6 CAN ISOLATOR / ROUTER WITH ETHERNET

USER MANUAL

P/N: AX141600

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VERSION HISTORY

Version	Date	Author	Modification
1.0.0	Sep. 28, 2020	Antti Keränen	Initial Draft
1.0.1	Oct. 19, 2020	Antti Keränen	Block diagram added, configuration CAN port numbers vs. real port numbering mapping added, CAN interface filter configuration description updated.
1.0.2	Dec. 11, 2020	Antti Keränen	Built-in fuse functionality description updated, datasheet section updated.
1.0.3	Sep. 14, 2023	Kiril Mojsov	Performed Legacy Updates
1.0.4	Jun. 27, 2024	M Ejaz	Changed pin 3 of CAN connectors to Ground Added connector label table Changed “Output” CAN to “Control” CAN Updated dimensional drawing Corrected block diagram to remove CAN 1 “output” Updated vibration and shock standards

ACCRONYMS

ACK	Positive Acknowledgement (from SAE J1939 standard)
BATT +/-	Battery positive (a.k.a. Vps) or Battery Negative (a.k.a. GND)
DM	Diagnostic Message (from SAE J1939 standard)
DTC	Diagnostic Trouble Code (from SAE J1939 standard)
EA	The Axiomatic Electronic Assistant (A Service Tool for Axiomatic ECUs)
ECU	Electronic Control Unit (from SAE J1939 standard)
GND	Ground reference (a.k.a. BATT-)
I/O	Inputs and Outputs
IP	Internet Protocol
MAC	Media Access Control
MAP	Memory Access Protocol
NAK	Negative Acknowledgement (from SAE J1939 standard)
PDU1	A format for messages that are to be sent to a destination address, either specific or global (from SAE J1939 standard)
PDU2	A format used to send information that has been labeled using the Group Extension technique, and does not contain a destination address.
PGN	Parameter Group Number (from SAE J1939 standard)
PropA	Message that uses the Proprietary A PGN for peer-to-peer communication
PropB	Message that uses a Proprietary B PGN for broadcast communication
SPN	Suspect Parameter Number (from SAE J1939 standard)
TCP/IP	Transmission Control Protocol / Internet Protocol
TP	Transport Protocol
Vps	Voltage Power Supply (a.k.a. BATT+)

Note:

An Axiomatic Electronic Assistant KIT may be ordered as P/N: AX070502 or AX070506K

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REFERENCES

J1939	Recommended Practice for a Serial Control and Communications Vehicle Network, SAE, April 2011
J1939/21	Data Link Layer, SAE, December 2010
J1939/71	Vehicle Application Layer, SAE, March 2011
J1939/73	Application Layer-Diagnostics, SAE, February 2010
J1939/81	Network Management, SAE, May 2003
TDAX141600	Technical Datasheet, 6CAN to Ethernet Converter, Axiomatic Technologies
UMAX07050x	User Manual, Axiomatic Electronic Assistant and USB-CAN, Axiomatic Technologies

This document assumes the reader is familiar with the SAE J1939 standard. Terminology from the standard is used, but not described in this document.

NOTE: This product is supported by Axiomatic Electronic Assistant V<TBD> and higher

1. OVERVIEW OF CONTROLLER

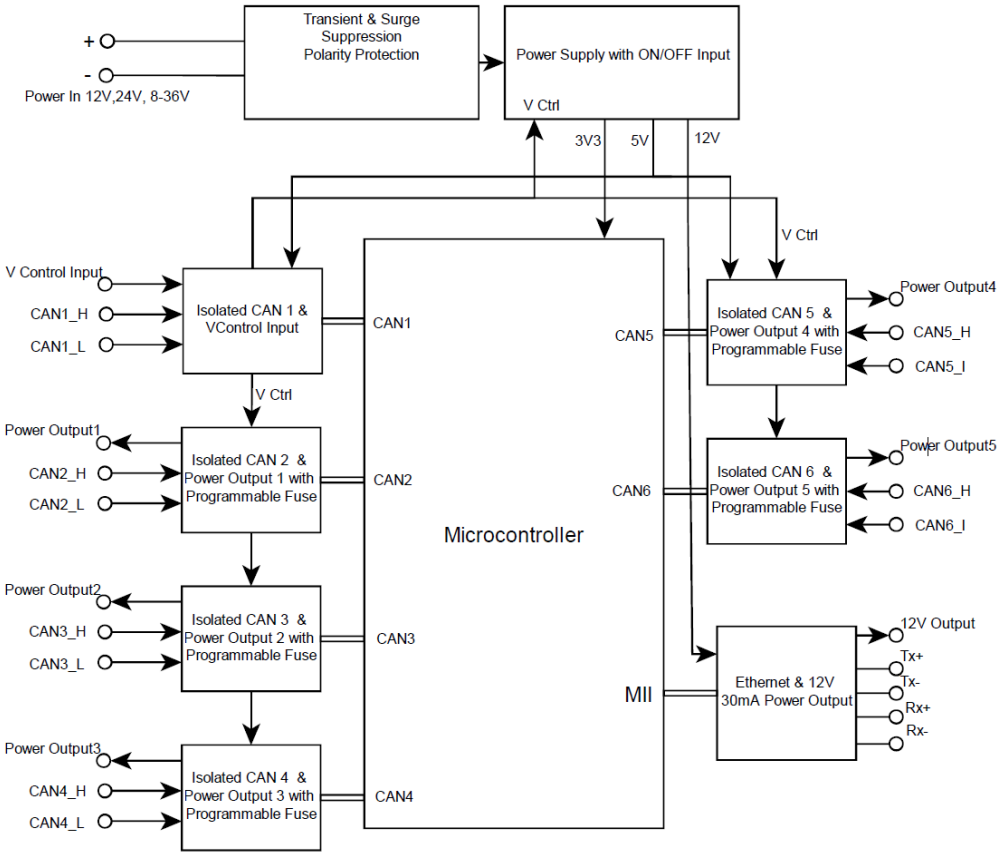


Figure 1 – Block diagram of the 6 CAN Isolator/Router with Ethernet

The 6 CAN Isolator/Router with Ethernet (later 6CAN-ENET) electronic control unit (ECU) is a device that forwards CAN messages between the 6 CAN ports based on a custom routing configuration. The configuration can be done using a web browser and the built-in web server running on the 6CAN-ENET device.

The Axiomatic Electronic Assistant is used to configure the network parameters of the 6CAN-ENET ECU. The configuration of the rest of the parameters can be done via the web browser interface (port 80).

The Input CAN ports have a Power Output that has a resettable fuse. The fuse threshold is fixed to 1A. CAN notification messages on fuse trip event can be configured using the web browser configuration interface.

All 6 CAN interfaces have a built-in 120 Ohm termination resistor that can be enabled in the configuration. By default, all termination resistors are disabled, and external resistors need to be used.

There is a bi-color LED indicator next to each CAN interface. The LED shows the fuse status. Green LED blinks on reception and transmission of CAN frames when the fuse is intact. When the fuse is blown, the red LED blinks on a constant rate.

2. INSTALLATION INSTRUCTIONS

2.1. Dimensions and Pinout

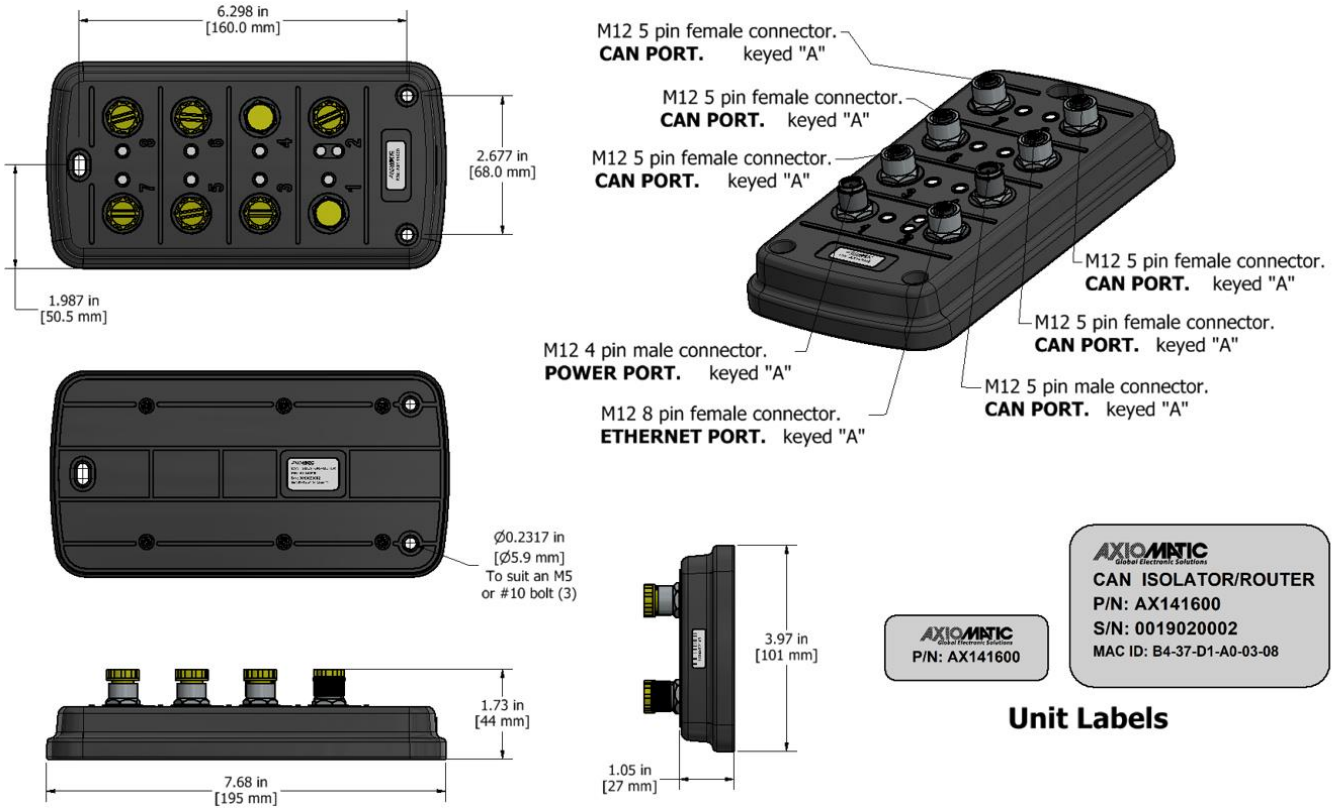


Figure 2 – Controller Dimensions and Label

Power port (connector #1)		Ethernet port (connector #2)		Input CAN ports (connectors #3, #5…#8)		Output CAN port (connector #4)	
Pin #	**Function**	**Pin #**	**Function**	**Pin #**	**Function**	**Pin #**	**Function**
1	Battery +	1	Power Input	1	Not used	1	Not used
2	Battery +	2	Power Ground	2	Output	2	V Ctrl Signal
3	Battery -	3	Power Ground	3	Ground	3	Ground
4	Battery -	4	Ethernet TX -	4	CAN H	4	CAN H
		5	Ethernet RX +	5	CAN L	5	CAN L
		6	Ethernet TX +				
		7	Power Input				
		8	Ethernet RX -				

Table 1 – AX141600 Connector Pinout

3. OVERVIEW OF J1939 FEATURES

By default only Output CAN Port (connector #4) supports J1939 messaging and Axiomatic EA access.

The software was designed to provide flexibility to the user with respect to messages sent from the ECU by providing:

- Configurable ECU Instance in the NAME (to allow multiple ECUs on the same network)
- Configurable PGN and Data Parameters
- Configurable Diagnostic Messaging Parameters, as required

3.1. Introduction to Supported Messages

The ECU is compliant with the standard SAE J1939, and supports following PGNs from the standard.

From J1939-21 – Data Link Layer

• Request		59904	0x00EA00
• Acknowledgement		59392	0x00E800
• Transport Protocol – Connection Management		60416	0x00EC00
• Transport Protocol – Data Transfer Message		60160	0x00EB00
• Proprietary B	from	65280	0x00FF00
	to	65535	0x00FFFF

From J1939-73 – Diagnostics

• DM1 – Active Diagnostic Trouble Codes	65226	0x00FECA
• DM2 – Previously Active Diagnostic Trouble Codes	65227	0x00FECB
• DM3 – Diagnostic Data Clear/Reset for Previously Active DTCs	65228	0x00FECC
• DM11 – Diagnostic Data Clear/Reset for Active DTCs	65235	0x00FED3

From J1939-81 – Network Management

• Address Claimed/Cannot Claim	60928	0x00EE00
• Commanded Address	65240	0x00FED8

From J1939-71 – Vehicle Application Layer

• ECU Identification Information	64965	0x00FDC5
• Software Identification	65242	0x00FEDA
• Component Identification	65259	0x00FEEB

None of the application layer PGNs are supported as part of the default configurations, but they can be selected as desired for transmit function blocks.

Setpoints are accessed using standard Memory Access Protocol (MAP) with proprietary addresses. The Axiomatic Electronic Assistant (EA) allows for quick and easy configuration of the unit over CAN network.

3.2. NAME, Address and Identification Information

The 6CAN-ENET ECU has the following default for the J1939 NAME. The user should refer to the SAE J1939/81 standard for more information on these parameters and their ranges.

Arbitrary Address Capable	Yes
Industry Group	0, Global
Vehicle System Instance	0
Vehicle System	0, Non-specific system
Function	25, Axiomatic Protocol Converter
Function Instance	22, Axiomatic AX141600
ECU Instance	0, First Instance
Manufacture Code	162, Axiomatic Technologies
Identity Number	Variable, uniquely assigned during factory programming for each ECU

The ECU Instance is a configurable setpoint associated with the NAME. Changing this value will allow multiple ECUs of this type to be distinguishable from one another when they are connected on the same network.

The default value of the “ECU Address” setpoint is 128 (0x80), which is the preferred starting address for self-configurable ECUs as set by the SAE in J1939 tables B3 and B7. The Axiomatic EA supports the selection of any address between 0 and 253. ***It is user’s responsibility to select an address that complies with the standard***. The user must also be aware that since the unit is arbitrary address capable, if another ECU with a higher priority NAME contends for the selected address, the 10 Analog input will continue select the next highest address until it finds one that it can claim. See J1939/81 for more details about address claiming.

ECU Identification Information

PGN 64965		ECU Identification Information	-ECUID
Transmission Repetition Rate:		On request	
Data Length:		Variable	
Extended Data Page:		0	
Data Page:		0	
PDU Format:		253	
PDU Specific:		197 PGN Supporting Information:	
Default Priority:		6	
Parameter Group Number:		64965 (0x00FDC5)	
Start Position	Length	Parameter Name	SPN
a	Variable	ECU Part Number, Delimiter (ASCII “*”)	2901
b	Variable	ECU Serial Number, Delimiter (ASCII “*”)	2902
c	Variable	ECU Location, Delimiter (ASCII “*”)	2903
d	Variable	ECU Type, Delimiter (ASCII “*”)	2904
e	Variable	ECU Manufacturer Name, Delimiter (ASCII “*”)	4304
(a)*(b)*(c)*(d)*(e)*			

Software Identifier

PGN 65242		Software Identification	-SOFT
Transmission Repetition Rate:		On request	
Data Length:		Variable	
Extended Data Page:		0	
Data Page:		0	
PDU Format:		254	
PDU Specific:		218 PGN Supporting Information:	
Default Priority:		6	
Parameter Group Number:		65242 (0x00FEDA)	
Start Position	Length	Parameter Name	SPN
1	1 Byte	Number of software identification fields	965
2-n	Variable	Software identification(s), Delimiter (ASCII “*”)	234

Byte 1 is set to 5, and the identification fields are as follows.

(Part Number)*(Version)*(Date)*(Owner)*(Description)

The Axiomatic EA shows all this information in its “General ECU Information” page. *Note: The information provided in the Software ID is available for any J1939 service tool which supports the PGN -SOFT*

Component Identification

PGN 65259		Component Identification	-CI
Transmission Repetition Rate:		On request	
Data Length:		Variable	
Extended Data Page:		0	
Data Page:		0	
PDU Format:		254	
PDU Specific:		235 PGN Supporting Information:	
Default Priority:		6	
Parameter Group Number:		65259 (0x00FEEB)	
Start Position	Length	Parameter Name	SPN
a	1-5 Byte	Make, Delimiter (ASCII “*”)	586
b	Variable	Model, Delimiter (ASCII “*”)	587
c	Variable	Serial Number, Delimiter (ASCII “*”)	588
d	Variable	Unit Number (Power Unit), Delimiter (ASCII “*”)	233
(a)*(b)*(c)*(d)*(e)*			

4. WEB BROWSER BASED CONTROLLER CONFIGURATION

The 6CAN-ENET controller supports configuration of the data routing parameters from Ethernet port using a standard web browser. The 6CAN-ENET controller has a web server running on TCP port 80.

4.1. CAN Port Numbering in Web Configuration

The port numbers in the plastic housing correspond to the CAN interface numbers in web configuration interface in the following manner. CAN port #1 (connector #4) supports Axiomatic EA access.

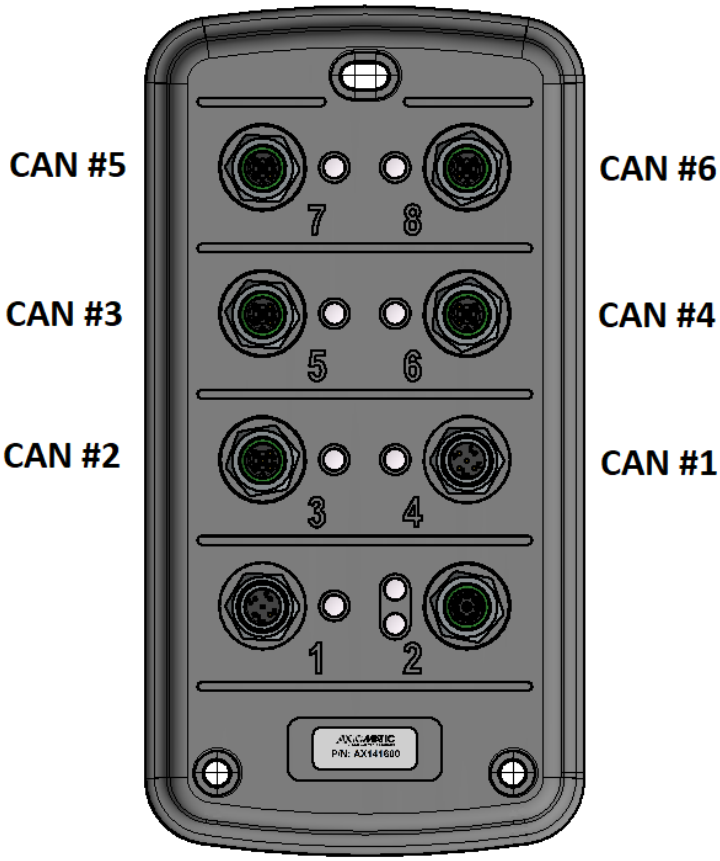
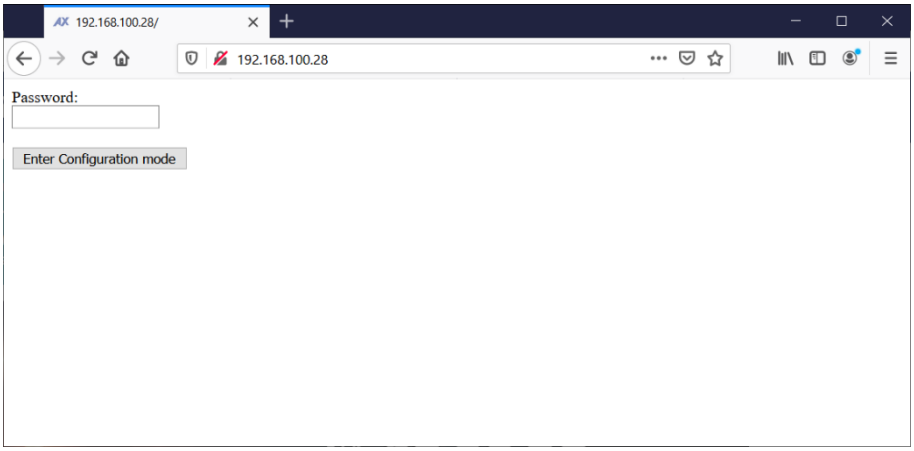


Figure 3 – CAN Port Mapping

4.2. Parameter Editing

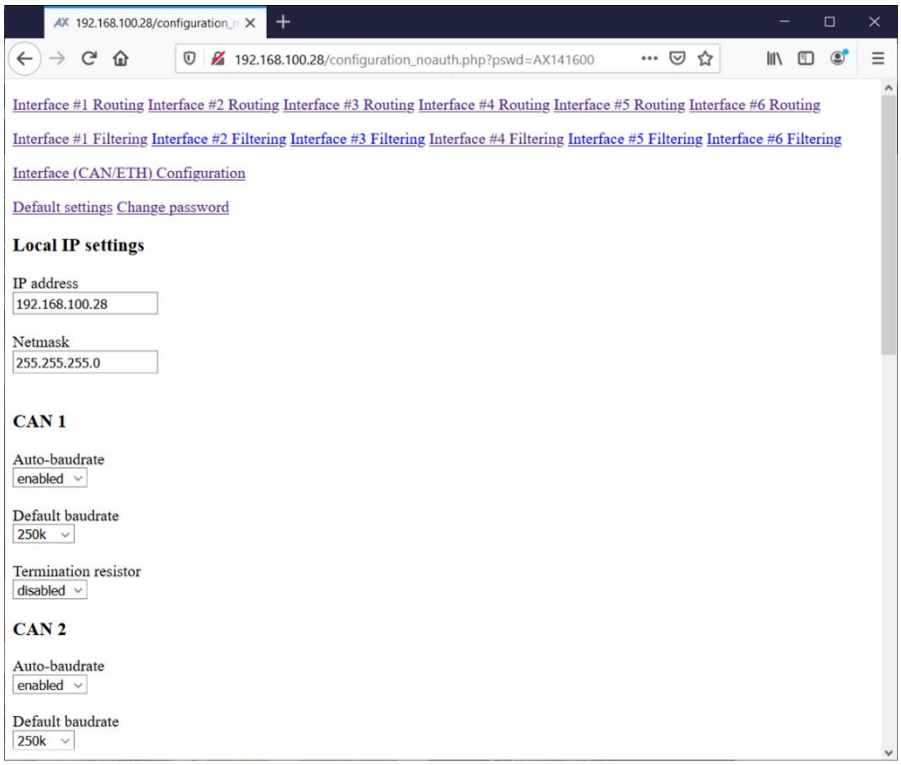
<configured ip>/config

The configuration page asks for a password. The default password is '**AX141600**' (this is case sensitive).



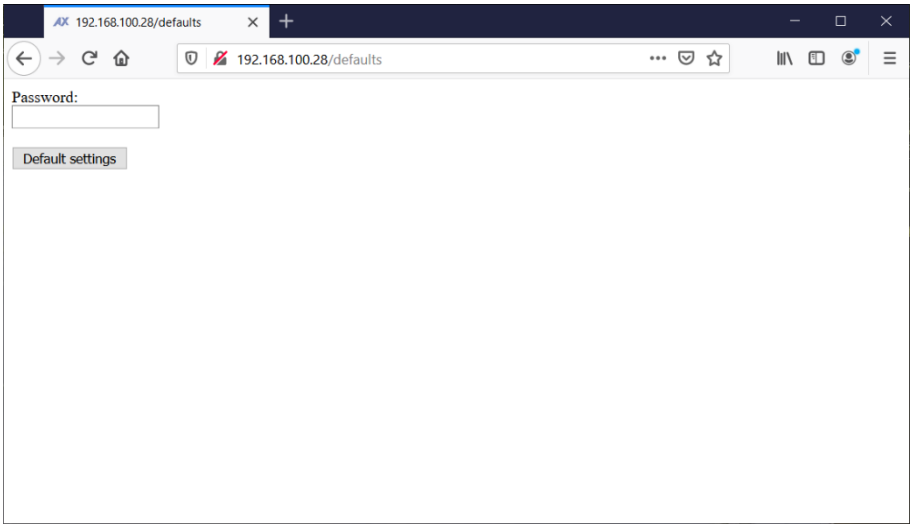
When the correct password is entered, the configuration page is opened. The settings can be applied by clicking the button at the bottom of the page. In case the user does not want to change settings, the connection can be closed.

The configuration page allows the user to modify the device's IP address, netmask and the main configuration parameters for the CAN interfaces. The CAN configuration parameters include the default baud rate to use, whether to enable the built-in 120 Ohm termination resistor and auto-baud rate capability.



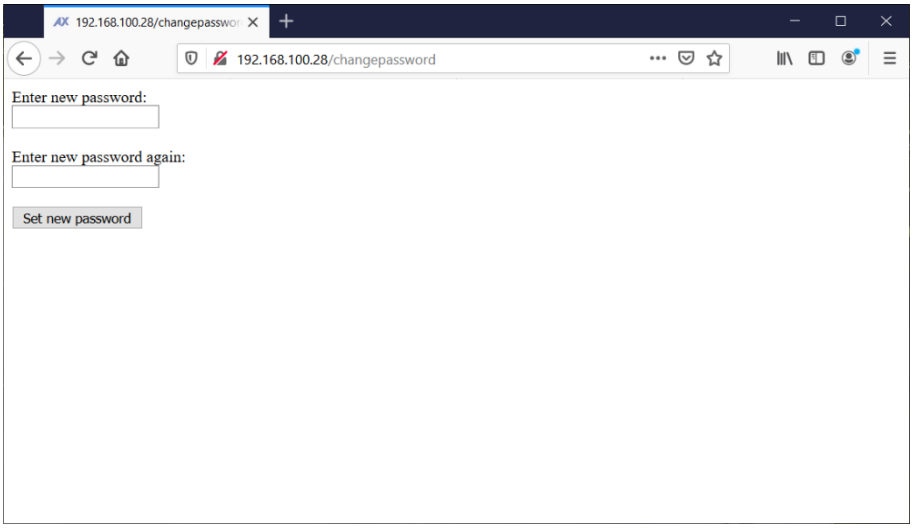
<configured ip>/defaults

The controller can be reverted to default settings using the ‘/defaults’ page. The default password is ‘**AX141600**’ (also case sensitive).



<configured ip>/changepassword

The configuration password can be changed using the '/changepassword' page. The default password is '**AX141600**' (also case sensitive).



<configured ip>/filtering1

The data filtering configuration is done for each interface separately. The filter is used for selecting which CAN frames will be received by the particular CAN interface. All received CAN frames that pass the reception filter will be forwarded to the data routing module.

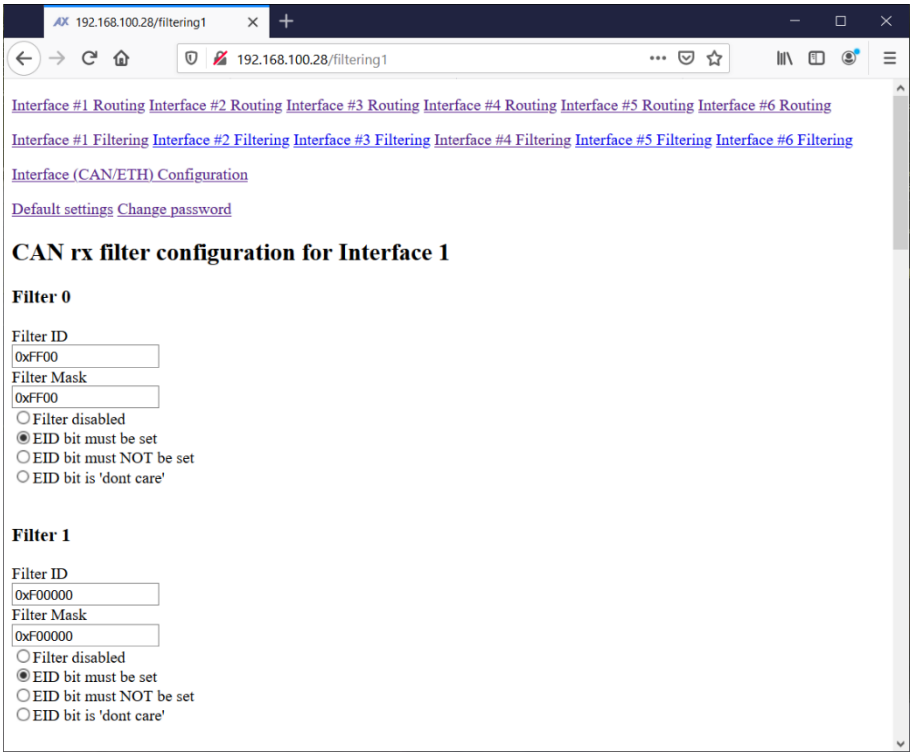
The configured CAN ID filter will be assigned to the CAN interface's acceptance filter registers. No additional software filtering will be done in the message reception. However, the data routing module supports software filtering for selecting the frames that will be routed.

In case all filters are disabled, no CAN frames will be accepted.

For receiving all frames (no filtering at all), Filter ID and Filter Mask need to be configured as 0x0 and EID bit set as "don't care".

The CAN Filter ID defines the 29-bit extended or 11-bit standard frame ID. The Filter Mask bit '1' forces the compare, '0' marks the bit as 'don't care'. To configure a filter for receiving all possible frames, the ID and Mask should be set to '0' and option for EID bit as 'don't care'.

By default, the Output CAN Interface has default J1939 CAN filtering set. This is needed for accessing the device using the Axiomatic EA. Please note that only Output CAN Interface (connector #4) supports EA access.



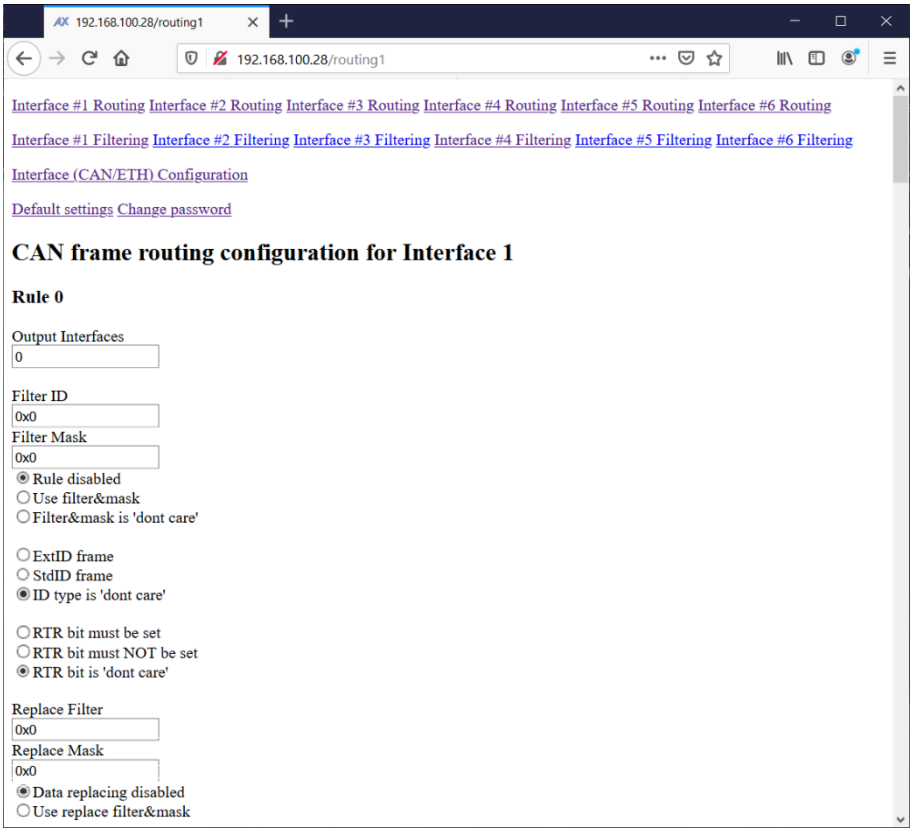
<configured ip>/routing1

The data routing configuration is done for each interface separately. The routing is done for all frames that pass the reception filtering.

Each of the rules have a list of Output Interfaces, Filter ID and Mask (software filter) and Data replacing options. The data replacing is supported for the CAN Frame ID bits.

The Output Interfaces should be entered as comma separated list with no spaces. Filter ID and Mask are identical to the hardware filter configuration, these two settings are used in a software filter for selecting the particular frames that will be routed to the configured Output Interfaces.

The Replace Filter and Mask can be used for example to modify the Source Address, PGN and/or Priority bits of the J1939 frame. The data replacing function is applied for all frames that pass the software filter and will be done before routing the frame to the configured output interfaces.



To forward all frames with a PGN 0xFF01 to interfaces 2 & 3 and modify the forwarded PGN to 0xFF82, the following setup would need to be used:

Output Interfaces: **2,3**
Filter ID: **0xFF0100**
Filter Mask: **0xFFFF00**
'**Use filter&mask**', '**ExtID frame**' and '**RTR bit is don't care**' selected
Replace Filter: **0xFF8200**
Replace Mask: **0xFFFF00**
'**Use replace filter&mask**' selected

<configured ip>/fullconfig

The 6CAN-ENET supports the use of cURL (or equivalent) for full settings file download and upload.

The current configuration can be downloaded to PC using command:

```
curl --http0.9 -o "./config.file" "http://192.168.100.28/fullconfig"
```

The saved configuration can be uploaded to the 6CAN-ENET device:

```
curl --http0.9 --upload-file "./config.file" "http://192.168.100.28/fullconfig"
```

The above examples were tested using Windows 10 and **curl-7.70.0-win64-mingw** available from https://curl.haxx.se/windows/

5. ECU SETPOINTS ACCESSED WITH THE AXIOMATIC ELECTRONIC ASSISTANT

This section describes in detail each setpoint, and their default and ranges. The setpoints are divided into setpoint groups as they are shown in the Axiomatic EA. For more information on how each setpoint is used by 6CAN-ENET, refer to the relevant section in this user manual.

EA access is supported only in CAN Interface #1 / Connector #4. Please see Figure 3 for details.

5.1. J1939 Setpoints

"**ECU Instance Number**" and "**ECU Address**" setpoints and their effect are defined in section 3.2.

Name	Range	Default	Notes
ECU Instance Number	0-7	0x00	Per J1939-81
ECU Address	0-253	0x80	Preferred address for a self-configurable ECU

Table 2 – J1939 Setpoints

If non-default values for the **"ECU Instance Number"** or **"ECU Address"** are used, they will be mirrored during a setpoint file flashing, and will only take effect once the entire file has been downloaded to the unit. After the setpoint flashing is complete, the unit will claim the new address and/or re-claim the address with the new NAME. If these setpoints are changing, it is recommended to close and re-open the CAN connection on the EA after the file is loaded so that only the new NAME and address appear in the J1939 CAN Network ECU list.

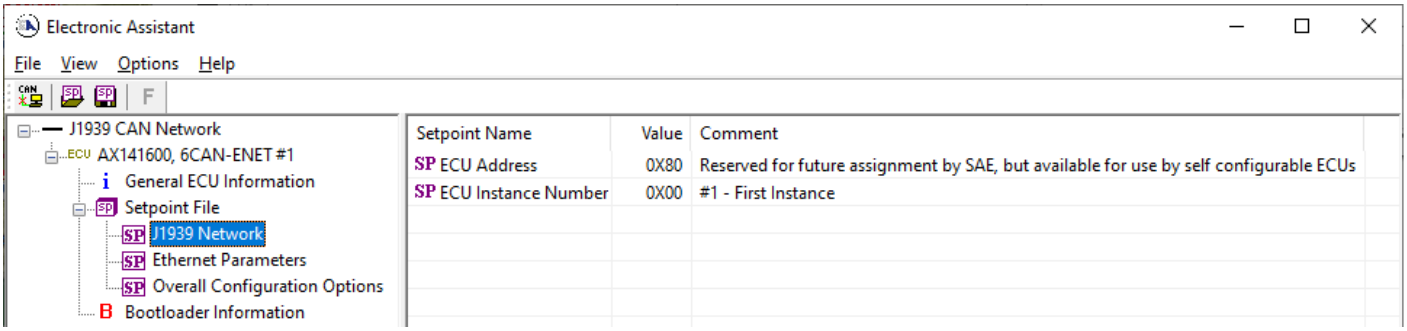


Figure 4 – Screen Capture of J1939 Setpoints

5.2. Ethernet Parameter Setpoints

The Ethernet parameters can be configured using the Axiomatic EA. A power cycle is needed for taking the new settings in use.

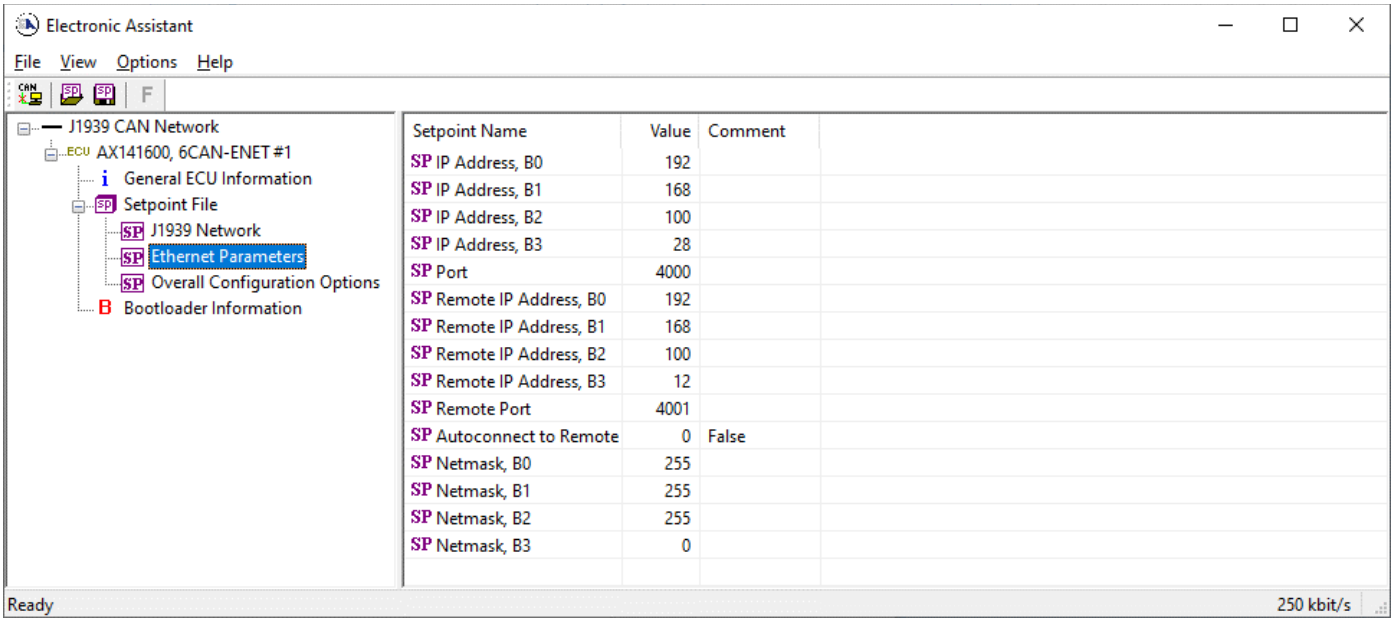


Figure 5 – Screen Capture of Ethernet Parameter Setpoints

Name	Range	Default	Notes
IP Address, B0	0…255	192	These settings define an IP address: 192.168.100.28
IP Address, B1	0…255	168	
IP Address, B2	0…255	100	
IP Address, B3	0…255	28	
Port	0…65535	4000	Default port for incoming TCP connections
Remote IP Address, B0	0…255	192	These settings define an IP address for remote connection: 192.168.100.12
Remote IP Address, B1	0…255	168	
Remote IP Address, B2	0…255	100	
Remote IP Address, B3	0…255	12	
Remote Port	0…65535	4001	Default port for remote TCP connection
Autoconnect to Remote	0, 1	0 – False	Whether to automatically initiate remote TCP connection
Netmask, B0	0…255	255	These settings define a netmask 255.255.255.0
Netmask, B1	0…255	255	
Netmask, B2	0…255	255	
Netmask, B3	0…255	0	

Table 3 – Ethernet Parameter Setpoints

5.3. Overall Configuration Options

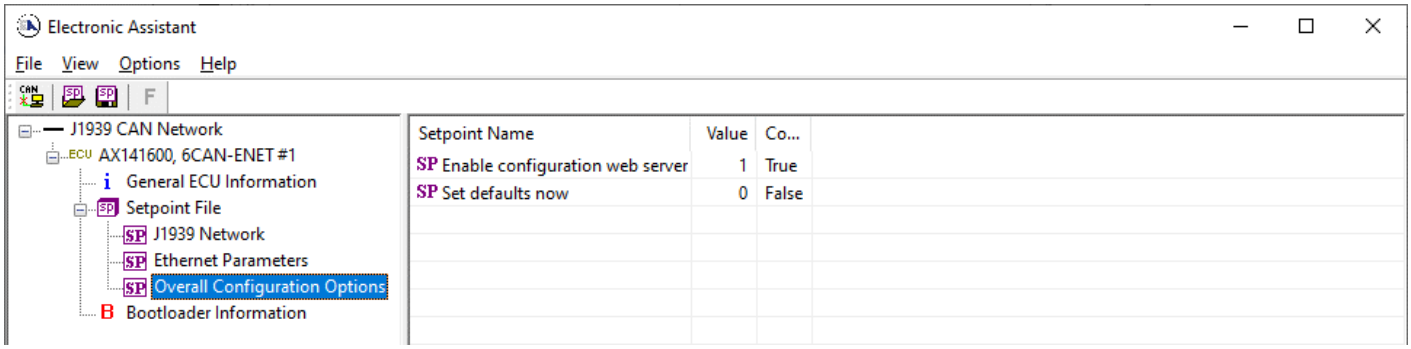


Figure 6 – Screen Capture of Overall Configuration Options Setpoints

Name	Range	Default	Notes
Enable configuration web server	0, 1	1 – True	Configuration web server running on port 80 (TCP)
Set defaults now	0, 1	0 – False	This setpoint is password protected. The password is '**SetDefaults**'.

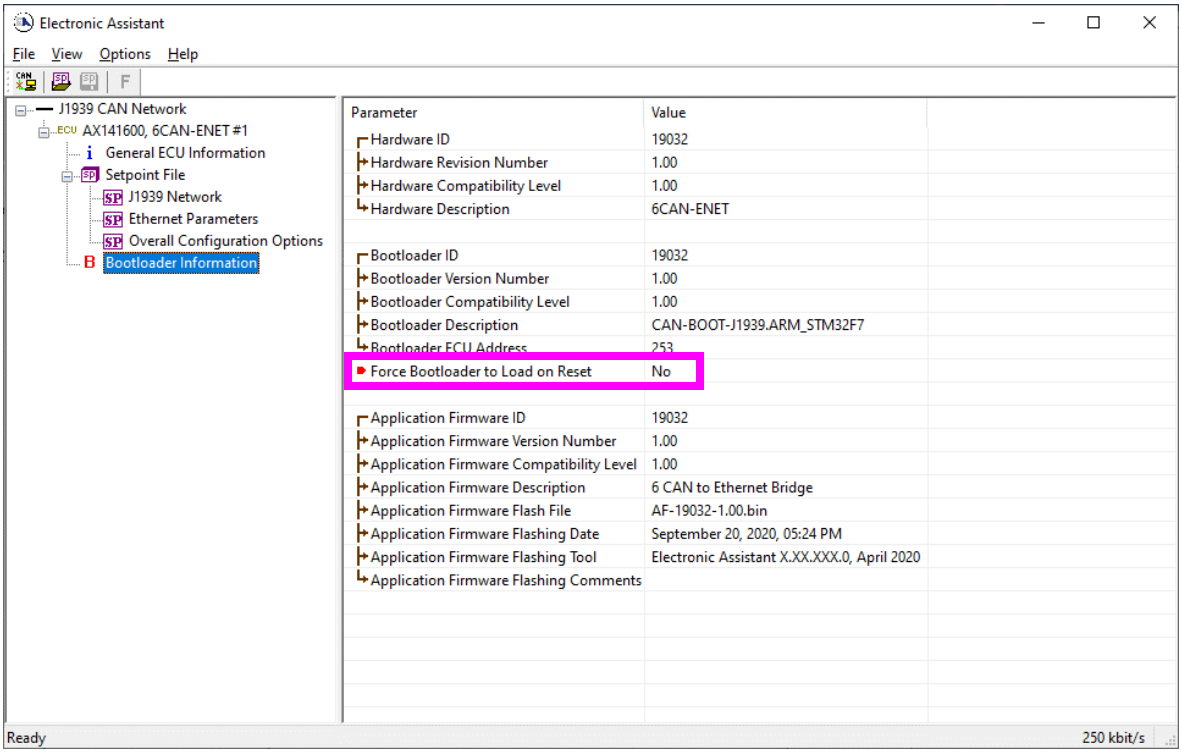
Table 4 – Overall Configuration Options Setpoints

6. REFLASHING OVER CAN WITH THE AXIOMATIC EA BOOTLOADER

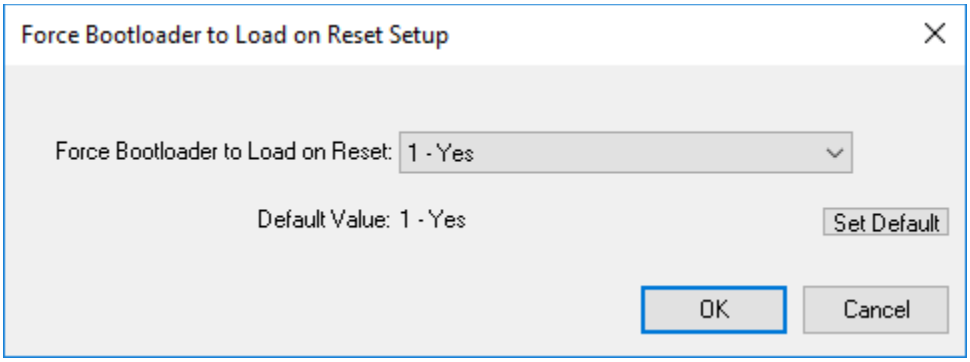
The AX141600 can be upgraded with new application firmware using the **Bootloader Information** section. This section details the simple step-by-step instructions to upload new firmware provided by Axiomatic onto the unit via CAN, without requiring it to be disconnected from the J1939 network.

Note: To upgrade the firmware use Axiomatic Electronic Assistant V<TBD> or higher.

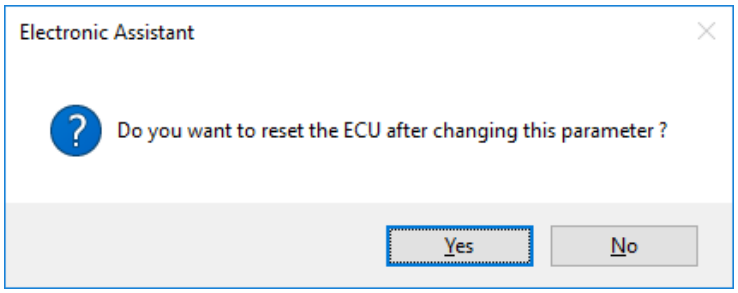
1. When the Axiomatic EA first connects to the ECU, the **Bootloader Information** section will display the following information.



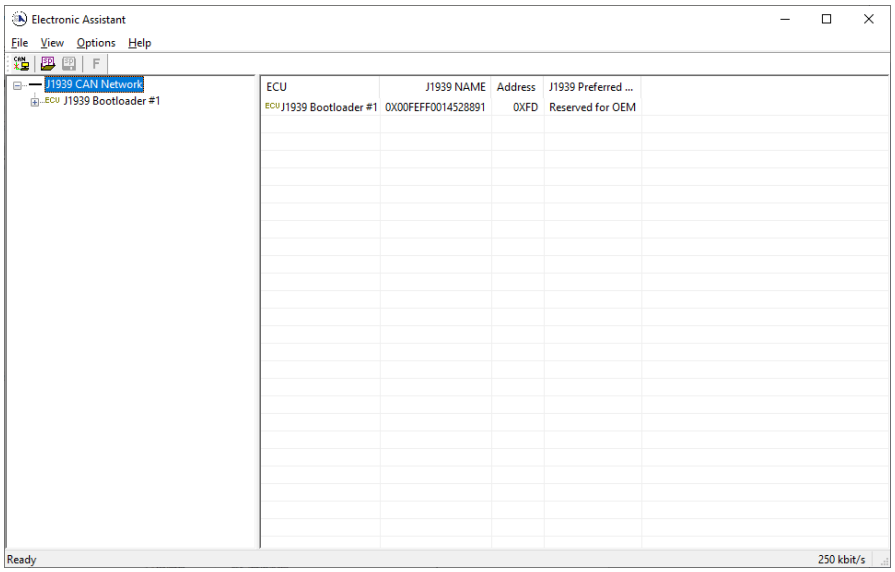
2. To use the bootloader to upgrade the firmware running on the ECU, change the variable **"Force Bootloader To Load on Reset**" to *Yes.*

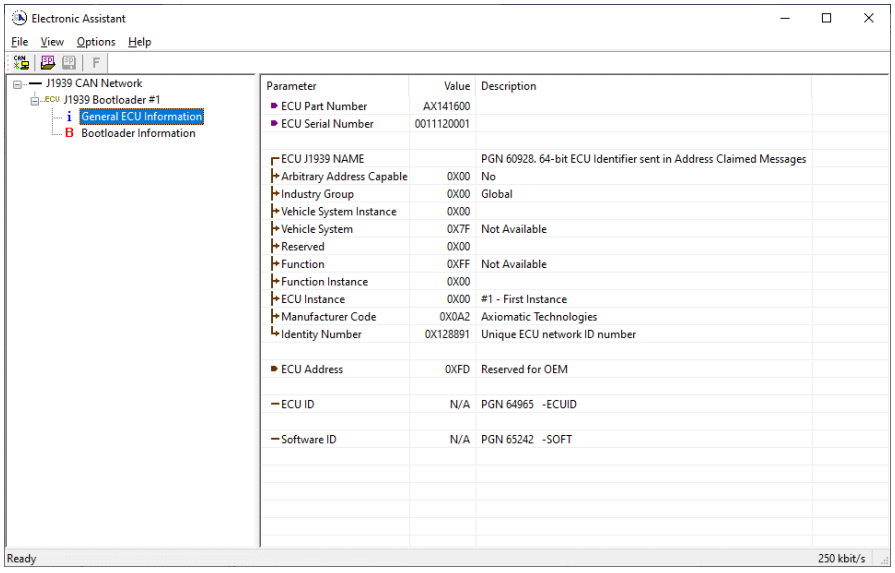


3. When the prompt box asks if you want to reset the ECU, select *Yes*.



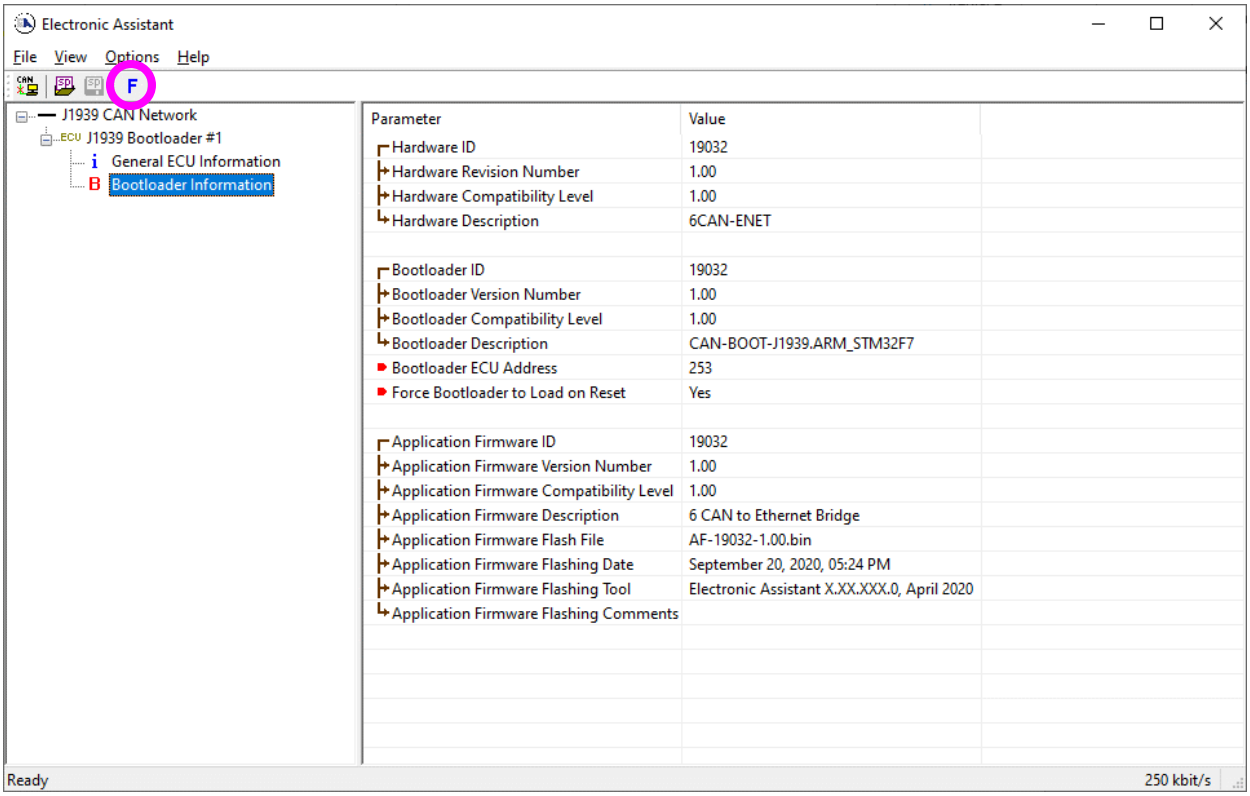
4. Upon reset, the ECU will no longer show up on the J1939 network as an AX141600 but rather as **J1939 Bootloader #1**.





Note that the bootloader is NOT Arbitrary Address Capable. This means that if you want to have multiple bootloaders running simultaneously (not recommended) you would have to manually change the address for each one before activating the next, or there will be address conflicts. And only one ECU would show up as the bootloader. Once the 'active' bootloader returns to regular functionality, the other ECU(s) would have to be power cycled to re-activate the bootloader feature.

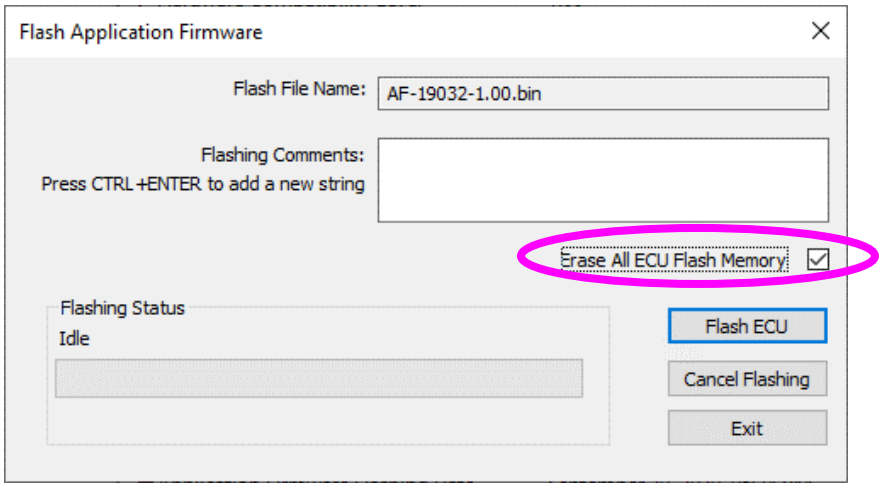
5. When the **Bootloader Information** section is selected, the same information is shown as when it was running the AX141600 firmware, but in this case the **F**lashing feature has been enabled.



6. Select the **F**lashing button and navigate to where you had saved the **AF-19032-x.xx.bin** file sent from Axiomatic. (Note: only binary (.bin) files can be flashed using the Axiomatic EA tool.)

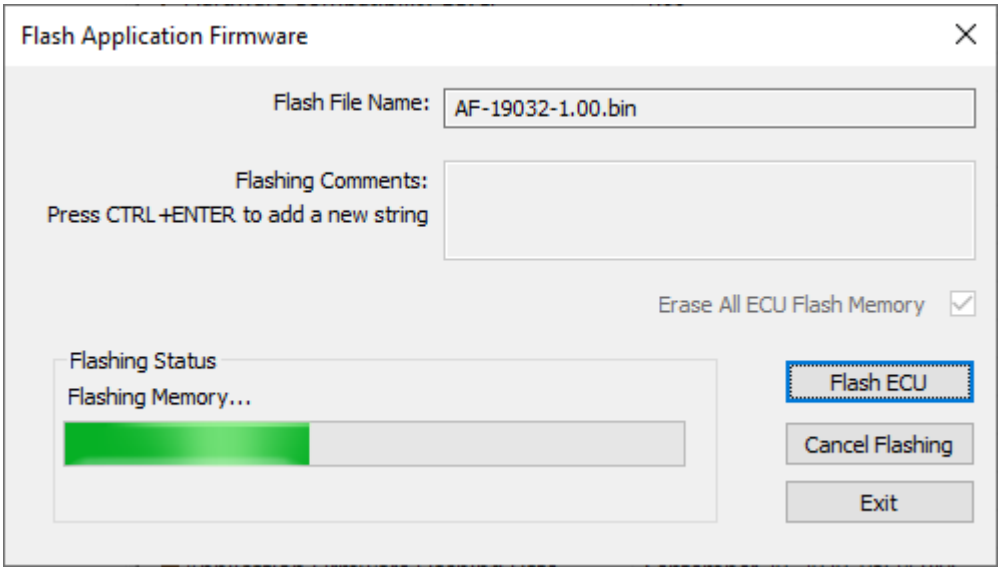
7. Once the Flash Application Firmware window opens, you can enter comments such as “Firmware upgraded by [Name]” if you so desire. This is not required, and you can leave the field blank if you do not want to use it.

   Note: You do not have to date/time-stamp the file, as the Axiomatic EA tool automatically does this when you upload the new firmware.

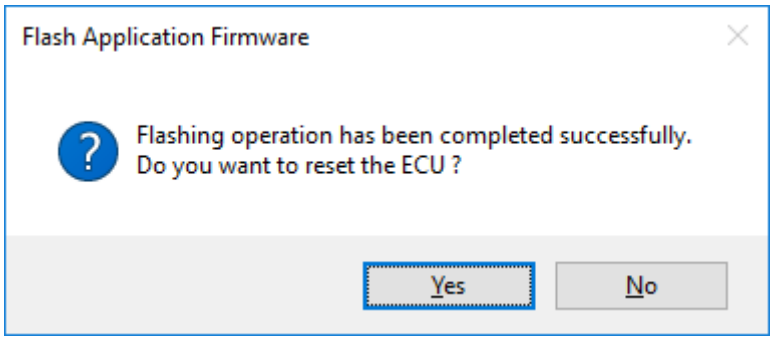


NOTE: It is good practice to tick the “Erase All ECU Flash Memory” box. Please note, that selecting this option will **erase ALL data stored in non-volatile flash**. It will also erase any configuration of the setpoints that might have been done to the ECU and reset all setpoints to their factory defaults. In case the controller contains custom settings, those settings need to be saved to PC before reflashing.

A progress bar will show how much of the firmware has been sent as the upload progresses. The more traffic there is on the J1939 network, the longer the upload process will take.



Once the firmware has finished uploading, a message will pop up indicating the successful operation. If you select to reset the ECU, the new version of the AX141600 application will start running, and the ECU will be identified as such by the Axiomatic EA. Otherwise, the next time the ECU is power-cycled, the AX141600 application will run rather than the bootloader function.



Note: If at any time during the upload the process is interrupted, the data is corrupted (bad checksum) or for any other reason the new firmware is not correct, i.e. bootloader detects that the file loaded was not designed to run on the hardware platform, the bad or corrupted application will not run. Rather, when the ECU is reset or power-cycled the **J1939 Bootloader** will continue to be the default application until valid firmware has been successfully uploaded into the unit.

APPENDIX A - TECHNICAL SPECIFICATION

Specifications are indicative and subject to change. Actual performance will vary depending on the application and operating conditions. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Approvals/Limitations and Return Materials Process as described on https://www.axiomatic.com/service/.

Power

Power Supply Input - Nominal	12 V or 24 Vdc nominal; 9…36 Vdc
Under-voltage Protection	Hardware shuts down at 6.5 Vdc.
Surge Protection	55 Vdc
Over-voltage Protection	Hardware shuts down at 45Vdc.
Reverse Polarity Protection	Provided up to -80V
Over-current Protection	Maximum 5.5A

Functionality

Conversion Platform	The CAN Isolator/Router comes pre-programmed with standard protocol conversion logic for bidirectional data exchange between six CAN buses (CAN 2.0B). The higher-level CAN protocols such as SAE J1939 or CANopen® are recognized. The Ethernet port has a web server running for configuration purposes.
CAN	CAN 2.0B ports Baud rate: Each port can be configured for 125, 250, 500 or 1,000 kbps over CAN. Default baud rate: 500 kbps 5 CAN Ports Five (5) CAN In ports with power supply and resettable fuse The fuse trips at 1A. Fuse status is reported over the CAN network. Fuse stays tripped until short is removed. Each port includes 120 Ohm termination. It can be configured over CAN. 1 CAN Port One (1) CAN port with module activation sensing One digital input shuts down power to the router and power to all CAN input ports. Amplitude up to +Vps.
Ethernet	Single 10/100 Mbit Ethernet compliant port 10BASE-T, 100BASE-Tx (auto-negotiation and full-duplex supported) Auto-MDIX
Operating System	FreeRTOS

General Specifications

Memory	STM32F765ZIT6 32-bit, 2Mbyte Flash Program Memory
Quiescent Current Draw	170 mA @12 V; 100 mA @24 V
Isolation	3-way isolation Isolation is between power supply, microcontroller, and each CAN port. 300 Vrms
LED Indicator	POWER LED GREEN= Power ON (Fuse Closed) RED = Power OFF (Fuse Open) Port Activity is shown using the RED/GREEN LED ON.
Operating Conditions	-40 to 70°C (-40 to 158°F)
User Interface – SAE J1939 models	Parameters are configurable using the Axiomatic Electronic Assistant KIT, P/Ns: **AX070502** or **AX070506K**. The functionality of the Axiomatic Electronic Assistant includes but is not limited to the following. • Specify CAN message filters and CAN message IDs to be received • Define CAN node ID, and baud rate • Define Ethernet parameters such as IP address and netmask. Refer to the User Manual.
Web Server Interface	Available
Enclosure and Dimensions	PC Infino SC-1220UR UL 94-V2 rated Gasket Encapsulated Refer to dimensional drawing.
Installation	Suits three (3) M5 or #10 mounting bolts.
Weight	1.036 lb. (0.475 kg)

Electrical Connections – Power, Ethernet	**Power Connector** 1 CONEC 43-01167 M12 4-pin connector (A-coded), Male (Connector label 1) **Ethernet Connector** 1 CONEC 43-01332 M12 8-pin connector (A-coded), Female (Connector label 2)
Electrical Connections - CAN	**5 CAN Connector** 1 CONEC 43-01165 M12 5-pin connector (A-coded), Female (Connectors are labelled as 3, 5, 6, 7, 8.) **1 CAN & VControl Connector** 1 CONEC 43-01169 M12 5-pin connector (A-coded), Male (Connector label 4)
Mating Connectors	Not supplied Mating connectors should meet the following standard for M12 Connectors, IEC 61076-2-101:2012. They should be A-coded.

General Specifications

Protection Rating	IP67; Unit is encapsulated within the housing.
Vibration	MIL-STD-202H, method 204D, test condition C 10 g peak (Sine) MIL-STD-202H, method 214A, test condition I/B 7.56 Grms (Random)
Shock	MIL-STD-202H, method 213B, test condition A 50g peak
Compliance	CE marking
EMC Compliance	Emissions: CISPR 32 Immunity: CISPR 35

Note:
CANopen® is a registered community trademark of CAN in Automation e.V.

OUR PRODUCTS

AC/DC Power Supplies

Actuator Controls/Interfaces

Automotive Ethernet Interfaces

Battery Chargers

CAN Controls, Routers, Repeaters

CAN/WiFi, CAN/Bluetooth, Routers

Current/Voltage/PWM Converters

DC/DC Power Converters

Engine Temperature Scanners

Ethernet/CAN Converters, Gateways, Switches

Fan Drive Controllers

Gateways, CAN/Modbus, RS-232

Gyroscopes, Inclinometers

Hydraulic Valve Controllers

Inclinometers, Triaxial

I/O Controls

LVDT Signal Converters

Machine Controls

Modbus, RS-422, RS-485 Controls

Motor Controls, Inverters

Power Supplies, DC/DC, AC/DC

PWM Signal Converters/Isolators

Resolver Signal Conditioners

Service Tools

Signal Conditioners, Converters

Strain Gauge CAN Controls

Surge Suppressors

OUR COMPANY

Axiomatic provides electronic machine control components to the off-highway, commercial vehicle, electric vehicle, power generator set, material handling, renewable energy and industrial OEM markets. ***We innovate with engineered and off-the-shelf machine controls that add value for our customers.***

QUALITY DESIGN AND MANUFACTURING

We have an ISO9001:2015 registered design/manufacturing facility in Canada.

WARRANTY, APPLICATION APPROVALS/LIMITATIONS

Axiomatic Technologies Corporation reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Approvals/Limitations and Return Materials Process at https://www.axiomatic.com/service/.

COMPLIANCE

Product compliance details can be found in the product literature and/or on axiomatic.com. Any inquiries should be sent to sales@axiomatic.com.

SAFE USE

All products should be serviced by Axiomatic. Do not open the product and perform the service yourself.

This product can expose you to chemicals which are known in the State of California, USA to cause cancer and reproductive harm. For more information go to www.P65Warnings.ca.gov.

SERVICE

All products to be returned to Axiomatic require a Return Materials Authorization Number (RMA#) from rma@axiomatic.com. Please provide the following information when requesting an RMA number:

- Serial number, part number
- Runtime hours, description of problem
- Wiring set up diagram, application and other comments as needed

DISPOSAL

Axiomatic products are electronic waste. Please follow your local environmental waste and recycling laws, regulations and policies for safe disposal or recycling of electronic waste.

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