J1939 Router

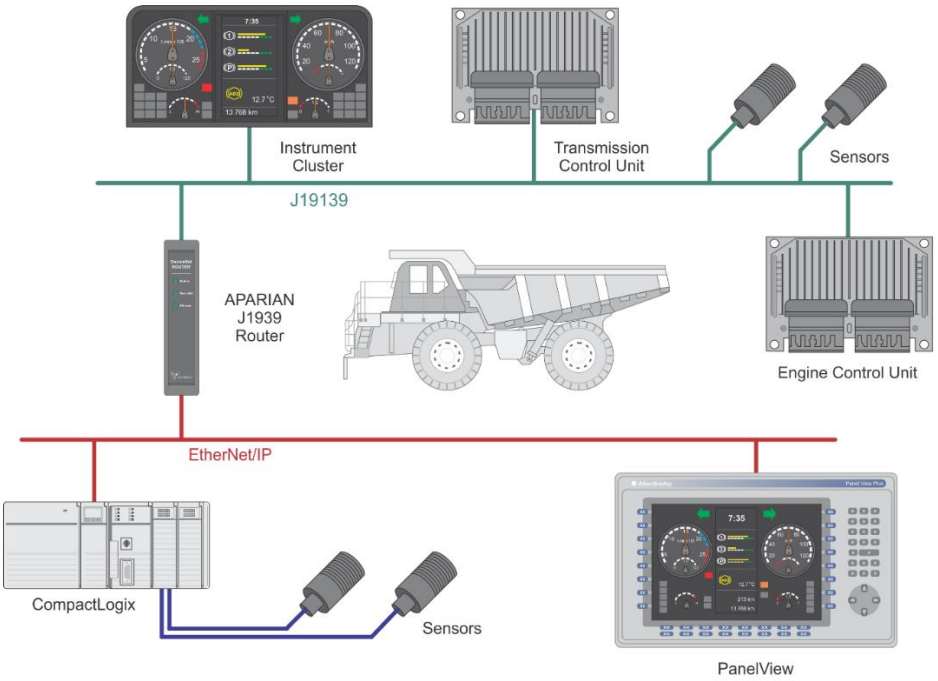
Quick Start Guide

A-J1939

NOTE: Before installing, configuring, operating, or maintaining Aparian products, please review this information and the information located on www.aparian.com for the latest software, documentation, and installation files specific to your Aparian product.

INTRODUCTION

This quick start guide provides an basic overview of the installation, operation, and diagnostics of the Aparian J1939 Router module. The J1939 Router provides intelligent data routing between either EtherNet/IP and the SAE J1939 CAN bus network. This allows the user to integrate J1939 devices into a Rockwell Logix platform (e.g. ControlLogix or CompactLogix) with minimal effort. The J1939 Router provides auto extraction and scaling of SPNs for standard SAE defined PGNs. These SPNs can then be mapped to Logix UDTs Tags which can also be automatically generated by the Slate software. This allows the user to create a J1939 Router project with all the required PGNs and then export a Logix L5X file which contains all the required Tags and UDTs for that specific J1939 Router project. This L5X file can be imported into Logix removing the hassle of creating UDTs for the numerous PGNs.

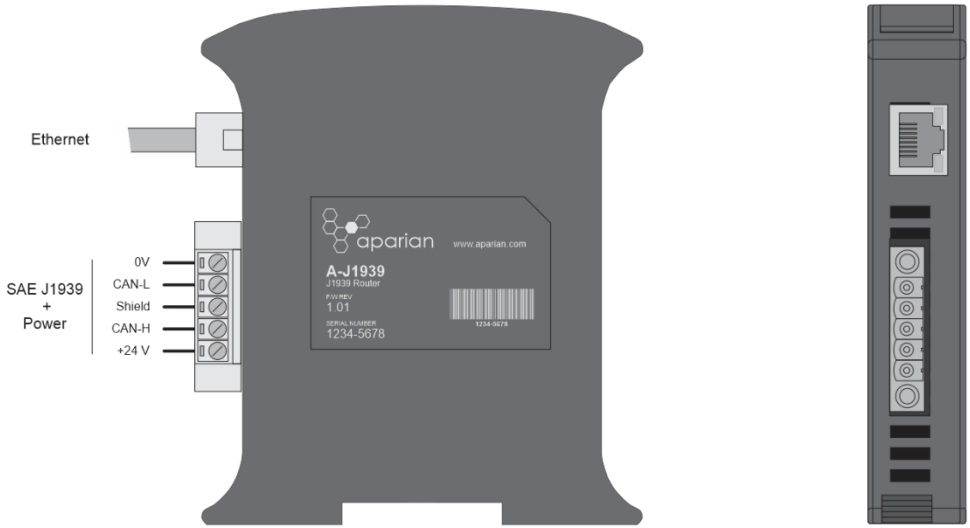


REQUIRED SOFTWARE

The J1939 Router requires Aparian Slate software to setup and configure. The software installation can be found at www.aparian.com/software/slate.

MODULE INSTALLATION

The module has two ports at the bottom of the enclosure as shown in the figure below. The ports are used for Ethernet and SAE J1939. The 5-way connector also provides power to the module.



LED	Description
Ok	The module Ok LED will provide information regarding the system-level operation of the module. If the LED is red then the module is not operating correctly. For example, if the module application firmware has been corrupted or there is a hardware fault the module will have a red Module LED. If the LED is green then the module has booted and is running correctly.
Eth	The Ethernet LED will light up when an Ethernet link has been detected (by plugging in a connected Ethernet cable). The LED will flash every time traffic was detected.
Act	The activity LED is used for indicating successful (green) or failed (red) routing transactions.

ELECTRICAL AND ENVIRONMENTAL

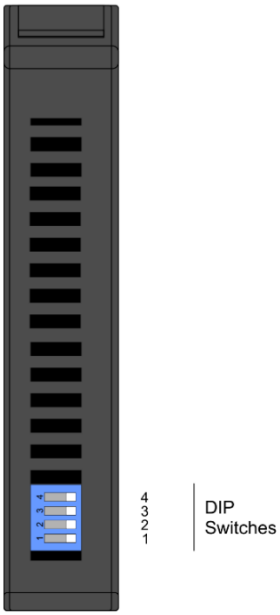
Specification	Rating
Power requirements	Input: 10 – 28V DC
Power consumption	1.7 W (Max.) Current: 70 mA @ 24 V
Temperature	-20 – 70 °C

NETWORK SETUP

1. Launch the Aparian Slate Configuration Software. Select the *DHCP Server* under the *Tools* menu. DHCP is enabled as factory default.
2. Click the *Assign* button and set the IP Address. Row turns green if successful.
3. Additional configuration can be set using the *Target Browser* also under the *Tools* menu. Right click on the module in the Target Browser a select *Port Configuration*.

DIP SWITCHES AND CAN BUS TERMINATION

The module provides four DIP switches at the top of the enclosure as shown in the top view figure below.



DIP Switch	Description
DIP Switch 1	Used to force the module into “Safe Mode”. When in “Safe Mode” the module will not load the application firmware and will wait for new firmware to be downloaded. This should only be used in the rare occasion when a firmware update was interrupted at a critical stage.
DIP Switch 2	This will force the module into DHCP mode which is useful when the user has forgotten the IP address of the module.
DIP Switch 3	Reserved
DIP Switch 4	Applies the 120Ω terminating resistor across the CAN network (switched between Can-H and Can-L). **NOTE: When the module is at the start or the end of the J1939 network the terminator must be switched on.**

NORTH AMERICAN HAZARDOUS LOCATION APPROVAL

SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C AND D HAZARDOUS LOCATIONS, OR NONHAZARDOUS LOCATIONS ONLY.

WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOW TO BE FREE OF IGNITABLE CONCENTRATIONS.

WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENT MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.



For professional users in the European Union

If you wish to discard electrical and electronic equipment (EEE), please contact your dealer or supplier for further information.



WARNING – Cancer and reproductive harm – www.p65warnings.ca.gov

ADDITIONAL INFORMATION

The following resources contain additional information that can assist the user with the module installation and operation.

Resource	Link
Slate Installation	http://www.aparian.com/software/slate
J1939 Router User Manual J1939 Router Datasheet Example Code & UDTs	http://www.aparian.com/products/j1939Router
Ethernet wiring standard	www.cisco.com/c/en/us/td/docs/video/cds/cde/cde205_220_420/installation/guide/cde205_220_420_hig/Connectors.html
SAE J1939 Standards	http://www.sae.org/standardsdev/groundvehicle/j1939a.htm
Slate Installation	http://www.aparian.com/software/slate

SUPPORT

Technical support will be provided via the Web (in the form of user manuals, FAQ, datasheets etc.) to assist with installation, operation, and diagnostics.

For additional support the user can use either of the following:

Contact Us web link	https://www.prosoft-technology.com/Services-Support/Customer-Support
Support email	support@prosoft-technology.com