



# Au J1939 Message Center System User Manual

Rev. C

By Au Group Electronics  
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# Au J1939 Message Center System User Manual (Rev. C)

## 1. Au J1939 MCS Hardware

Au J1939 Message Center System (MCS) is a quick turn-key system, which displays SAE-J1939 parameters on computer screen, such as Engine RPM, vehicle speed, etc. It can be used as a secondary display on trucks, school bus, recreation vehicles (RV), marine vessels, and/or any place with SAE-J1939 CAN (Controller Area Network) network. Au J1939 MCS includes a handheld device and computer software with graphic user interface (GUI).



Figure 1-1

### 1.1. Major Hardware Features

Au J1939 MCS device (figure 1-1) is a handheld device with 2 LEDs, 1 push button, and 2 DB9 connectors (1 female connector on RS232 side, 1 male connector on BUS side). Major features of the device are listed below:

- Size: 3-1/8”L X 1-11/16”W X 13/16” H (78mm X 42mm X 21mm)
- Enclosure Color: Black or PC white
- 1 push button
- 2 LED (Power, Communication)
- 1 RS232 Interface: for connection to PC
- 1 DB9 Bus connector: for CAN bus network connection and power supply
- Power supply: +12V DC, 250mA max

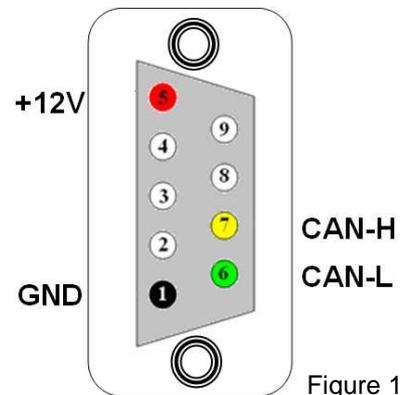


Figure 1-2

It can be connected to CAN / SAE J1939 network on the Bus side through a CAN cable (part #: CBL-CAN-01 or CBL-CAN-03). The pin-out of the DB9 male “Bus” interface is illustrated in Figure 1-2.

### 1.2. 3 ways of PC connection

Au J1939 MCS device has an RS232 interface. It can be connected to PC with one of the three ways, as shown in Figure 1 – 3:



Figure 1 – 3

- 1.2.1. It can be connected to the RS232 (serial) port of a PC through a RS232 serial extension cable (part#: CBL-RS232-01, order separately)
- 1.2.2. It can be connected to the USB port of a PC through a USB to RS232 converter cable (part#: CBL-USB-232, order separately).
- 1.2.3. With an optional build-in Bluetooth module, Au J1939 MCS device can be wireless connected to PC through Bluetooth module and PC Bluetooth dongle(order separately).

**Note: Default Bluetooth pairing code is 1234.**

Please refer to attachment B for detail information on how to use Bluetooth module.

A typical SAE J1939 -15 network topology with Au SAE J1939 MCS is illustrated in Figure 1 – 4.

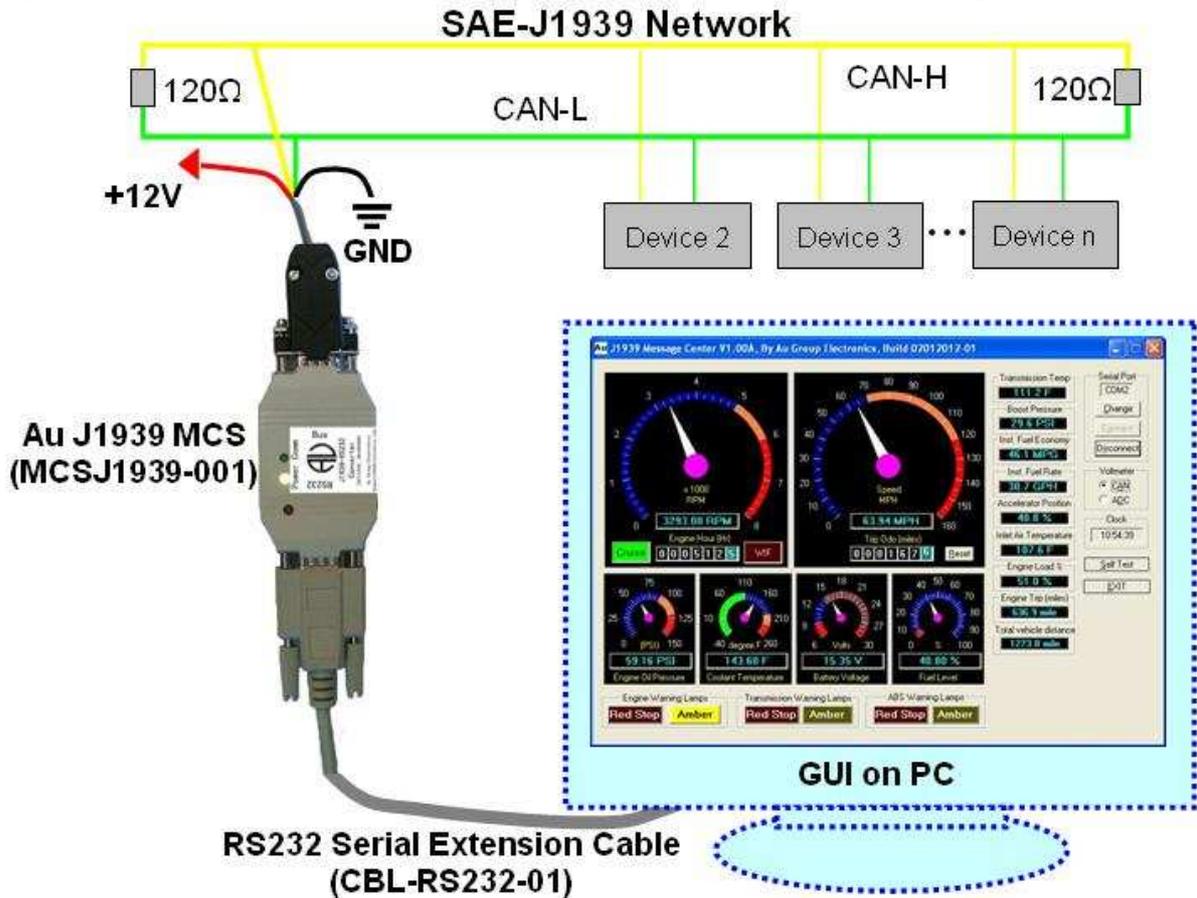


Figure 1-4 A typical SAE J1939 -15 network topology with Au J1939 MCS

All items for the MCS hardware connection and their Au Part# are listed in table 1-2.

Table 1-2 Hardware list and part # for Data center system

Au Part#	Accessories
MCSJ1939-001	Au SAE J1939 Message Center System <b>without</b> Bluetooth module
MCSJ1939-001B	Au SAE J1939 Message Center System <b>with</b> Bluetooth module
CBL-CAN-01	4-wire CAN cable for DB9 male BUS connector
CBL-RS232-01	RS232 Serial Extension Cable
CBL-USB-232	USB to RS232 Serial Convert Cable
CBL-CAN-03	CAN /J1939 Cable with DB9 Female Connector and 9-way Round Threaded Plug

## 2. Au J19393 MCS PC Software with GUI

Au J1939 MCS GUI is showing in figure 2-1.



Figure 2-1 – Au J1939 Message Center System GUI

### 2-1 Major Software Features

- Ease to Use: Display SAE-J1939 message from CAN network without the requirement of decent J1939 knowledge/experience or very complicate configuration settings.
- 6 parameters displayed in both analog Gages and digital display:
  - Engine Revolution per Minutes (RPM)
  - Vehicle/vessel Speed
  - Engine Oil Pressure
  - Engine Coolant Temperature
  - Battery Voltage (from CAN bus or from power supply for the device)
  - J1939 Fuel Level (when available)
- 11 parameters displayed in digital outputs and Computer clock
  - Engine Hour
  - Trip Odometer Accumulation and Reset Capability
  - Transmission Temperature
  - Engine Boost Pressure
  - Instant Fuel Economy
  - Instant Fuel Rate
  - Accelerator Position
  - Inlet Air Temperature
  - Engine Load Percentage
  - Engine Trip
  - Total vehicle distance
- 8 message/warning lamps
  - Cruise Lamp
  - Water In Fuel Warning Lamp
  - Engine Warning Lamp - Red Stop and Amber
  - Transmission Warning Lamp - Red Stop and Amber

- ABS Warning Lamp - Red Stop and Amber
- Serial port number setting
- Serial connection / Disconnect
- Voltmeter source selection
- Computer Clock display
- Self test function

After installation (please refer to appendix A for how to install Au J1939 MCS GUI step by step), the software will function accordingly with J1939 input, no special tune-up required.

### 2-2 Setting serial port number

At the 1<sup>st</sup> when Au J1939 MCS is connected to a PC, if the connected serial port is not COM1, the serial port # needed to be changed from the GUI.

On the top-right side, click "Change" button to bring up "Change Serial Port" window, select desired COM from the drop down list, click "OK" to confirm change (Figure 2-2). The setting of the selected serial port number will be saved in the computer.



Figure 2-2

### 2-3 Reset Trip-odometer

Click the "Reset" button at Trip Odo meter will reset trip odometer to 0 (Figure 2-3), also it will be reset to 0 every time when the program starts. This is only a "Trip" odometer.

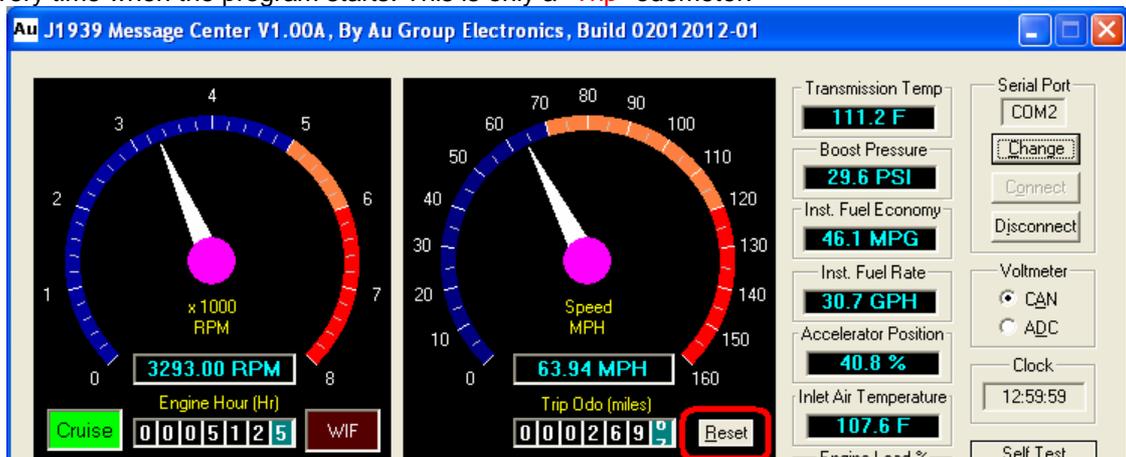


Figure 2-3 – Before reset

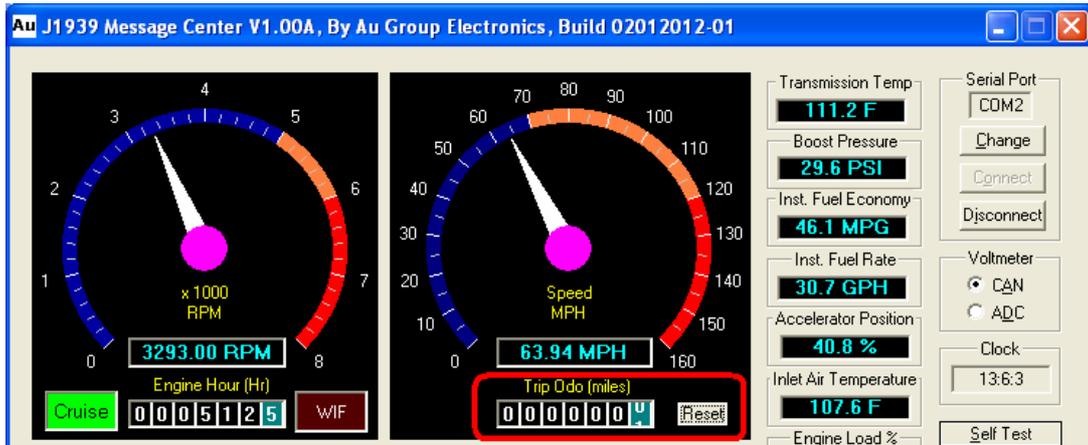


Figure 2-4 – after reset

### 2-4 Connect / Disconnect serial connection

The serial connection from PC to Au J1939 MCS can be easily disconnected by click the “Disconnect” button. After clicking “Disconnect” button (Figure 2-5), except for Trip Odometer and Clock, all the other parameters will be cleared to 0, as long as the power supply to the device is still connected.

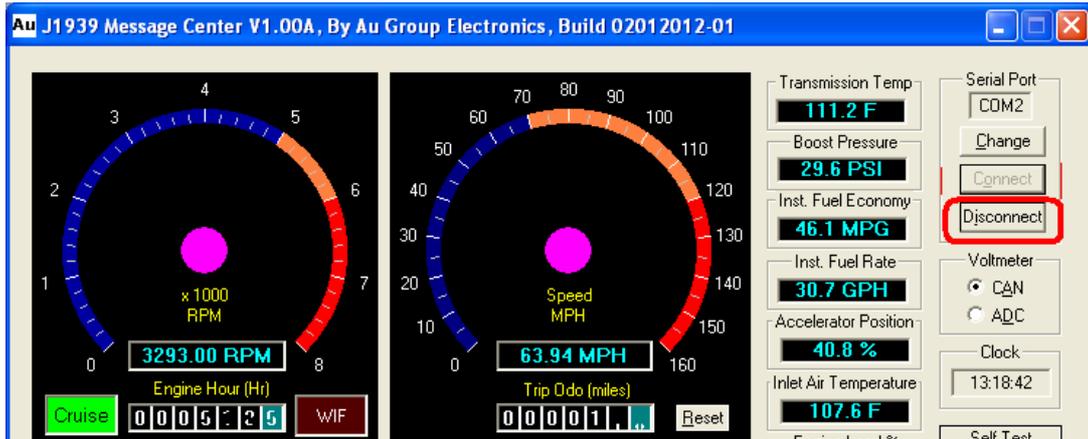


Figure 2-5

After that if no hardware connection change, the serial connection can be fast recovered by clicking “Connect” button (Figure 2-6).

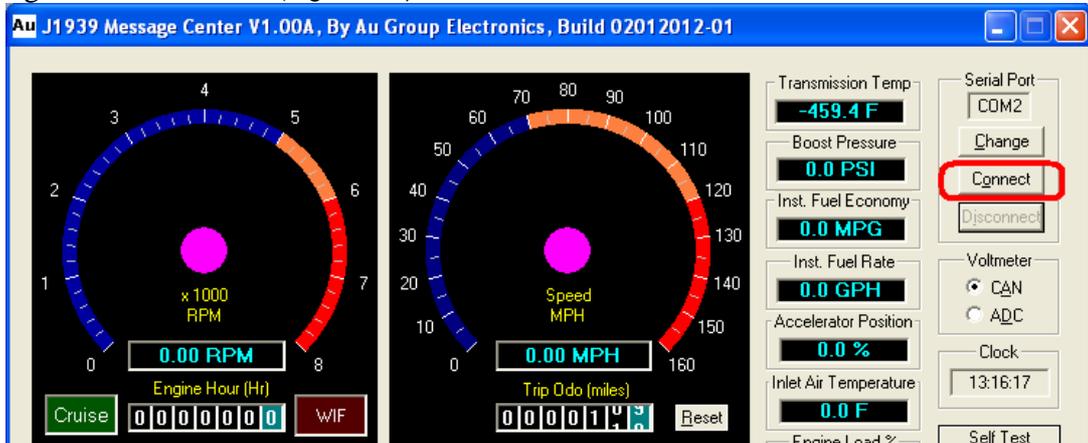


Figure 2-6

### 2-5 Voltmeter Source

The battery voltage reading will be different by selecting the two sources: from CAN network or from the Au J1939 MCS device.



Figure 2-7 Battery voltage is 15.35V when the voltmeter source is selected from CAN network.



Figure 2-8 Battery voltage is 12.15V when the voltmeter source is selected from ADC.

### 2-6 Self test mode

Self Test button on the top right is an On-Off switch, click "Self Test" once will start a self test mode, click "Self Test" again will exit self test mode (Figure 2-9).



Figure 2-9

### 2-7 Exit program

There are 2 ways to exit the program

1. Click "Exit" button (Figure 2-10).
2. Click the "cross" sign on top-right corner of the Au J1939 MSC GUI



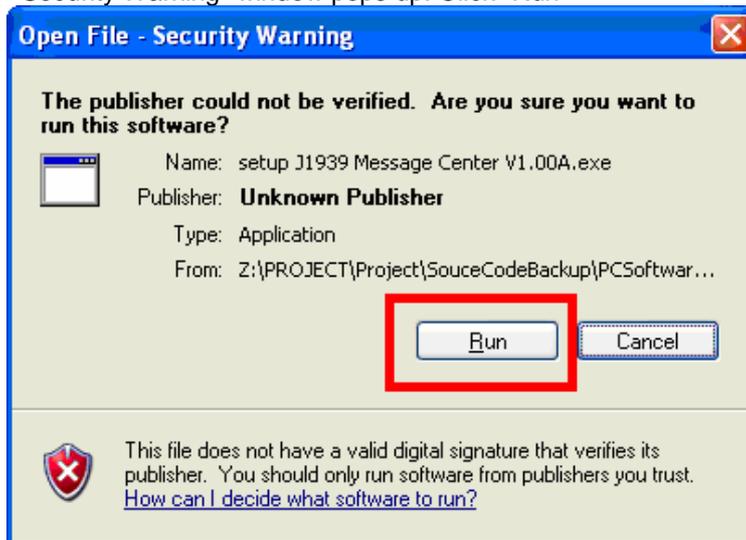
Figure 2-10

## Appendix A J1939 MCS GUI Installation

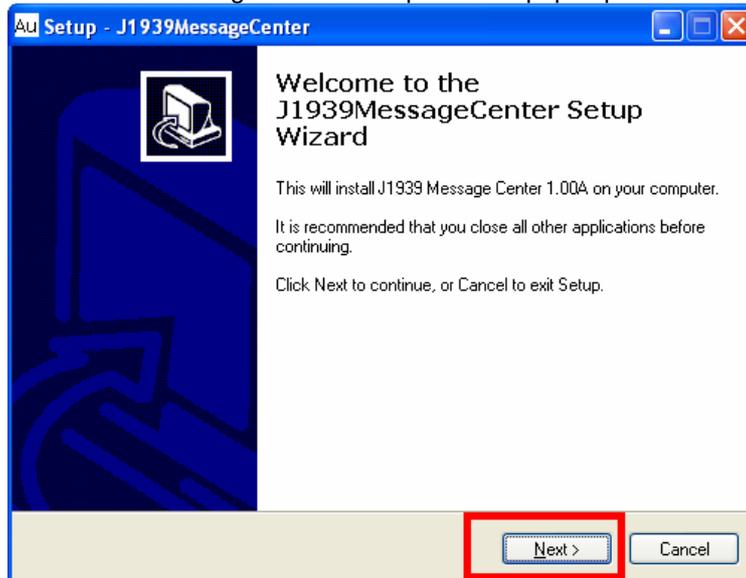
- A-1. Save Au Group Electronics provided program "setup J1939 Message Center V1.00A" file on your PC, Double click to start installation.



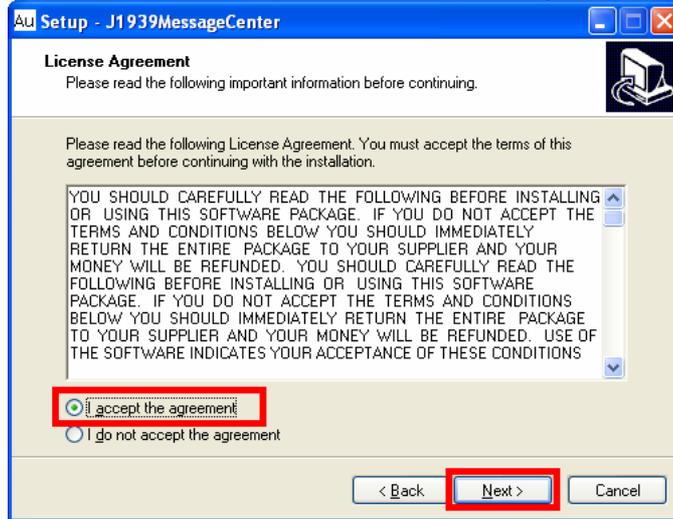
- A-2. "Open File –Security Warning" window pops up. Click "Run"



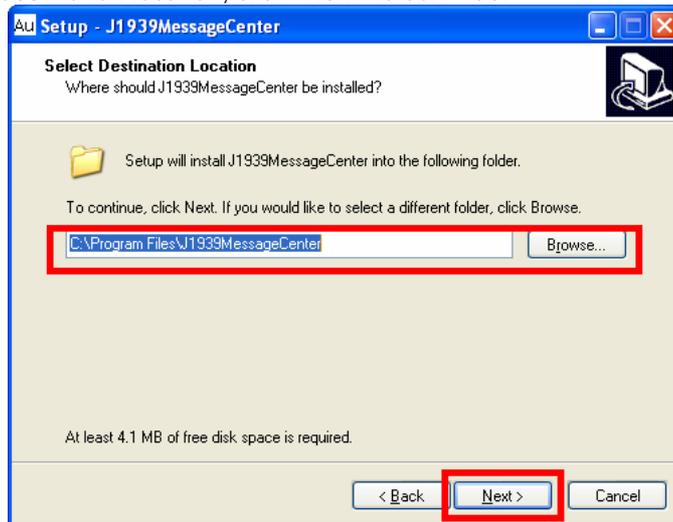
- A-3. "Welcome to the J1939 Message Center Setup Wizard" pops up. Click "Next" to continue.



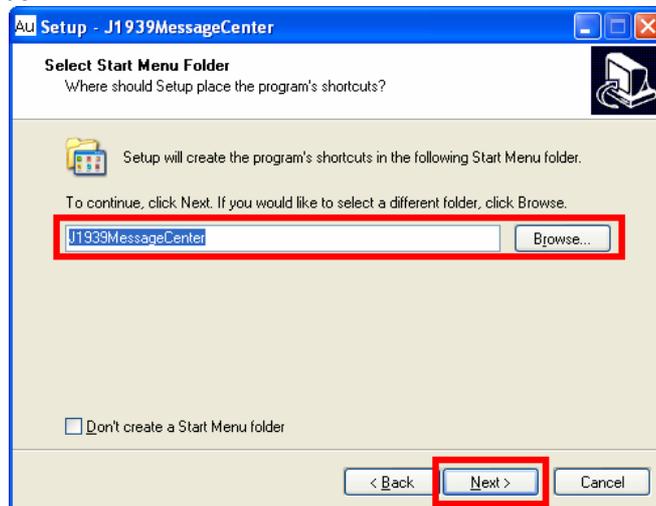
A-4. "License Agreement" window pops up, select "I accept the agreement", click "Next" to continue



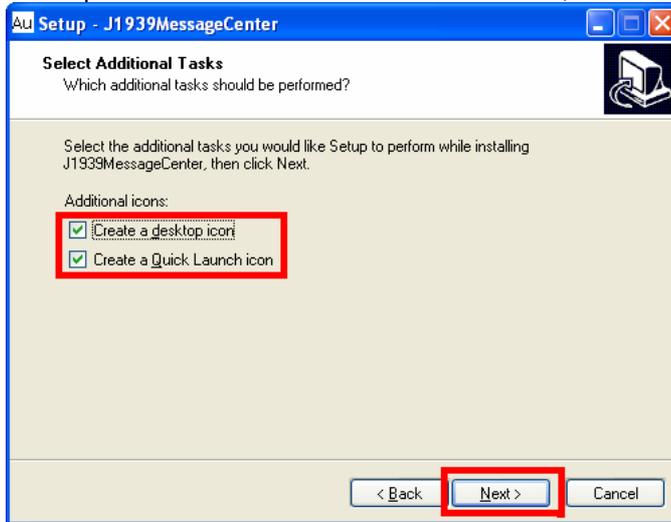
A-5. Select default destination location, click "Next" to continue.



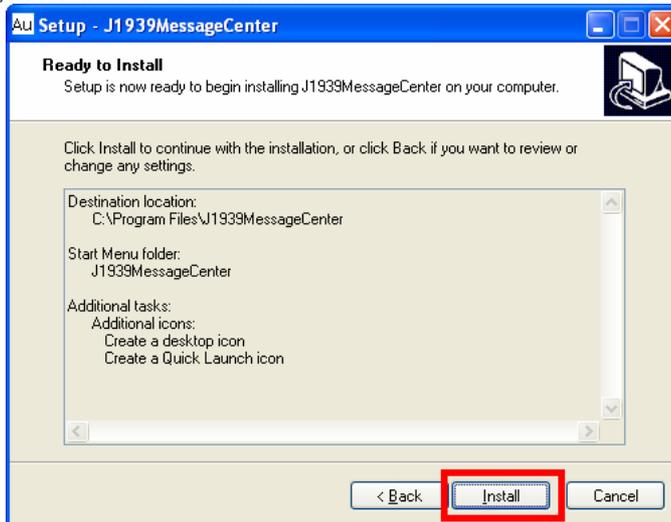
A-6. Name "J1939Message Center" as the Start Menu Folder to place the program's shortcut, click "Next" to continue.



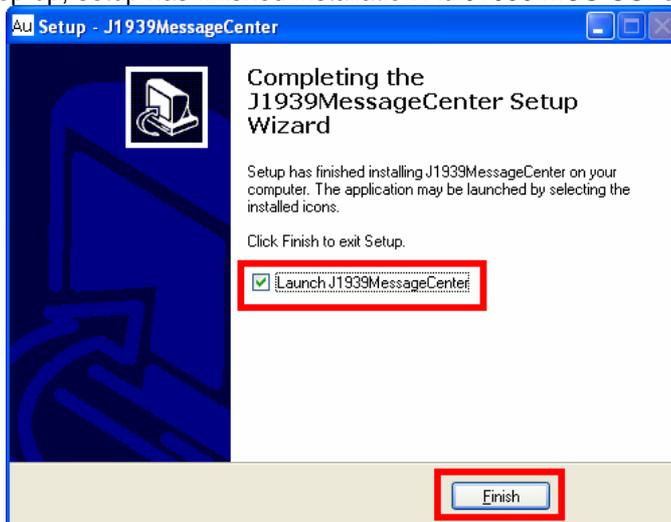
A-7. Check "Create desktop icon" and "Create a Quick Launch icon", click "Next" to continue.



A-8. Setup is ready, click "Install" to continue.



A-9. Check "Launch J1939 Message Center" and Click "Finish" to exit setup. J1939 Message Center interface will pop up, setup has finished installation Au J1939 MCS GUI on your computer



## Appendix B What to do if Au J1939 MCS GUI is only showing partially?

To get the best display result of Au J1939 MCS GUI, it is recommended to set the display monitor at 96 DPI.

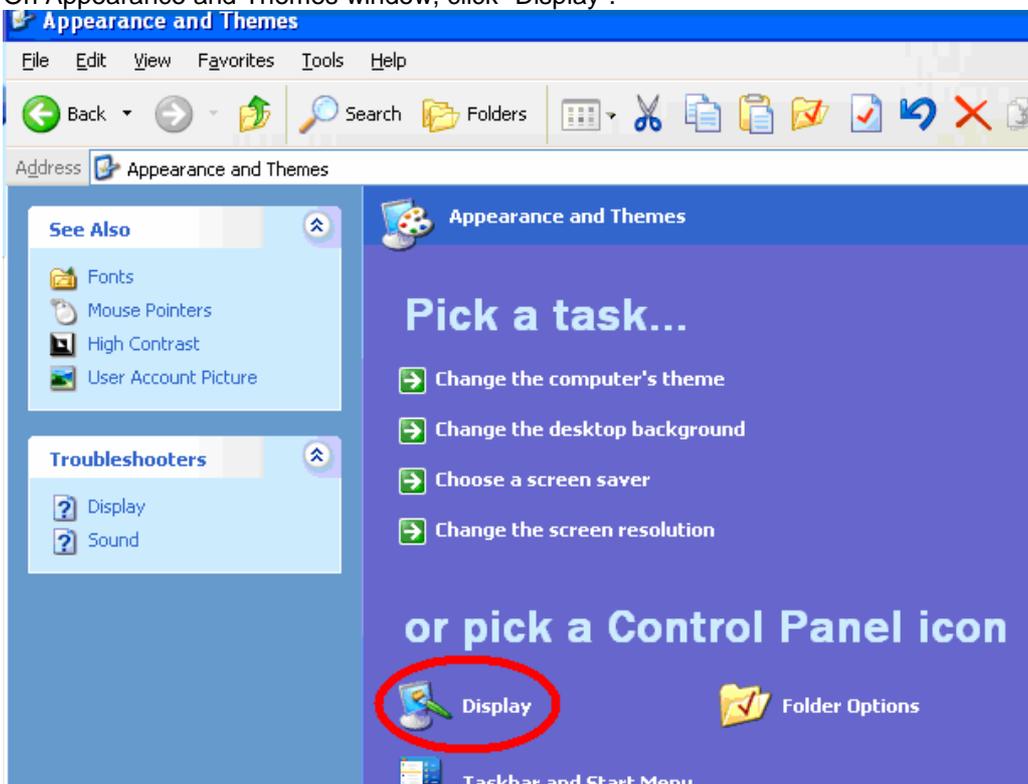
Following steps illustrated the procedure to change the monitor display setting on PC in Windows XP.

Please note for different operating system, the procedure to change the monitor display setting will be different.

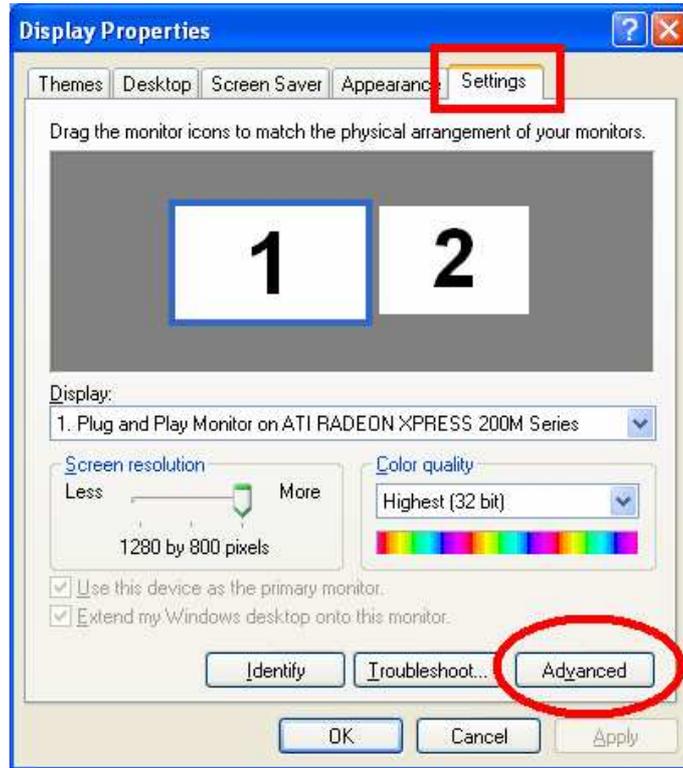
B-1 Click Start → Control Panel, then click "Appearance and Themes".



B-2 On Appearance and Themes window, click "Display".



B-3 On "Display Properties" window, click "Settings" tab, then click "Advanced" button.



B-4 On the "Plug and Play Monitor Properties" window, click "General" tab, set "Normal size (96 DPI)" for DPI setting, click OK button to confirm the setting.

