

Using AirLink Vehicle Telemetry Configuration

APPLICATION NOTE

Introduction

AirLink Vehicle Telemetry Configuration (AVTC) is an AirLink Application Framework (AAF) application that allows convenient distribution of proprietary vehicle configuration information to supported AirLink devices¹. In addition, it provides a convenient way to update firmware on GNX-6 devices that are connected to AirLink devices in GenX Companion mode.

AVTC consists only of vehicle-specific data. There is nothing to configure on the app itself. When installed on a supported AirLink device running ALEOS 4.12.0 or later, it enables the device to collect proprietary vehicle data parameters. AVTC enables reporting of proprietary vehicle information to ALMS (with AVTA installed) or AMM (with AMMER installed) respectively.

Why Install AVTC?

A standard OBD-II or J1939 connection to an AirLink gateway or router enables a limited number of vehicle parameters to be reported to ALMS or AMM. Even with this limited set of standard parameters, such as RPM, speed, relative odometer and emissions data, the exact items reported by a given vehicle may vary.

AVTC enables the collection of several desirable parameters that are not available via the standard data. These parameters may include, for example, dash odometer, seatbelt status, tire pressure and door status.

Typically, proprietary data depends on the vehicle make, model and model year. Once AVTC is installed, ALEOS vehicle telemetry determines the make, model and year by decoding the VIN obtained from the vehicle, and then selects the appropriate vehicle parameters from a list of available vehicles. For more information, see [Supported Vehicles and Vehicle Parameters](#) on page 9.

Additional Feature: GenX Companion

A secondary feature of AVTC is enabling firmware updates to any GNX-6 devices connected to an AirLink device in GenX Companion mode. New releases of AVTC will include new GenX firmware releases and will apply the firmware to the GNX-6 device.

1. AirLink MP70 (ALEOS 4.12.0), LX60WT (ALEOS 4.13.0)

ALEOS 4.12.0 and later supports GenX Companion mode to extend the telemetry capability of the AirLink MP70. In Companion mode, a GNX-6 device attached to the MP70 serial port can transmit J1708 vehicle data and report it to ALMS or AMM via the standard AirLink reporting mechanisms. When the GNX-6 is used in this way, it can only be upgraded via the AirLink device it is attached to. AVTC is used to distribute new GNX-6 firmware via the AirLink device to allow an upgrade to take place.

Note: GenX Companion mode requires installing the AVTC app and a GenX companion kit (Sierra Wireless part number 6001225). Please contact your Sierra Wireless Partner for more information about GenX Companion.

Using AVTC

AVTC is upgraded regularly as Sierra Wireless expands its database of proprietary vehicle information, including new vehicles and additional vehicle parameters. The latest version of AVTC should always be installed on all devices that have vehicle telemetry enabled.

Note: If your AirLink device is collecting telemetry data for a non-vehicle application, please consult your Sierra Wireless Partner before installing AVTC.

If AVTA or AMMER is installed on an AirLink device, then AVTC should be installed as well. Although vehicle telemetry will work when AVTC is not installed, access to proprietary vehicle data will not be available unless it is installed.

Note: There is an exception—if you have installed a specific vehicle configuration file locally via ACEmanager (Services > Vehicle Telemetry > Advanced > Telemetry Configuration), proprietary data will be read from the vehicle. If the data is in the set of standard reportable items (such as seatbelt and dash odometer) then it will be reported as well. If the data is not in the set, then it will not be reported even if it is read from the vehicle. Sierra Wireless recommends that all local configuration files are removed from devices once AVTC is installed.

Installing AVTC

You can install AVTC using ACEmanager, ALMS or AMM. Ensure that your AirLink router or gateway is running ALEOS 4.12.0 or later.

Note: Sierra Wireless recommends installing AVTC using ALMS or AMM. Sierra Wireless does not recommend installing locally from ACEmanager. After you have installed AVTC using ALMS or AMM, these management systems will automatically notify you when updates to AVTC are released. If you install AVTC locally using ACEmanager, you may not be able to update the app later using ALMS or AMM.

Using ALMS

To install AVTC using ALMS:

1. Select the desired system. It must be an MP70 running ALEOS 4.12.0 or later.
2. Click the **More** button, and then select **Install Application**, as shown in [Figure 1](#).

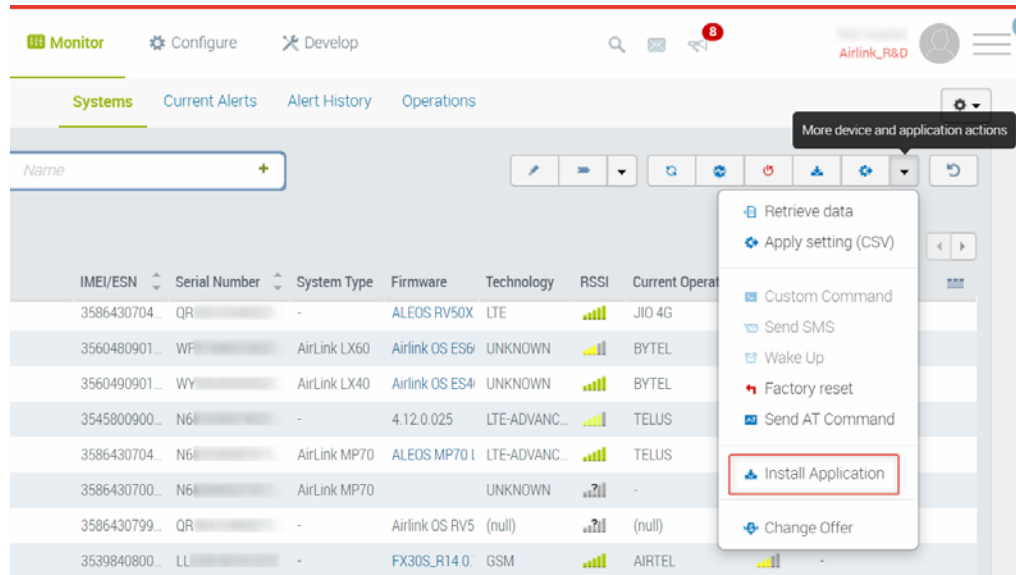


Figure 1: More > Install Application

3. On the next screen, select the latest version of AVTC, as shown in [Figure 2](#).

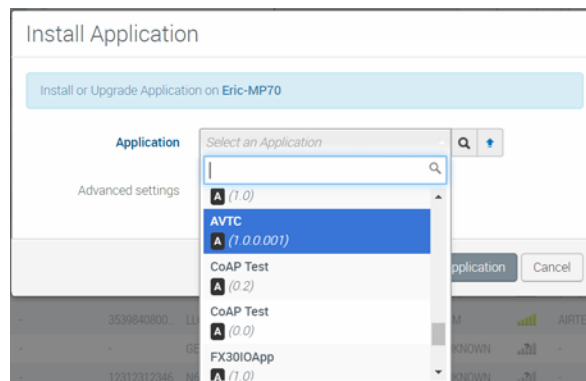


Figure 2: Install Application

4. Click **Install Application**.

You can also install AVTC when you register a new device on ALMS.

To install AVTC when registering a new device:

1. After entering the device serial number and IMEI/ESN and entering an optional device name, select **Pre-configure system**.
2. Click **Register**.
3. Select any pre-configuration items.
4. Drag and drop the Install AAF Application workflow under **Apply Template**.
5. Set your AAF password and select the latest version of AVTA.
6. Click **Show individual actions**, and then drag and drop **Install Application** under the Install AAF Application workflow as shown in [Figure 3](#).

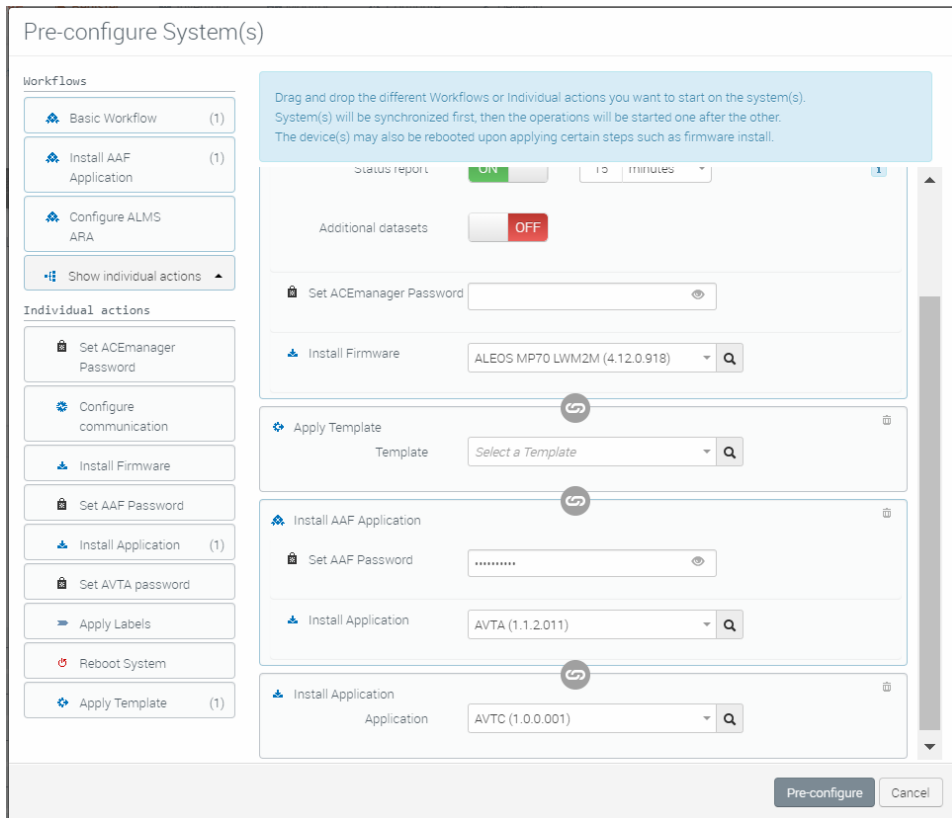


Figure 3: Pre-configuration workflows

7. Select the latest version of AVTC.
8. Click **Pre-configure**.

Using AMM

Note: For full details, see the AMM Operation and Configuration Guide.

AAF applications can be installed by the AMM onto ALEOS devices if AAF functionality has been enabled on those devices.

To enable AAF and install AAF applications to ALEOS devices:

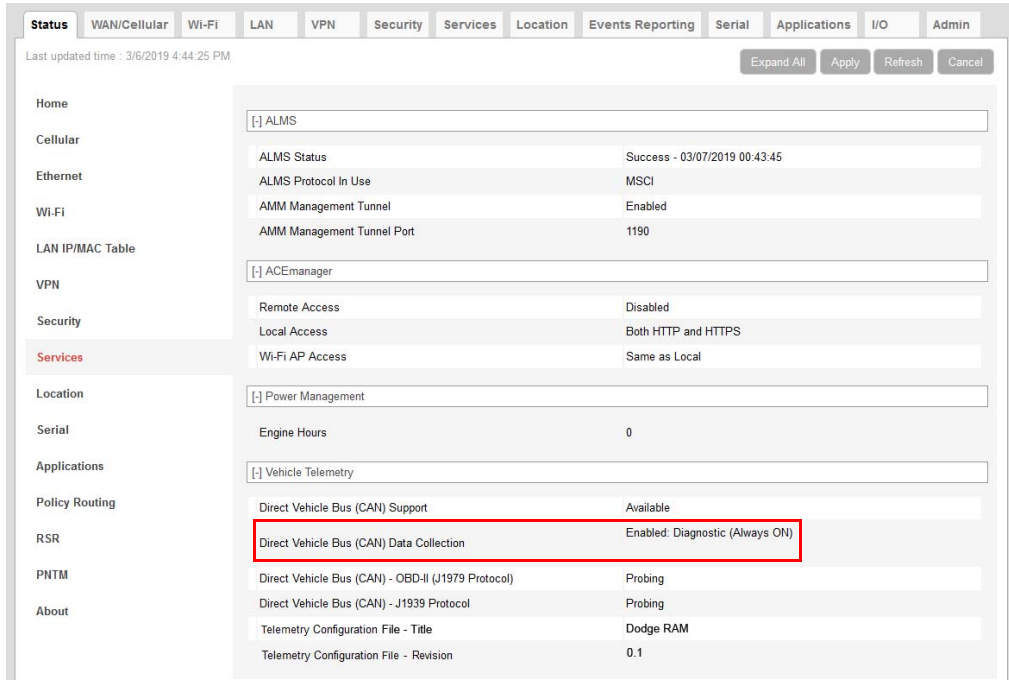
1. Select the device(s) in the Gateway tree.
2. Enable AAF by setting MSCIID 10250 to 1 for those device(s). This can be done using the procedure described in “Configuring Device-Specific Parameters for ALEOS Configurations from the AMM” (see the AMM Operation and Configuration Guide) or by manually setting it in the device’s msciconfig file.
3. Once the configuration is applied to the gateway, wait for the gateway to reboot, navigate to Config > Deploy > Deploy, and ensure the device is in Config confirmed state.
4. Install the AMMER application on the device: On the Software Distribution screen, select your device(s) and click Upgrade Application(s). The device should be listed in the “Affected Gateways” list in the distribution wizard indicating a successful installation.
5. Repeat Step 4 to install AVTC.

Using ACEmanager

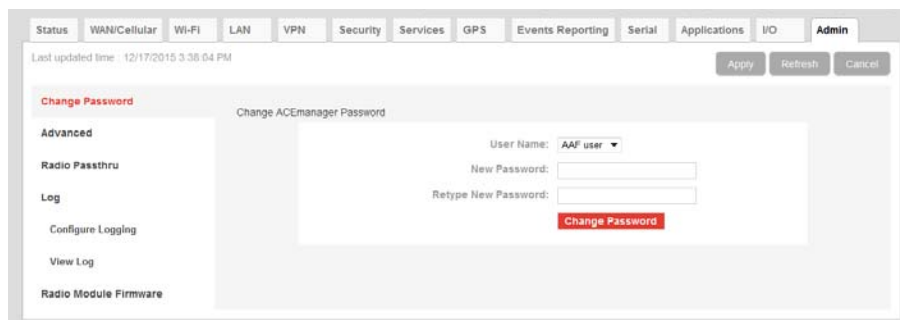
Note: Sierra Wireless does not recommend using ACEmanager to install AVTC. You may prefer to use ACEmanager for a one-time AVTC installation on a single device for testing and evaluation.

Installing AVTC using ACEmanager:

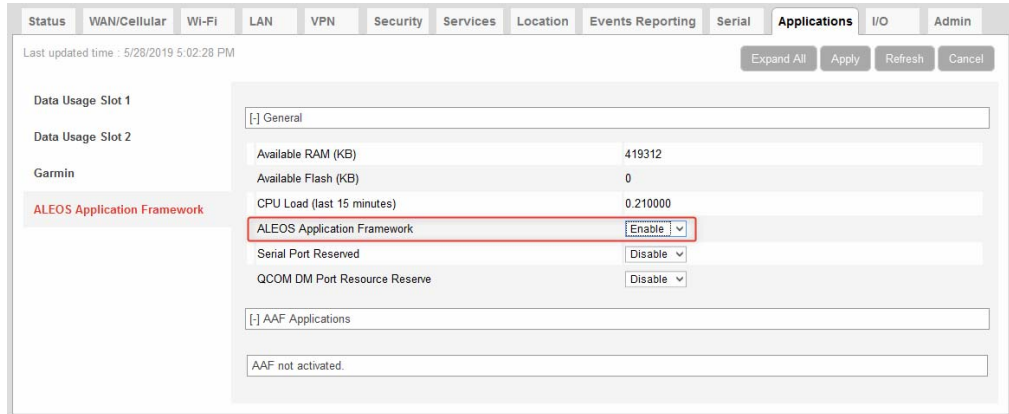
1. Ensure Direct Vehicle Bus (CAN) Data Collection is enabled. In ACEmanager, see Status > Services > Direct Vehicle Bus (CAN) Data Collection.



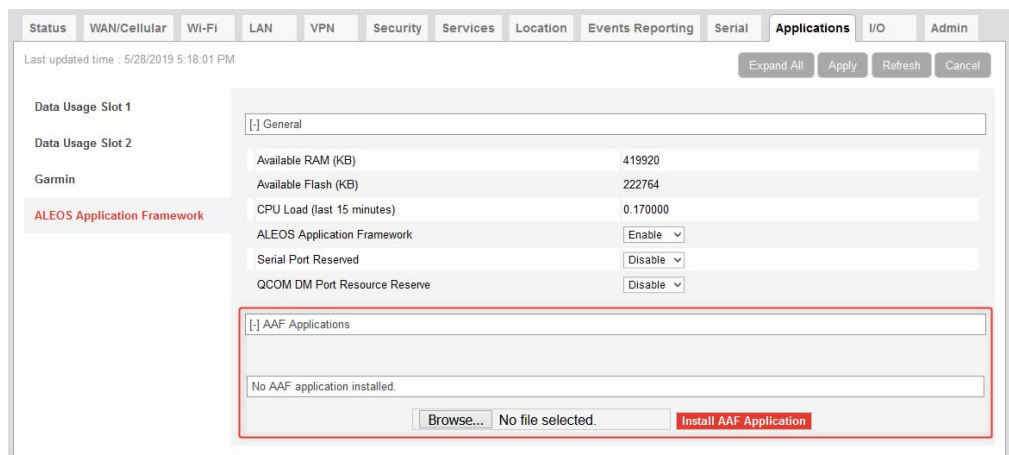
- a. If Direct Vehicle Bus (CAN) Data Collection is not enabled, go to Services > Vehicle Telemetry and enable it.
2. Create an AAF password. In ACEmanager, go to Admin > Change Password and select **AAF user** under Username.



3. Enable ALEOS Application Framework. In ACEmanager, go to Applications > ALEOS Application Framework.



4. On the same page under **AAAF Applications**, install AVTA.



5. On the same page, install AVTC.

Running AVTC

Once AVTC is installed, the ALEOS telemetry system (both internal and in AVTA and AMMER) detects the vehicle's VIN and selects the appropriate configuration. Any proprietary data from the vehicle will be reported without any further action.

You can view the current telemetry configuration file and revision in ACEmanager, as shown in [Figure 4](#).

The screenshot shows the ACEmanager web interface. The 'Services' tab is selected in the left-hand navigation menu. The main content area displays several configuration sections, each with a title and a table of settings. A red rectangular box highlights the 'Telemetry Configuration File' section, which contains two rows: 'Telemetry Configuration File - Title' with the value 'Dodge RAM' and 'Telemetry Configuration File - Revision' with the value '0.1'.

[-] ALMS	
ALMS Status	Success - 03/07/2019 00:43:45
ALMS Protocol In Use	MSCI
AMM Management Tunnel	Enabled
AMM Management Tunnel Port	1190

[-] ACEmanager	
Remote Access	Disabled
Local Access	Both HTTP and HTTPS
Wi-Fi AP Access	Same as Local

[-] Power Management	
Engine Hours	0

[-] Vehicle Telemetry	
Direct Vehicle Bus (CAN) Support	Available
Direct Vehicle Bus (CAN) Data Collection	Enabled: Diagnostic (Always ON)
Direct Vehicle Bus (CAN) - OBD-II (J1979 Protocol)	Probing
Direct Vehicle Bus (CAN) - J1939 Protocol	Probing
Telemetry Configuration File - Title	Dodge RAM
Telemetry Configuration File - Revision	0.1

Figure 4: Telemetry Configuration File Title and Revision

Supported Vehicles and Vehicle Parameters

[Table 1](#) lists the parameters that AVTC makes available for reporting.

Note that Airlink CAN OBD-II interface is only supported on vehicles 2008 and later. CAN support should work on vehicles 2006 and later, but Sierra Wireless does not guarantee it.

Table 1: Supported vehicles and vehicle parameters

Vehicle & Model	Model Year	Dash Odometer	Seatbelt	Tire Pressures
Dodge RAM	Pre-2018	Y	Y	
Dodge Charger	Pre-2018	Y	Y	
Chevrolet Equinox	2018-	Y	Y	
Chevrolet Equinox	Pre-2018	Y	Y	
Chevrolet Silverado	All ^a	Y	Y	
Ford Escape	All ^a	Y	Y	
Ford Explorer	Pre-2015	Y	Y	
Ford Explorer	2015-	Y	Y	Y
Ford F-150	Pre-2015	Y	Y	
Ford F-150	2015-	Y	Y	Y
Ford F-250	Pre-2015 ^c	Y	Y	
Ford F-250	2015-	Y	Y	Y
Ford Taurus	2016-	Y	Y	Y
Ford Transit	pre-2020	Y	Y	
GMC Canyon	All ^a	Y	Y	
GMC Sierra	Pre-2012	Y	Y	
GMC Sierra	2012-	Y	Y	
Toyota Landcruiser (Aus) ^b	2011 ^c		Y	
Toyota Landcruiser Prado (Aus) ^b	2011 ^c		Y	

- Subject to further testing. Available telemetry parameters are usually consistent across model years.
- "Other" parameters are available for this model with the release of AVTA 1.2.0. See [Table 2](#) on page 10.
- Presumed to work for other years (subject to further testing).

Other Vehicle Parameters

The parameters in [Table 2](#) will be reported to ALMS (with AVTA installed) or AMM (with AMMER 1.0.4 installed) when using AVTA 1.2.0 or later.

Table 2: MQTT/ATP reporting conventions for “Other” parameters

Vehicle Supported	Parameter	Report Item Name	Values
Toyota Landcruiser/ Landcruiser Prado	Driver Door State	atp.Door-Driver	0, 1
	Passenger Door State	atp.Door-Pass	0, 1
	Rear Driver-side Door State	atp.Door-RDriver	0, 1
	Rear Passenger-side Door State	atp.Door-RPass	0, 1
	Tailgate State	atp.Door-Tail	0, 1
	Lights (general)	atp.Lights	0, 1
	Parking Lights	atp.Lights-Park	0, 1
	Headlights	atp.Lights-Head	0, 1
	Lights—High Beam	atp.Lights-Hi	0, 1
	Parking Brake	atp.ParkBrake	0, 1
	Cruise Control State	atp.Cruise	0, 1
	Brake Pedal %	atp.BrakePercent	0–100
	Throttle %	atp.tpos	0–100

Document History

Revision number	Release date	Changes
1	May 2019	New document
2	August 2019	Updated Table 1 for release 1.0.1
3	November 2019	Added Table 2 for AVTA release 1.2.0
4	November 2020	Updated Table 1 and Table 2 for AVTC release 1.1.1
5	August 2021	Updated Table 1 for AVTC release 1.2.1

Legal Notice

Limitation of Liability

The information in this document is subject to change without notice and does not represent a commitment on the part of Sierra Wireless. SIERRA WIRELESS AND ITS AFFILIATES SPECIFICALLY DISCLAIM LIABILITY FOR ANY AND ALL DIRECT, INDIRECT, SPECIAL, GENERAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUE OR ANTICIPATED PROFITS OR REVENUE ARISING OUT OF THE USE OR INABILITY TO USE ANY SIERRA WIRELESS PRODUCT, EVEN IF SIERRA WIRELESS AND/OR ITS AFFILIATES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR THEY ARE FORESEEABLE OR FOR CLAIMS BY ANY THIRD PARTY.

Notwithstanding the foregoing, in no event shall Sierra Wireless and/or its affiliates aggregate liability arising under or in connection with the Sierra Wireless product, regardless of the number of events, occurrences, or claims giving rise to liability, be in excess of the price paid by the purchaser for the Sierra Wireless product.

Patents

This product may contain technology developed by or for Sierra Wireless Inc. This product is manufactured or sold by Sierra Wireless Inc. or its affiliates under one or more patents licensed from MMP Portfolio Licensing.

Copyright

© 2021 Sierra Wireless. All rights reserved.

Trademarks

Sierra Wireless[®], AirLink[®], AirVantage[®] and the Sierra Wireless logo are registered trademarks of Sierra Wireless.

Windows[®] and Windows Vista[®] are registered trademarks of Microsoft Corporation.

Macintosh[®] and Mac OS X[®] are registered trademarks of Apple Inc., registered in the U.S. and other countries.

Other trademarks are the property of their respective owners.

Contact Information

Sales information and technical support, including warranty and returns	Web: sierrawireless.com/company/contact-us/ Global toll-free number: 1-877-687-7795 6:00 am to 5:00 pm PST
Corporate and product information	Web: sierrawireless.com