bridged Input 2: (SEC) Bridged Input 2: (ISO) FIP Zone Isolate Input 3: (PRI) Additional Input (e.g. SPKL) Input 3: (SEC) Bridged Input 3: (ISO) Bridged Input 4: (PRI) Additional Input (e.g. SPKL) Input 4: (SEC) Bridged Input 4: (ISO) Bridged	**YES / NO**
Notify the local ARFFS Station that testing is about to commence.	**YES / NO**

<table>
<tr><td>Check the voltage between ISO (screw 1&2), SEC (screw 3&4), PRI (screw 5&6) terminals for each enabled input on the EOLRB when no alarm fault or isolate are active. If they are greater than 30mV when Normally Closed, check if any wiring between the FIP, EOLRB and ASE are loose or incorrectly connected. Consider replacing the FIP relay. Refer to Appendix D for further information.</td><td>Voltage:
<table><tr><th></th><th>Input 1</th><th>Input 2</th></tr><tr><td>PRI:</td><td>_____</td><td>_____</td></tr><tr><td>SEC:</td><td>_____</td><td>_____</td></tr><tr><td>ISO:</td><td>_____</td><td>_____</td></tr></table></td></tr>
<tr><td>Turn ASE key to Test. Record time and date _____</td><td>YES / NO</td></tr>
<tr><td>Activate the Alarm on Input 1. Confirm with the local ARFFS Station that they are seeing the alarm. Clear the Alarm.</td><td>YES / NO</td></tr>
<tr><td>Activate the Fault on Input 1. Confirm with the local ARFFS Station that they are seeing the Fault. Clear the Fault.</td><td>YES / NO</td></tr>
<tr><td>Activate the Zone Isolate on Input 2. Confirm with the local ARFFS Station that they are seeing the Zone Isolate. Clear the Zone Isolate.</td><td>YES / NO</td></tr>
<tr><td>Use the Configuration Tab on the Romteck ASE Maintenance Application to enable Input 3
 

Activate the Alarm on Input 3. Confirm with the local ARFFS Station that they are seeing the Alarm. Clear the Alarm.
Record time and date _____.

Note: The new input will automatically activate and announce at the ARFFS Station.</td><td>YES / NO / N/A</td></tr>
<tr><td>Use the Configuration Tab on the Romteck ASE Maintenance Application to enable Input 4
 

Activate the Alarm on Input 4. Confirm with the local ARFFS Station that they are seeing the Alarm. Clear the Alarm.
Record time and date _____.

Note: The new input will automatically activate and announce at the ARFFS Station.</td><td>YES / NO / N/A</td></tr>
<tr><td>Turn ASE key to Normal.</td><td>YES / NO</td></tr>
<tr><td>Notify the local ARFFS Station that testing is completed.</td><td>YES / NO</td></tr>
</table>

Use ASE Maintenance Software to back up a copy of the ASE configuration. This backup is used to reconfigure a replaced or repaired ASE ready for installation. The ASE configuration is to be archived and stored as per your company's policy.	**YES / NO**

Installer Signature: _____ **Date:** ____/____/____

Comments: _____

17 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: _____

Contact Mobile Number: _____

Company Name: _____

Device No.: _____

Building Name & 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 a RM3118, 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 a 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 FIP.	**YES / NO**

Installer Signature: _____ **Date:** ____/____/____

Comments: _____

18 Definitions

Within this document, the following definitions apply:

Term	Definition
ASE	Alarm Signalling Equipment
GPRS	General Packet Radio Service
HSDPA	High Speed Downlink Packet Access

19 References

Title	Airservices Internal Link
ROMTECK RM2118 GPRS/HSDPA Alarm Signalling Equipment (ASE) Operation and Installation Manual	MAN-639
ROMTECK RM3118 Alarm Signalling Equipment (ASE) Operation and Installation Manual	RM3118
Firemon Fire Alarm Signalling Equipment (ASE) Configuration, Integration and Commissioning	TI-0101
ASE Maintenance Configuration and Diagnostics Software for ASE and FSE Devices	MAN-709

Appendix A How to backup or restore RM3118 dual SIM ASE configuration?

A.1 ASE Maintenance Software Installation

A.1.1 External customer technicians

The latest version of ASE Maintenance Software and RM3118 Operation and Installation Manual are ordered via the TI-0223 process

Note: ASE Maintenance Software Version 2.0.22 or higher is required. Airservices recommend only installing the software on Windows 8.1 or higher.

A.1.2 Internal Airservices technicians

The ASE Maintenance software has been packaged for distribution onto any Airservices SOE PC. Complete a Service Portal > Service Catalogue > Applications & Software > Software Installation – Approved with package name “ASE Maintenance Tool (Version 2.0.22 or higher)”. Ensure the username is in the "AA_LUM_COM_RW" to access the serial ports on the SOE PC.

A.1.3 Setup ASE Maintenance Software

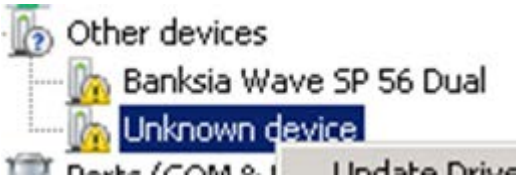
Prior to connecting an ASE for the first time, ensure the PC is connected to the network, as the USB-to-Serial FTDI driver needs to be downloaded. Once installed, the PC does not need to be connected to the network.

On the PC, start Device Manager.

Connect the PC to the ASE using the micro-B to type-A USB cable.

A new Com Port should appear under Device Manager > Ports (COM & LPT) called USB Serial Port (COMX) where X is the Com Port number.

If Device Manager reports the following error then the FDDI driver has not been installed correctly.



ASE Maintenance program installs in Express Mode and requires a key to operate in Unrestricted Mode. Use the following procedure to activate the Unrestricted Mode.

1) Select **Setup > System Settings > Unrestricted Mode Access** Key tab. It will be in Express Mode.

- External customer technicians, send Airservices the **Serial Number** and **Installation Identifier**.
- Internal Airservices technicians, go to ASE Maintenance Access Keys for Airservices Technicians (ORBPE-75190405-808) to receive the Access Key.

3) Airservices will provide the access key number.

4) Copy the key to the **Unrestricted Mode Access** key field.
5) Click **Test Access Key**.
6) Verify the mode is now **Unrestricted Mode.**

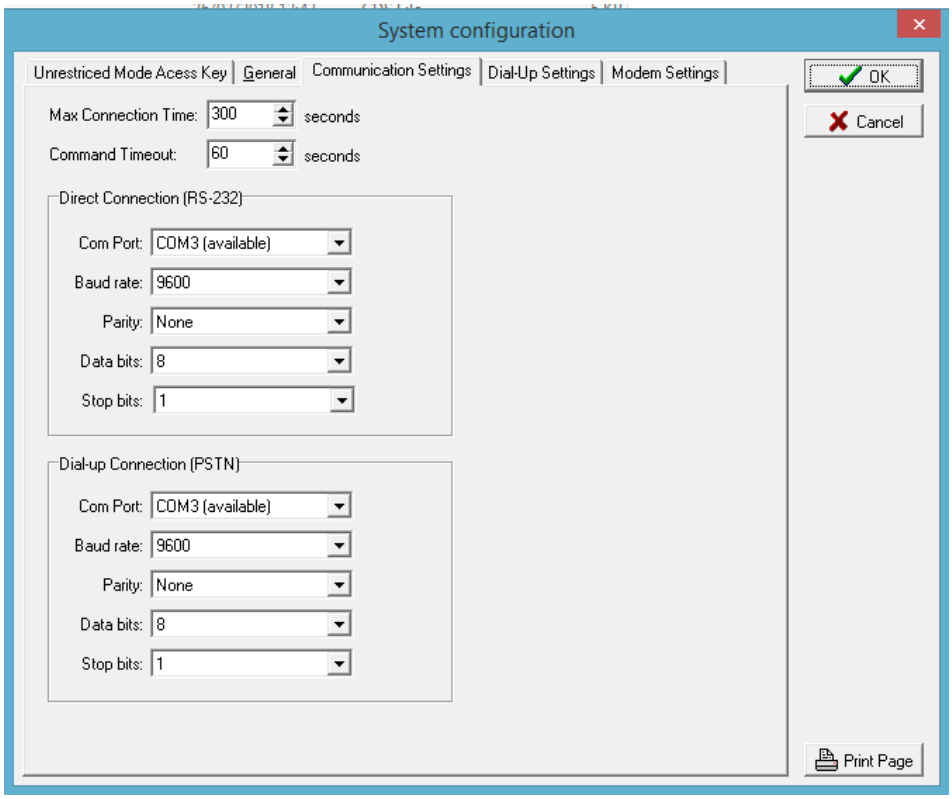
Mode: Unrestricted Mode

7) Click OK to close window.

Select **Help > About**. Verify the Version is 2.0.22 or higher. Close this window.

Go to **Setup > System Settings > Communication Settings tab** and ensure the Direct Connection (RS-232) settings are set up as follows. It may be necessary to change the Com Port setting to match the available desktop/laptop serial ports.

Note: The ASE Maintenance application has to be started AFTER the cable is connected to an ASE that is powered on. Otherwise the application will not register the available Com Port.



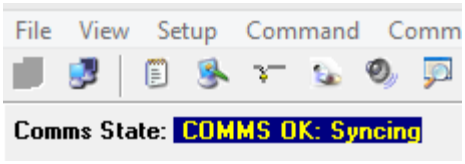
Note: the Com Port may vary, but it should say **(available)**

A.1.4 How to backup a configuration?

a) Connect the micro-B to type-A USB cable to the ASE.
b) Start ASE Maintenance application
c) Select File > Add Device ….
d) Select Type 40 : RM3118-WIP-WIP-ASE-F and click OK.

e) Right-click on the new device and select Connect. If an information Address Mismatch box pops up, click **OK**.

f) Confirm ASE Maintenance shows COMMS OK: Syncing



g) Click on Configuration tab and select Read Configuration and **Yes** at the Warning popup.

h) Click on **IP Configuration > WIP1 (IP Configuration #1)** and select **Read IP Configuration** and **Yes** at the Warning popup.

i) Click on **IP Configuration > WIP2 (IP Configuration #2)** and select **Read IP Configuration** and **Yes** at the Warning popup.

j) The Firemon Device Number is shown on a label on the front of the ASE. Update the **Device Details > Firemon Device No** edit box with this information.

k) Add the **Firemon Device Number**, building name and address to the building field on the **Device Details > Building** edit box

Note: Firemon Device Number is included in the Building edit box because the ASE Maintenance data export has a limitation whereby the Firemon Device Number, which is the primary reference number for all faults and failures, cannot be included in the file name.

Note: Ensure the building name and address do not contain any reserved file name characters (i.e. forward slash (/), backslash (\), asterisk (*) etc.) as it will cause issues with the data export.

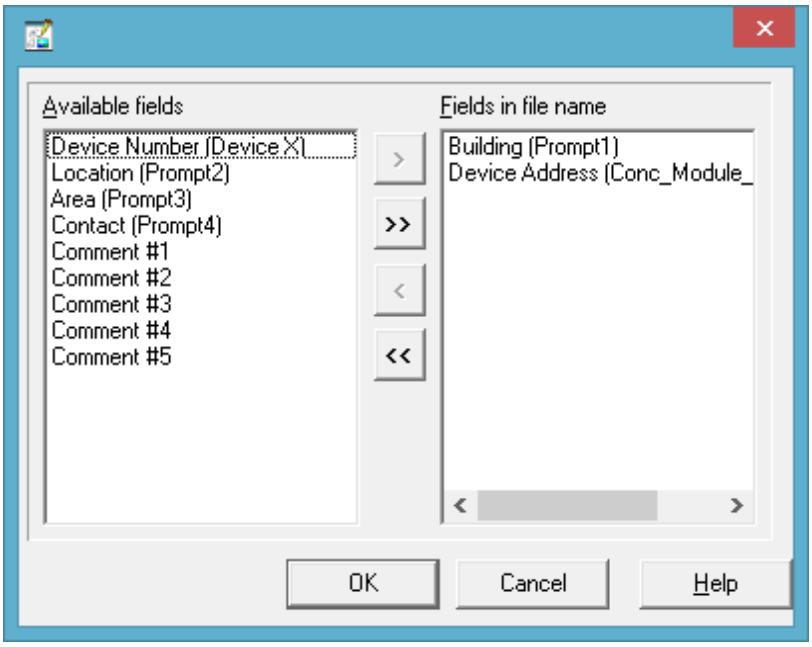
l) Press **Save Changes** to save the configuration to the local database.

m) Close the Device Configuration tool.

n) Select **File > Export All Devices**…

Note: Do not use File > Export Device *as it does not include sufficient meta data in the file name.*

o) Modify the **Define fields…** The **Fields in the file name** on the right hand side should be as per the following image and select OK and OK at the information popup.



p) This backup is used to reconfigure a replaced or repaired ASE, ready for installation.

q) The ASE configuration located in C:\ProgramData\Romteck\ASEMaintenance\Export is to be archived and stored as per your company's policy.

r) For Airservices internal devices, e-mail the zip file to arffsystemsupport@airservicesaustralia.com:

A.1.5 How to restore a configuration?

It is the customer's responsibility to ensure they hold sufficient spare ASEs to meet Australian Standards restoration times.

a) Confirm Telstra and Optus SIMs are **NOT** installed.

b) Connect the micro-B to type-A USB cable to the ASE.

c) Start ASE Maintenance application.

d) Select **File > Import Device(s)...** Navigate to the required file. Click OK at the information popup.

e) Sort by **Device No** by clicking on the column header.

f) Scroll to last **Device**.

g) Right-click on the new device and select Connect. If an information Address Mismatch box pops up, click OK.

h) Click on **Configuration tab** and select **Write Configuration** and **Yes** at the Confirm popup.

i) Click on **IP Configuration > WIP1 (IP Configuration #1)** and select **Write IP Configuration** and **Yes** at the Confirm popup.

j) Click on **IP Configuration > WIP2 (IP Configuration #2)** and select **Write IP Configuration** and **Yes** at the Confirm popup.

k) Power off the device.

l) Install the Telstra SIM in the on-board SIM slot.

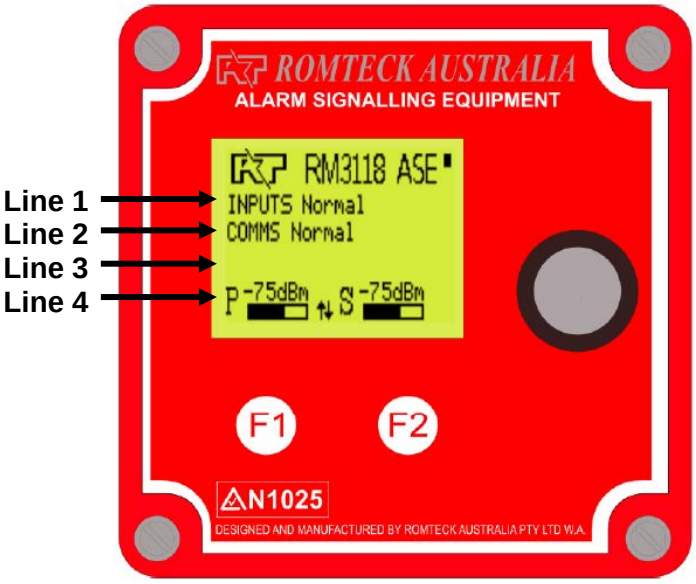
m) Install the Optus SIM in the modem module connected to the mounting box

Note: Warning this is now live equipment. Do not power on the ASE until it has been wired to the Operation FIP. 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



Press the F1 button on the screen to activate the backlight for 15 minutes.

Line 1 Input will show the FIP status:

- INPUTS Normal - All alarm inputs are normal.
- ALARM Z – An alarm is present on Zone(s).
- FAULT Z – (FIP Fault) A FIP fault is present on Zone(s).
- ISOLATE Z – (Isolated) A zone Isolate is active on Zone(s).
- LINE FLT Z (ASE Line Fault) - No building alarm monitoring due to a wiring issue between the ASE and the End-of-Line Resistor Board (EOLRB).

Note: For line 1, only the highest priority alarm is displayed. Priority is ALARM (highest) then FAULT then ZONE ISOLATE (lowest). Press F2 and then ZONE status menu to confirm the exact status of every zone.

Line 2 shows the ASE communications status:

- COMMS Normal - All communications links from the ASE to the Airservices central servers are operating normally.
- PRI FAILED (Primary Comms Failure) – Telstra Primary link has FAILED.
- SEC FAILED (Secondary Comms Failure) – Optus Secondary link has FAILED.
- PRI & SEC FAILED (Total Comms Failure) – No building alarm monitoring due to total comms failure.
- PL or SL HH:MM Primary or Secondary link is still working but the ASE software will not use the communications path for up to 60 minutes. *Note: Airservices ASE configuration minimises the possibility of the ASE invoking this undesirable legacy lockout.*

Line 3 shows the ASE internal status:

- TESTING HH:MM:SS – The ASE is in Key TEST mode. This will automatically expire in the period indicated.
- ISOLATED (Isolated) – The ASE is in Key ISOLATE mode.
- LOW BATT (Low battery) – FIP has a low battery level.

Line 4 provides more detail on the ASE communications status:

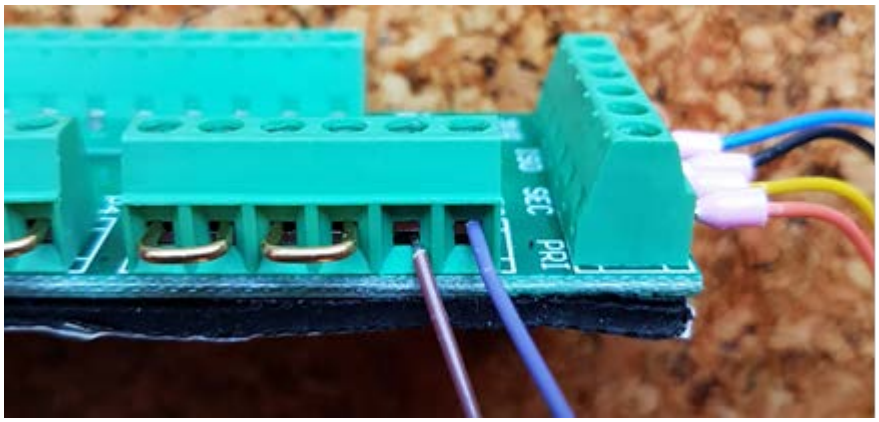
- Reset, INIT (initialise), SIM, PIN, REG (register) or Flashing signal level (i.e. -63dBm) indicates the communication link is currently resetting
- INIT, SIM, PIN, REG text with a cross indicates the modem failed to initialise and link is failed.
- Solid signal level with two arrows 

indicates communications link is operating normally.

Appendix D Notification Form 204 High number of FIP Faults

If a high number of FIP faults or zone isolates are being reported (or zone isolate when the zone isolate input is bridged out), the following steps may be followed:

1) Check if the FIP is generating the faults, and correct it.
2) Check if any wiring between the FIP, EOLRB and ASE is loose or incorrectly connected, and correct it.



3) The Romteck EOLRB design is sensitive to a build-up of resistance on the FIP relay contacts. This can cause erroneous FIP faults (zone isolates, faults or alarms) to be generated. With a new relay contact the resistance will be very small (generally less than 0.2Ω) because the tips are new and clean. Over time, the tip resistance will increase eventually leading to erroneous faults. Check the voltage between ISO (screw 1 & 2), SEC (screw 3 & 4) PRI (screw 5 & 6) terminals for each enabled input on the EOLRB when no alarm, fault or isolate are active. If they are greater than 30mV* when Normally Closed, check if any wiring between the FIP, EOLRB and ASE are loose or incorrectly connected. If the voltage is still greater than 30mV* or if there are still erroneous FIP faults, replace the FIP relay.

   *Note: 30mV is not a hard rule but a guideline to aid with troubleshooting.