



Avigilon Radio Alert User Guide

For ACC™ 7 Software and Motorola Radios

© 2023, Avigilon Corporation. All rights reserved. AVIGILON, the AVIGILON logo, AVIGILON CONTROL CENTER and ACC are trademarks of Avigilon Corporation. MOTOROLA, MOTO, MOTOROLA SOLUTIONS, and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. Other names or logos mentioned herein may be the trademarks of their respective owners. The absence of the symbols ™ and ® in proximity to each trademark in this document or at all is not a disclaimer of ownership of the related trademark.

This document has been compiled and published using product descriptions and specifications available at the time of publication. The contents of this document and the specifications of the products discussed herein are subject to change without notice. Avigilon Corporation reserves the right to make any such changes without notice. Neither Avigilon Corporation nor any of its affiliated companies: (1) guarantees the completeness or accuracy of the information contained in this document; or (2) is responsible for your use of, or reliance on, the information. Avigilon Corporation shall not be responsible for any losses or damages (including consequential damages) caused by reliance on the information presented herein.

Avigilon Corporation
avigilon.com

INT-RA-A

Revision: 4 - EN

20230403

Table of Contents

Introduction	5
Integration Model	5
Requirements	5
Radio Network	5
Supported Radio Models and Connectors	5
Video Network	6
Avigilon Software	6
Avigilon Certified Solution	6
Minimum System Requirements	7
For More Information	7
Installation	8
Configuring Radios	8
Installing the Donor Radio	8
Configuring the Workstation	8
Installing Server Software	8
Installing Workstation Software	9
Installing USB Driver	9
Configuration	10
Configuring the ACC Site	10
Licensing the Integration	10
Adding an Integration User	10
Configuring Alarms	11
Alarm Configuration Best Practices	11
Configuring Radio Alert	13
System Configuration	13
Adding Endpoint Radios	13
Adding a Group	13
Adding a Radio	14
Editing and Removing Endpoint Radios	14
Enabling and Disabling Endpoint Radios	14
Ignoring Duplicate Alarms	14
Enabling and Disabling Alarms	15
Testing the Integration	15
Troubleshooting	16

Alarms	17
Acknowledging Alarms	17
Paused Voice Alarms	17
Known Issues	18
Installation Fails if Port 44344 Is In Use	18
All Alarms Sent to All Radios	18
Radio Alert Ignores the Alarm Wait Time	18
Duplicate Text Alarms Sent to Radios Added Individually and as Part of a Group	19
Restart Required after Changing Integration User	19
Existing Alarms Sent after Server Added to Site	19
No Warning for Certificate Expiry	19
Alarm Configuration Template	20

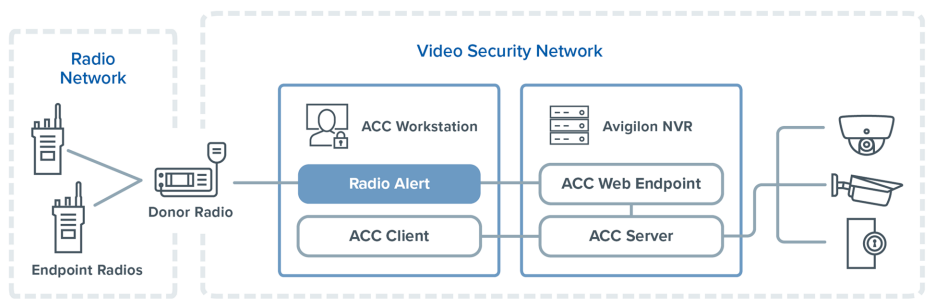
Introduction

The Avigilon Radio Alert integration allows users to receive and acknowledge Avigilon Control Center (ACC) alarms from their MOTOTRBO™ or ASTRO™ radio system. The integration includes:

- The Avigilon Radio Alert software that connects to an ACC site and the radio network.

Integration Model

Configured ACC alarms are sent to the Radio Alert software using the ACC Web Endpoint Service. A **donor radio** transmits the alarms to the radio network as text or voice alarms. The donor radio must be a mobile radio. Responders receive and acknowledge alarms on their **endpoint radios**. Endpoint radios can be either mobile or portable radios.



It's not required to install the Radio Alert software on the same workstation as the ACC Client software, but it may be helpful for the initial configuration.

Requirements

Radio Network

- MOTOTRBO or ASTRO Radios with Text Messaging Service
 - At least 1 mobile radio as the donor radio
 - As many mobile and portable radios as required for the endpoint radios

Supported Radio Models and Connectors

MOTOTRBO	North America	Europe	Oceania	Asia
Donor Radios	XPR 5550e XPR 5580e	DM4601e	DM4601e DM2600	XiR M8668i XiR M6660

MOTOTRBO	North America	Europe	Oceania	Asia
Endpoint Radios	XPR 3500	DP4801e	DP4801e	XiR P8668i
	XPR 3500e	SL401e	DP4601e	XiR P8628i
	XPR 5550e	SL2600	DP4801 Ex	XiR P8668 Ex
	XPR 5580e	SL2600e	SL401e	SL2K
	XPR 7550e		DP3661e	SL2M
	XPR 7550e IS*		SL2600	XiR P6620i
	XPR 7580e		DP2600e	
	XPR 7500			
	SL 7550e			
	SL 7580e			
	SL 7590e			
	SL 3500e			
USB/Stereo Y Cable	PMKN4233A	PMKN4233A	PMKN4233A	PMKN4233A

* Canada only

ASTRO	North America Only
Donor Radios	APX 4500, APX 6500, APX 8500
Endpoint Radios	APX 4000, APX 4500, APX 6000, APX 6500, APX 8000, APX 8500
USB/Stereo Y Cable	KT000276A01

Video Network

Avigilon Software

- ACC Server Software 7.4 or later
- ACC Client Software 7.4 or later
- ACC Web Endpoint Service 7.4 or later
- Avigilon Radio Alert Software 1.0 or later*
- ACC 7 Enterprise License
- Avigilon Integration License: ACC7-RADIO-ALERT

* Avigilon Radio Alert version 1.2 or later is required to use ASTRO radios

Avigilon Certified Solution

- NVR Workstation: HD-NVRWS3, NVR4-WKS
- Remote Monitoring Workstation (4-Monitor): HD-RMWS4-4MN, RM5-WKS-4MN
- Remote Monitoring Workstation (2-Monitor): HD-RMWS3-2MN, RM5-WKS-2MN

Minimum System Requirements

Note: Installing the Radio Alert software on a personal computer is not recommended. Configure the system to ensure uptime and security.

System Requirement	Minimum Requirement
Display Resolution	1280 x 720
Operating System	Windows 10 (64-bit) with Microsoft .NET 4.6.2
Processor	4 Core at 2.8 GHz
System RAM	8 GB DDR4-2666
Network Interface	1 Gbps Full-Duplex
Available Hard Disk Space	1 GB
Audio Interface	3.5 mm output
USB Interface	3 x USB 2.0 ports

For More Information

For more information about the procedures outlined in this guide, refer to the following:

- [Avigilon Control Center Client User Guide](#)
- [Avigilon Control Center Server User Guide](#)
- Documentation for your radio model

Installation

Configuring Radios

Have your radio specialist:

- Enable push-to-talk (PTT) and text messaging on all donor and endpoint radios.
- Tune the donor and endpoint radios to the same channel.
- Tune any scanning radios to the same channel as the donor radio. These radios can scan into other channels to send or receive voice messages, but will only be able to send and receive text messages from the channel used for Radio Alert.
- *MOTOTRBO radios only.* Obtain the donor radio's Radio Network ID, Group Network ID, and Text Messaging System (TMS) port number.
- Obtain the endpoint radios' Group ID or individual Radio IDs.

Installing the Donor Radio

1. Connect the power supply to the donor radio and plug in to an outlet.
2. While the radio is OFF, connect the USB/Stereo Y cable to the radio.
3. Plug the USB cable into the workstation.
4. Plug the Stereo cable into the 3.5 mm stereo speaker output socket of the workstation.
5. Turn on the radio.

Configuring the Workstation

- Set the workstation speaker volume to 35 or higher. The workstation volume is tied to the donor radio's audio output. The volume needs to be loud enough for the donor radio to transmit voice alarms, but not too loud that the audio is distorted on the endpoint radios.
- Prevent the workstation from sleeping. If the workstation enters sleep mode, it will stop sending alarms and will need to be restarted.
 - Go to **Control Panel > Power Options > Change plan settings.**
 - Change Put the computer to sleep to **Never.**

Installing Server Software

Install the following software on a server connected to the network:

- The ACC Server software version 7.4 or later.
- The ACC Web Endpoint Service version 7.4 or later.

Installing Workstation Software

Install the following software on the workstation connected to the donor radio:

- The ACC Client software version 7.4 or later.
- The Avigilon Radio Alert software version 1.0 or later.*

* Avigilon Radio Alert version 1.2 or later is required to use ASTRO radios

Installing USB Driver

Install the following software on the ACC server:

- Radio Management Device Programmer

Configuration



Both the ACC site and Radio Alert software need to be configured to receive and acknowledge ACC alarms with Motorola radios.

Configuring the ACC Site

The ACC site must be licensed to use the Radio Alert integration. A new user and permission group are also recommended for the integration.

Licensing the Integration



The ACC site must be licensed to use the integration. If you do not have a Radio Alert license, contact Avigilon Order Management.

1. In the New Task menu , click **Site Setup**.
2. Click the site name, then click **License Management** .
3. Click **Add License...** and enter your product key.
4. If you have internet access, click **Activate Now**.
If you do not have internet access, see Offline Activation in the [Avigilon Control Center Client User Guide](#).
5. Click **OK**.

Adding an Integration User



For security, add a new user to connect to the integration.

This user's credentials are entered in the Radio Alert software to connect to the ACC site. When alarms are acknowledged by a radio, this username will appear in the site logs and alarm search details.

1. In the New Task menu , click **Site Setup**.
2. Click the site name, then click **Users and Groups** .
3. In the Users tab, click **Add User**.
4. Enter the username and password. These credentials are case-sensitive.
5. Select the **Password never expires** check box so that you do not need to update the password for the integration.
6. In the Member Of tab, select a permission group. This user can use the Restricted Users group or a group without any permissions.
7. Click **OK**.

Configuring Alarms

Any ACC alarm can be sent to endpoint radios if the integration user is an alarm recipient. Alarms can be triggered by a Video Analytics Event, Access Control Event, License Plate Watch list Match, or a custom rule. For more information, see the [ACC Client Enterprise User Guide](#).

1. In the New Task menu , click **Site Setup**.
2. Click the site name, then click **Alarms** .
3. Click **Add**.
4. Select the alarm trigger source and device if applicable.

Note: Do not select the **Auto-acknowledge alarm immediately after it activates** check box. Radios will not receive alarms if this is selected.

Exception: Alarms triggered by Motion Detection, Video Analytics Event, and Digital Input Activation will still be sent to radios if the auto-acknowledge check box is selected.

5. Click **Next**.
6. Select any linked devices and click **Next**.
7. Add the integration user as an alarm recipient and click **Next**.
8. Select any alarm acknowledgment actions and click **Next**.
9. Name the alarm and assign a schedule.

Note: The alarm name is the voice and text message that endpoint radios will receive. The name should be short, descriptive, and useful to the radio users. For more information, see *Alarm Configuration Best Practices* below.

10. Click **Finish**.

Alarm Configuration Best Practices

The voice and text alarms sent to endpoint radios are based on the ACC alarm name. To get the most out of your system, consider the following:

- Radio users will receive all ACC alarms with the integration user as an alarm recipient. Only assign alarms to the integration user if a radio user needs to respond.
- Create an alarm for each alarm trigger sent to radio users.
- Use short, descriptive alarm names that follow the format: "Event type, Location"
 - Commas and periods create a pause in voice alarms.
 - Be aware of the text message character limit for your endpoint radios.
 - Avoid using the camera name in the alarm name, as this information may not help the radio user.
- Set the ACC alarm schedule to match when radio users should receive alarms.
- After a while, you may find that:
 - Radio users only need the location or a code word in the alarm name.
 - Some alarms occur at the same time each day due to the site's regular operation and can be ignored.
 - New alarms should be sent to radio users.
- Revisit your alarm strategy regularly to see if the alarm name, trigger, and schedule are still appropriate.

The following table is an example of how you can plan your alarm strategy. Use the *Alarm Configuration Template* on page 20 to create and revise your own strategy.


Alarm Name	Camera Name and Location	Trigger	Schedule
Loitering, South Door	Camera 12, South Perimeter	Video Analytics Event	M-F 8 AM - 6 PM Excluding lunch hours - 12 PM - 1 PM
North Door	Camera 3, Front Gate	External Software Event, linked to Door forced rule	M-F 8 AM - 6 PM
Back Lot	Camera 8, SE Perimeter	License Plate Watch list Match	M-F 6 PM - 8 AM Weekends

Configuring Radio Alert

In the Radio Alert client, configure the ACC Server and Donor Radio connection. You can also add endpoint radios and configure the alarm settings.

System Configuration

Enter the following information about your ACC Server and Donor Radio to connect your ACC site to the radio network.

1. In the top-right corner, click .
2. In the Avigilon Control Center (ACC) Configuration section, enter the following:
 - **Username** and **Password** — The integration user's credentials. Both fields are case-sensitive.
 - **Server IP Address** — The ACC Server IP Address. This can be found on the Site Health page in the ACC Client software. Double-check that the Server version is 7.4 or later.
 - **Port** — The ACC Server port number. The default port number is 8443 for Windows-based servers and 443 for ES appliances.
3. Click the toggle to select the MOTOTRBO or ASTRO Donor Radio Configuration
4. Enter the applicable configuration information:
 - **IP Address** and **Default Gateway** — The donor radio's IP and Gateway address. This can be found by entering `ipconfig /all` in Command Prompt on the workstation connected to the donor radio. Look for the network interface with the `Description: MOTOTRBO Radio` or `Description: Motorola APX Series Radio`.
 - **Radio Network ID** and **Group Network ID** — The Common Air Interface (CAI) radio and group network IDs. Obtained from your radio specialist.
 - **TMS Port** — The radio's Text Messaging System (TMS) port number obtained from your radio specialist. The default port number is 4007.

Adding Endpoint Radios

All endpoint radios on the same channel as the donor radio will receive voice alarms. To ensure that endpoint radios also receive text alarms, add them to the Radio Alert software by Group ID or Radio ID.

Contact your radio specialist to determine the Group ID and Radio IDs.

Adding a Group

All endpoint radios in a group will receive an alarm. Radio Alert only supports one configured group.

1. In the top-left corner, click **Alarm Settings**.
2. Click **Add Group**.

3. Enter the **Group ID** obtained from your radio specialist.
MOTOTRBO radios only. The IP Address is calculated automatically.
4. Enter a **Group Name** and click **Save**.

Adding a Radio

If there are additional radios outside of the group, you can add them individually.

Note: If a radio that is part of a group is added again, it will receive duplicate text alarms.

1. In the top-left corner, click **Alarm Settings**.
2. Click **Add Radio**.
3. Enter the **Radio ID** obtained from your radio specialist.
MOTOTRBO radios only. The IP Address is calculated automatically.
4. Enter a **Radio Name** and click **Save**.

Editing and Removing Endpoint Radios

You can edit and remove endpoint radios.

1. In the top-left corner, click **Alarm Settings**.
2. Click the icon next to a radio or group.
 - To edit, update the information and click **Save**.
 - To remove, click **Remove Radio** or **Remove Group**.

Enabling and Disabling Endpoint Radios

New groups and radios are enabled to receive ACC alarms by default. You can disable a group or radio so that it no longer receives text alarms. It will still receive voice alarms however.

1. In the top-left corner, click **Alarm Settings**.
2. Click the toggle next to a radio or group to enable or disable it.

Ignoring Duplicate Alarms

Sometimes, the same alarm may be triggered many times in the ACC site. To avoid receiving the same alarm multiple times on your endpoint radio before you can investigate the event, configure how long the system should ignore duplicate unacknowledged alarms.

1. In the top-left corner, click **Alarm Settings**.
2. Ensure the **Ignore Duplicate Alarms** toggle is enabled.
3. In the **Ignore Duration** area, enter a time in minutes or use the slider to set how long duplicate unacknowledged alarms are ignored by the system. The default time is 10 minutes.

After an alarm is acknowledged, radio users can receive the same alarm again. For more information, see *Acknowledging Alarms* on page 17.

To allow duplicate alarms, disable the **Ignore Duplicate Alarms** toggle. This is not recommended on live systems.



Enabling and Disabling Alarms

Both voice and text alarms are enabled by default. You can disable one or both types of alarm notifications to block ACC alarms from being sent to endpoint radios.

Note: It is not recommended to disable text alarms at any time for live systems.

1. In the top-left corner, click **Alarm Settings**.
2. Click the toggle next to **Voice Alarms** or **Text Alarms** to enable or disable them.

Testing the Integration

1. In the Radio Alert software Alarm Settings, ensure that:
 - **Ignore Duplicate Alarms** is disabled.
 - **Voice Alarms** and **Text Alarms** are enabled.
 - Endpoint radios are enabled.
2. In the ACC Client, configure an alarm that triggers on an External Software Event. The integration user must be an alarm recipient.
3. Add a Rule to trigger the alarm using a keyboard command:
 - a. In the Setup tab, click **Rules** .
 - b. Click **Add** and then select **User Events > Custom keyboard command triggered**.
 - c. Click the **number 0** to change the keyboard command. Click **Next**.
 - d. Select **Alarm Actions > Trigger an alarm**.
 - e. Click **an alarm** and select the alarm in step 2. Click **Next**.
 - f. Click **Next** again and enter a rule name and description. Click **Finish**.
4. In the New Task menu , under View, click **Alarms**.
5. Trigger the alarm:
 - a. Press **Ctrl + K**.
 - b. Enter the keyboard command and then press **Enter**.
6. Verify that the alarm appears in the Alarms tab.

The endpoint radios should receive a voice and text alarm.
7. If successful, re-enable the **Ignore Duplicate Alarms** toggle for the live system.

Troubleshooting

If you do not receive any alarms on your endpoint radios, check the following:

- The Avigilon Radio Alert service and the Avigilon Radio Alert (Web API) service are running on the workstation.
- The ACC site information and donor radio information is entered correctly on the Radio Alert System Configuration page.
 - Ensure the same TMS port number is used for the donor radio, endpoint radios, and the ACC Radio Alert Integration. The default port is 4007 UDP.
 - Ensure the TMS port is open between the devices and the ACC system.
 - If the issue persists, check if there are applications that may be using the TMS port. Uninstall any application that is not needed.
- Ensure the endpoint radios are added to the Radio Alert software and that the information is entered correctly on the Alarm Settings page.
- Voice and text alarms are enabled by default on the Radio Alert Alarm Settings page. Check if this was changed.
- The ACC alarm appears in the ACC Client software's Alarms tab.
 - If not, check the alarm settings in the Site Setup tab.
- The donor radio and endpoint radios are turned on and tuned to the same channel.
- The donor radio is able to send text and push-to-talk messages to the endpoint radios.
- The volume is set to 35 or higher on the workstation connected to the donor radio.
- The workstation is configured to never sleep. If not, change the Power Options setting and restart the workstation.

If you confirm all of the above and the endpoint radios still do not receive ACC alarms, contact Avigilon Technical Support.

Alarms

All ACC alarms assigned to the integration user will be sent to endpoint radios as voice or text alarms.

Acknowledging Alarms

Note: Text alarms must be enabled for radio users to acknowledge ACC alarms. See *Enabling and Disabling Alarms* on page 15.

- From your radio, reply to the text alarm. The message can be blank.
For more information on how to reply, see your radio documentation.

Alarms acknowledged from your endpoint radio will be marked as acknowledged in the ACC software. When searching alarms, acknowledged alarms will display the radio name and ID in the Note section.

Event	Alarm	Start Time	Note
Triggered	Loitering, South Door	2/26/2020 4:40:08 PM	
Acknowledged by 'RadioAlert'	Loitering, South Door	2/26/2020 4:40:58 PM	Acknowledged through Radio Alert from Radio 1, 30006.
Triggered	Loitering, South Door	2/26/2020 4:43:31 PM	
Acknowledged by 'RadioAlert'	Loitering, South Door	2/26/2020 4:44:12 PM	Acknowledged through Radio Alert from Radio 2, 30004.

Paused Voice Alarms

If more than 5 alarms per minute are received and go unacknowledged, the system stops sending voice alarms to free up the voice network for communication.

You will receive the notification: *Voice alarms paused for X minutes.*

The pause duration is one minute longer than the Ignore Duration setting. For more information, see *Ignoring Duplicate Alarms* on page 14.

Text alerts will still be sent for alarms that occur during the pause duration.

Known Issues

Installation Fails if Port 44344 Is In Use

The Radio Alert software uses port 44344. If another application is configured to use port 44344, the Radio Alert installation will not finish. To confirm, check the log file in the %TEMP% folder for one of the following lines:

- Unable to register listening on endpoint.
- Unable to register certificate for endpoint.

To successfully install the Radio Alert software, configure the other application to use a different port.

All Alarms Sent to All Radios

All ACC alarms assigned to the integration user are sent to all of the radios listed in the Radio Alert software. Currently, there is no way to group radios to receive certain alarms.

Radio Alert Ignores the Alarm Wait Time

The Radio Alert software immediately sends ACC alarms to endpoint radios, even if the alarm has a configured Wait Time.

Add Alarm [X]

Select Alarm Recipients

Select the users that will be notified when this alarm is triggered:

User/Group	First Name	Last Name	Wait Time
RadioAlert			0 h 5 m

Add Recipients... **Remove Recipients**

☐ Play sound when alarm is triggered: Alarm 1.wav [Play]

Previous **Next** **Cancel**

Duplicate Text Alarms Sent to Radios Added Individually and as Part of a Group

If a radio is added by Radio ID but is also part of a group configured to receive ACC alarms, it will receive duplicate text alarms.

Restart Required after Changing Integration User

If the ACC integration user is updated on the System Configuration page, restart the Avigilon Radio Alert service to continue receiving alarms.

- In Windows Services, restart the Avigilon Radio Alert service.

Existing Alarms Sent after Server Added to Site

If a new server is added to a site configured to use the Radio Alert integration, unacknowledged alarms from the server will be sent as new alarms to connected radios.

No Warning for Certificate Expiry

The Radio Alert certificate expires after 5 years and must be renewed. Currently there is no warning that the certificate is about to expire.

To renew your certificate:

1. In Windows Services, stop the Avigilon Radio Alert service and Avigilon Radio Alert (Web API) service.
2. Open Command Prompt as an administrator.
3. Run the following commands:

```
powershell.exe C:\ProgramData\Avigilon\RadioAlert\Scripts\RemoveCert.ps1 -executionpolicy bypass  
powershell.exe C:\ProgramData\Avigilon\RadioAlert\Scripts\SetupCert.ps1 -executionpolicy bypass
```
4. In Windows Services, restart the Avigilon Radio Alert (Web API) service and the Avigilon Radio Alert service.

Alarm Configuration Template

Alarm Name	Camera Name and Location	Trigger	Schedule