

GADGET ANALYZER

STARTUP GUIDE



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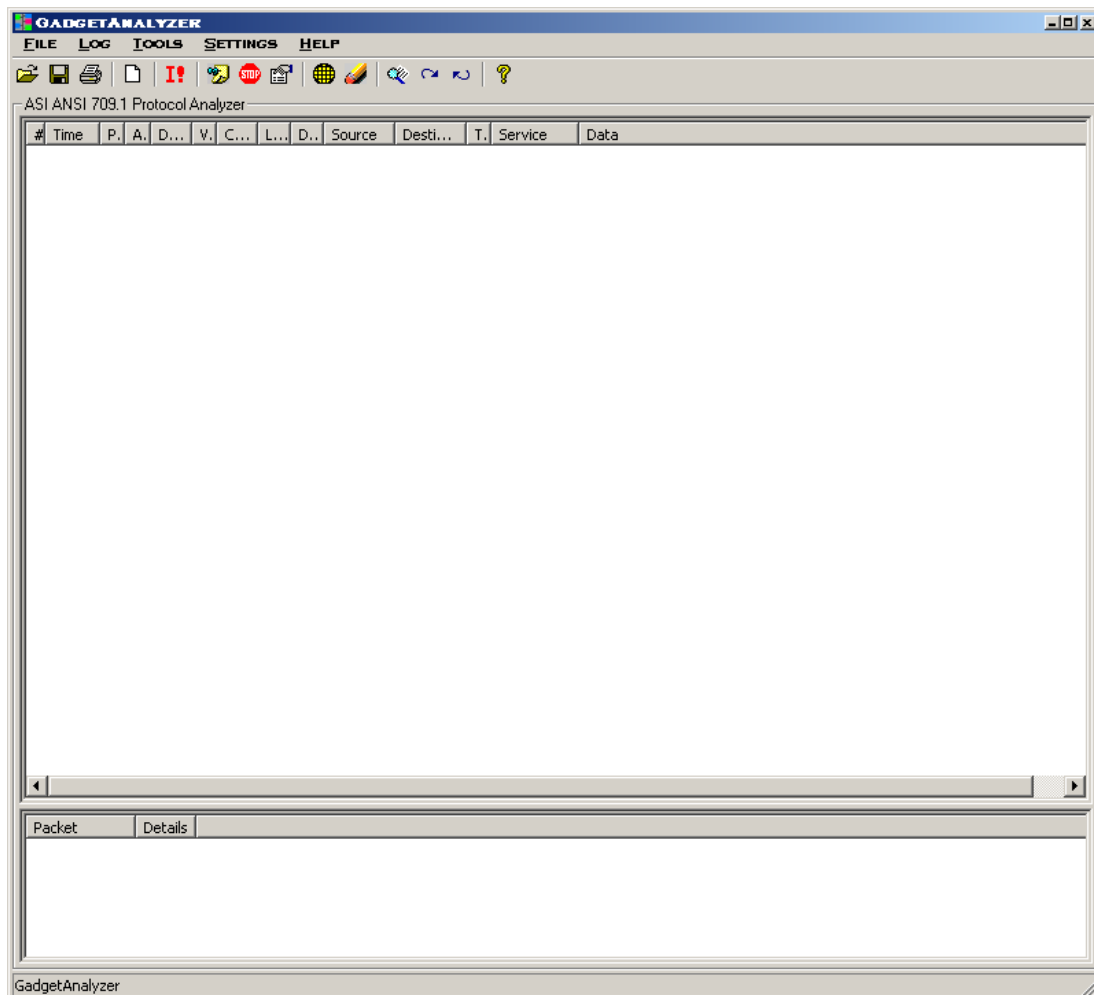
1.1 Introduction

GadgetAnalyzer is a protocol analyzer that connects with a GadgetGateway to view ANSI 709.1 traffic on the Gateway packet by packet. The GadgetAnalyzer consists of a main window that displays the packets collected and a second window that shows details of a highlighted packet for better viewing. GadgetAnalyzer is available as a free download at www.gadgettek.com.

This guide is designed to help the user get started by providing instructions on how to connect GadgetAnalyzer to a GadgetGateway and by familiarizing the user with the GadgetAnalyzer's options and tools. This guide is not an ANSI 709.1 protocol tutorial. It assumes that the user is already familiar with the ANSI 709.1 specification.

1.2 Main Window

The Main Window is the first screen that will appear upon opening up the GadgetAnalyzer. The following section will explain in general terms each of the elements that appear in the Main Window.

















Menubar

The menubar contains all of the available menus for the GadgetAnalyzer. The menus listed in the menubar include [File](#), [Log](#), [Tools](#), [Settings](#), and [Help](#).

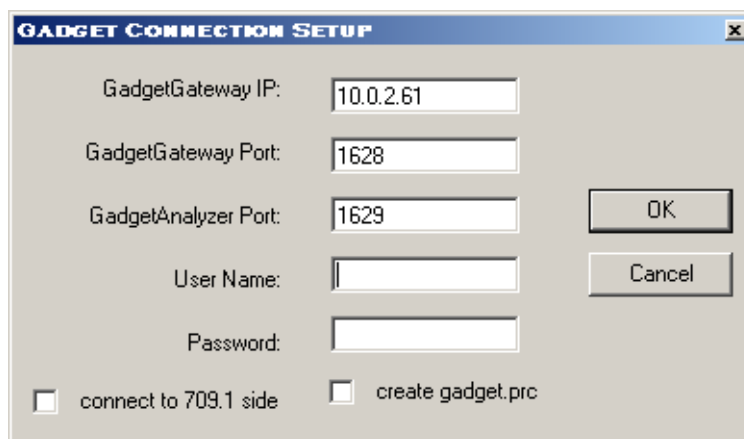
Toolbar

The toolbar provides quick access to the GadgetAnalyzer's main features. Each feature is listed below, accompanied by its representative graphic.

-  Open an existing ASI Logfile: Loads an existing ASI packet log file (*.apl).
-  Save ASI Logfile: Saves the log to an ASI packet log file (*.apl).
-  Print Viewable Log: Prints the viewable log.
-  New Log: Clears the screen.
-  Import prc files: Imports PRC (*.prc), which are binary packet logs.
-  Start Realtime Log: Begins the logging of packets.
-  Stop Realtime Log: Ends the logging of packets.
-  IP connection settings: Brings up the Connection Setup window.
-  Apply filters: Brings up the Filter Settings window.
-  Clear filters: Clears all filters.
-  Search: Brings up the Search Settings window.
-  Search for Next: Finds the next packet that matches the search criteria.
-  Searches for Previous: Finds the previous packet that matched the search criteria.
-  Help: Brings up the Help menu.

1.3 Connection Setup Window

The Connection Setup window is used to set up the connection between the GadgetAnalyzer and the GadgetGateway. The Setup window can be accessed through the Connection Settings button in the toolbar, or through the menubar at Settings > Connection Settings. Enter the necessary information of the GadgetGateway to which you want to connect in the fields provided. Each of the fields in the Setup window will be explained in the following sections.



The screenshot shows a dialog box titled "GADGET CONNECTION SETUP". It contains the following fields and options:

- GadgetGateway IP: 10.0.2.61
- GadgetGateway Port: 1628
- GadgetAnalyzer Port: 1629
- User Name: (empty field)
- Password: (empty field)
- connect to 709.1 side
- create gadget.prc
- OK button
- Cancel button

GadgetGateway IP

This is the IP address of the GadgetGateway to which you want to connect. The IP address can be found through the GadgetGateway's Serial Interface.

GadgetGateway Port

This is the port number of the GadgetGateway to which you want to connect. The port number can be found through the GadgetGateway's Serial Interface.

GadgetAnalyzer Port

This is the number of the port on which the GadgetAnalyzer will be communicating. After making the initial connection with the GadgetGateway, all ANSI 709.1 packets will be sent to the GadgetAnalyzer on the GA port. Select a port number that is not in use by any other program running on your PC.

User Name

This is the user name which was set through the GadgetGateway's Serial Interface. It is the same name used to access the GadgetGateway Configuration Web pages. If no user name has been set, leave this field blank.

Password

This is the password which was set through the GadgetGateway's Serial Interface. If no password has been set, leave this field blank.

create gadget.prc

Checking this box will cause the file **gadget.prc** to be created in GadgetAnalyzer's root directory. All incoming ANSI 709.1 packets will be logged simultaneously to this file.

Note: A *.prc file is a binary packet log containing raw ANSI 709.1 packets.

connect to 709.1 side

Checking this box will allow you to see traffic on the ANSI 709.1 channel to which the GadgetGateway is connected. However, you will not see any packets generated by the GadgetGateway, such as service pins or network management messages.

If this box remains unchecked, you will see all outgoing data from the GadgetGateway to the IP side, including messages generated by the GadgetGateway. However, you will not see messages that are filtered on the ANSI 709.1 side *unless* the GadgetGateway is configured as a REPEATER, in which case, no packets are being filtered.

1.4 Filter Window

The Filter feature will cause the GadgetAnalyzer to display only those packets that match the criteria entered into the filter settings. This is only a display filter, so once the filter is cleared, all packets that have been received will again appear in the window. In other words, no packets are discarded; all packets are collected, but only those that match the filter settings are displayed.

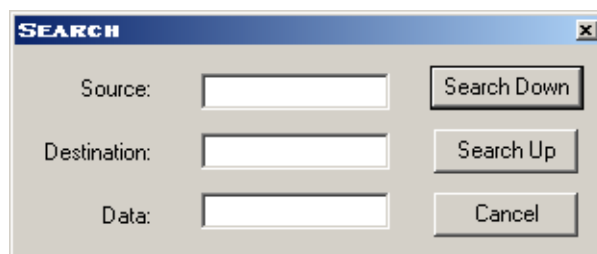
The GadgetAnalyzer's filter can operate at all times, whether or not the GadgetAnalyzer is currently logging packets. The Filter window can be accessed by clicking on the Apply Filters button in the toolbar, or through the menubar at Tools > Apply Filter.



Enter into the Source, Destination, and Data fields the criteria of those packets you would like the GadgetAnalyzer to display, including packets that contain specific strings. For example, if you wish to display only those packets that are from "node 0x7F on subnet 1," you would enter "01/7F" in the Source field. Likewise, if you would like to display all packets that are from "node 0x7F on subnet 1" and/or all packets going to "node 0x05 on subnet 3," then add "03/05" to the Destination field. If you also wish to show packets that contain certain data, then you can enter the specific data in the Data field (i.e., 00 04 7F 88). Additionally, if you wish to display only network management or service pin messages, then enter "NM" or "Service Pin," respectively, in the Data field.

1.5 Search Window

The Search feature will find and display only those packets that match the criteria entered into the filter settings. The matching packets will be highlighted in the log window. The Search window can be accessed by clicking on the Search button in the toolbar, or through the menubar at Tools > Search.



The Search window operates in a similar fashion to the Filter. By changing the data in the Source, Destination, and Data fields, the Search feature can be used to search for packets that contain specific strings. For example, if you wish to search for the next or previous packet from “node 0x7F on subnet 1,” you would enter “01/7F” in the Source field. For more examples of how to use the Search feature, see Section 1.4, “Filter Window”.

1.6 Other Features

1.6.1 Importing .prc files

PRC files (*.prc) are binary packet logs. They can be displayed by clicking the Import button in the toolbar or from the menubar at File > Import .prc. Once a .prc file has been imported, it can be filtered, searched, saved in .apl format (Adept Packet Log), or exported to a delimited text file.

The .prc format is also used by the Loytec™ Protocol Analyzer. This interoperability allows the user to open **gadget.prc** in the Loytec Protocol Analyzer and view statistics on that log as well.

1.6.2 Exporting .txt files

The packet log can be exported to a **delimited .txt** file by selecting File > Export .txt from the menubar. A dialog box will appear which allows the user to select the type of delimiter to use for the export. Type in your delimiter preference and click OK.

1.7 Analyzing Packet Message Types

The Data field of the packet contains information about the ANSI 709.1 message. This information includes the type of message, followed by the actual data of the message in hex format. The message types listed below are possible types that may be displayed. (For more information on the ANSI 709.1 protocol, see the ANSI 709.1 specification.)

Network Variable

The following format is used to indicate a network variable message:

NVI[*sel#*] <*data*> incoming
NVO[*sel#*] <*data*> outgoing

Application

The following format is used to indicate an application message:

APP[*code#*] <*data*>

Network Management

The following format is used to indicate a network management message:

NM[*type*] <*data*>

The various types of network management messages are listed below:

NM[Query ID] <*data*>
NM[Respond to Query] <*data*>
NM[Update Domain] <*data*>

NM[Leave Domain] <data>
NM[Update Key] <data>
NM[Update Address] <data>
NM[Query Address] <data>
NM[Query Net Variable Config] <data>
NM[Update Group Address Data] <data>
NM[Query Domain] <data>
NM[Update Net Variable Config] <data>
NM[Set Node Mode] <data>
NM[Read Memory] <data>
NM[Write Memory] <data>
NM[Checksum Recalculate] <data>
NM[Wink] <data>
NM[Memory Refresh] <data>
NM[Query SNVT] <data>
NM[Network Variable Fetch] <data>
NM[Set Router Mode] <data>
NM[Group or Subnet Table Clear] <data>
NM[Group or Subnet Table Download] <data>
NM[Group Forward] <data>
NM[Subnet Forward] <data>
NM[Group No Forward] <data>
NM[Subnet No Forward] <data>
NM[Group or Subnet Table Report] <data>
NM[Router Status] <data>
NM[Device Escape Code] <data>
NM[Far Side Escape Code] <data>
NM[Service Pin] <data>

Network Diagnostic

The following format is used to indicate a network diagnostic message:

ND[*type*] <data>

The various types of network diagnostic messages are listed below:

ND[Query Status] *<data>*

ND[Proxy Command] *<data>*

ND[Clear Status] *<data>*

ND[Query XCVR Status] *<data>*

Foreign Frame

The following format is used to indicate a foreign frame message:

FF[*code#*] *<data>*