Release Notes

ControlLogix EtherNet/IP Communication Interface Module, Firmware 3.8

Catalog Number 1756-ENBT

These release notes provide enhancement and anomaly information for this module. Use this document along with your ControlLogix EtherNet/IP Communication Interface Module User Manual, publication 1756-UM051.

To Obtain a User Manual

This product also has a user manual (pub. no. 1756-UM051). To view it, visit http://www.rockwellautomation.com/literature

To purchase a manual, you can:

- contact your distributor or Rockwell Automation representative
- call 800.963.9548 (USA/Canada) or 001.320.725.1574 (outside USA/Canada)

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Firmware Revision 3.8

Corrected Anomalies

- Module would appear to lock up during the power up process from short duration power cycles. The module status led is solid green and all other leds are off. No communication is possible from the Ethernet port or from the backplane. The display would hang with PASS.

- If you write custom EtherNet/IP communication drivers, the following anomalies have been corrected:
  - When a poorly formed Class 3 message is received on the backplane or over Ethernet, it is possible that the module appeared to lock up.
  - Bad UDP checksum would be created when UDP "do not fragment" bit is set. This bit is only used when a user writes a custom Ethernet/ IP driver.
  - When processing an open message that is not correctly sized the module could lock up, the firmware now verifies the size of a forward open message and processes it without system lock up.

Previous Revisions of Firmware
Revision 3.4

Corrected Anomalies

This firmware revision contains two corrected anomalies that apply to modules used in a redundant system:

- A secondary chassis synchronized even if a module wasn't connected to the EtherNet/IP network
- It was possible for the module to erroneously report a duplicate IP address under these conditions:
  - high HMI traffic
  - secondary chassis was powering up (depended on your configuration)

For more information, please refer to the ControlLogix Redundancy System Release Notes, publication 1756-RN608.

Revision 3.3

Enhancements

With this revision of firmware, the 1756-ENBT module supports:

- Embedded EDS (Electronic Data Sheet) file - the module contains its own EDS file within its firmware. This feature requires RSNetWorx™, ver. 5.0 or later.

- DHCP (Dynamic Host Configuration Protocol) - when connected to a network with a DHCP server, that server automatically assigns an IP address to the module. This feature requires RSLogix™ 5000 (ver. 13 or later) or RSLinx (ver. 2.43 or later) software.

- Email - using a MSG instruction, the controller can send email through the module.

- For more information, refer to the EtherNet/IP Modules User Manual, publication ENET-UM001.

Corrected Anomaly

When you use DNS (Domain Name Server) services with the 3.2 firmware revision, it is possible that the module will lock up.

Revision 3.2

Enhancements

- The 1756-ENBT module supports duplicate IP address detection. When you change the IP address or connect the module to an EtherNet/IP™ network, the module checks to make sure that the IP address assigned to this module is not the same as that for any other device on the network. If the module determines that there is a conflict (some other device on the network already has the IP address), the EtherNet/IP port of the module goes into conflict mode, where the module's:

  – OK LED blinks red
  – network (NET) LED is solid red
  – front display indicates the conflict

  For more information on this feature, refer to chapter 3 of the EtherNet/IP Modules in Logix5000 Control Systems User Manual, publication ENET-UM001.

- When used in a ControlLogix™ redundancy system, the 1756-ENBT module supports automatic IP address swapping. During a switchover, the module now swaps its IP address with its partner module in the other redundant chassis. This lets you to use the same IP address to communicate with a primary module regardless of which chassis is primary.

  For more information on this feature, refer to the ControlLogix Redundancy System User Manual, publication 1756-UM523.

IMPORTANT   Automatic IP address swapping is only compatible with revision 13 (or later) of the ControlLogix redundancy release. To determine the exact revision of firmware to use with redundancy, refer to the ControlLogix Redundancy System Release Notes, publication 1756-RN608.

- The embedded web pages for the 1756-ENBT have been enhanced to make them easier to manage and to be more user-friendly.

Revision 2.4

Corrected Anomalies

- When multiple controllers own a remote 1756-ENBT rack using rack optimization, inputs from that remote rack may not update in the controller tag databases. No errors would be reported by the controllers.

- Under certain conditions when using RSLinx version 2.4x.x, a high volume of messages through the 1756-ENBT module would appear. As a result the module may appear to be locked up, but was really overloaded. Momentarily removing the Ethernet connector would temporarily correct the problem.

Revision 2.3

Enhancements

- Beginning with this revision of the firmware, a sub-minor revision has been added when the revision number is scrolled on the display. For revision 2.3 firmware, the display will scroll 2.03.10, where 2=major revision, .03=minor revision, and .10=sub-minor revision.

  This does not affect how you use and refer to firmware revisions of released products - continue to use the major and minor revision numbers only.
  Note: Electronic Keying in RSLogix 5000 keys to the major and minor revisions. The sub-minor number cannot be used for keying.

- Added redundancy support for EtherNet/IP explicit messaging in a ControlLogix redundancy system (such as in HMI applications). With this firmware revision, the 1756-ENBT module can be placed directly in a redundant chassis. Minimum 1756-ENBT requirements for ControlLogix redundancy support include:

  - hardware, CAT REV E01

  - firmware, revision 2.3

To learn how to use the 1756-ENBT module in a redundant system, refer to the ControlLogix Redundancy System Release Notes, publication 1756-RN608.

Corrected Anomalies

- erroneous generation of UDP checksum

- the falsely-reported "module in use" error when the product is running near its capacity

Software Compatibility Requirements

To use the 1756-ENBT module, you need the correct versions of RSLogix 5000 and RSLinx™ software.

- RSLogix 5000 - For I/O control, use version 8.02 or later. However, the 1756-ENBT module works with the 1756-ENET/B selection in version 7.0 if the 'Compatible' or 'Disable' keying options are used. For Gateway applications, there are no software compatibility issues with RSLogix 5000.

- RSLinx, version 2.30.01 or later

Other Important Considerations

Ethernet Switch Port Configuration

The 1756-ENBT module supports the following Ethernet™ settings:

- 10Mbps half duplex

- 10Mbps full duplex

- 100Mbps half duplex

- 100Mbps full duplex

Depending on the module and firmware revision, different port configuration is required:

Modules with Firmware Revision 1.40 or Earlier
Mode selection is done automatically based on the IEEE 802.3u autonegotiation protocol. If a module is connected to a port on a 10/100Mbps switch, you must set this port to autonegotiate.

If this port is set manually to one of the modes listed above, a mismatch between module and switch modes of operation may occur. This will result in significant reduction of system performance

Modules with Firmware Revision 1.61 or Later
Starting with version 12.0 of RSLogix 5000, you can manually configure the

communication rate and duplex of the ENBT module. Additionally, you can manually configure the communication rate and duplex on both the ENBT module and the switch port that is connected to the module. However, the configurations must match on both devices.

Changing Ports on an Ethernet Switch - Autonegotiation Setting Only
If you reconnect the module from one port to another one, regardless of whether the new port is on the same or a different switch (or a hub), do the following:

1. Disconnect the cable from the port to which the module is currently connected.

2. Wait until the module Link Status LED is off.

3. Connect the cable to the new port.

This procedure will restart the autonegotiation process at the module side. Another option is to restart the module itself.

Changing the Subnet Mask

After setting or changing the Subnet Mask on an already configured 1756-ENBT module, you must cycle power on the module for the Subnet Mask to take effect.

Diagnostic Counters

RSLogix 5000 software and RSLinx software display many diagnostic counters for the 1756-ENBT module. However, some of these fields are not supported by the module. The fields that are not supported are permanently displayed as 0.

IGMP Support

The 1756-ENBT module supports the following versions of IGMP (Internet Group Management Protocol):

- Version 1.0 (firmware revision 2.4 and earlier)
- Version 2.0(firmware revision 3.2 and later)

Performance Considerations

- In general, the 1756-ENBT module is capable of supporting 5,000 packets/sec. However, it is possible in some applications, depending on the combination of connection count, RPI settings, and communication formats, that the product may be able to achieve only 4,000 packets/sec.

- When performing both implicit and explicit communications in a EtherNet/IP system using the 1756-ENBT module, communications such as HMI may slow down I/O communication performance in applications with high node count (64 and above). Adjust RPI values or put in additional ENBT modules when necessary to achieve desired performance in the system.

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