

IB-Lite

Plug-in ethernet module for IL-NT and IC-NT platform

SW version 1.11.1

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1 General information

1.1 Version information

This document supplements the IB-Lite-1.8 Reference guide.

IMPORTANT: If you are updating firmware and your current version is 1.0, you have to program firmware IB-Lite-1.0.1.BIN first, then wait for restart of the module and then you can upgrade to the latest firmware.

IMPORTANT: If you are going to update controller firmware we strongly recommend to update IB-Lite firmware as well. The proper order is to update first the IB-Lite module and then the controller

1.2 Clarification of notation

Note: *This type of paragraph calls readers attention to a notice or related theme.*

IMPORTANT: This type of paragraph highlights a procedure, adjustment etc., which can cause a damage or improper function of the equipment if not performed correctly and may not be clear at first sight.

Example: This type of paragraph contains information that is used to illustrate how a specific function works.

2 Changes in the version 1.11.1

2.1 Repairs

- ▶ Handling of segmented ComAp/TCP messages
 - Programming of configuration and/or firmware via AirGate might have failed due to segmentation of the protocol messages. AirGate applied segmentation (which is NOT an incorrect behavior) in recent months as a result of reconfiguration of the system. The segmented messages were not handled properly in the IB-Lite module.
 - The “normal” data communication was not affected by this bug as the messages are small in this case.

3 Changes in the version 1.11.0

3.1 New features

- ▶ SNMP Trap trigger condition
 - The trigger condition for sending a SNMP Trap has been changed.
 - The original condition was “new item appeared in the Alarm List”
 - The new condition is “the contents of the Alarm List has changed”

3.2 Repairs

- ▶ SMTP server authentication CRAM-MD5
 - Uppercase hex characters were used in the digest hex string, which might lead to refusing the user credentials even if they were correct.
 - If the username was longer than 15 characters the login message that was sent to the server was malformed and thus the server refused it.
- ▶ DNS request message alignment
 - The DNS request sent by the module was not properly aligned. It contained one extra byte at the end, which rarely caused the DNS server replied by "format error".
- ▶ DHCP client modifications
 - DHCP negotiation using realy agent is supported. This function is required when the DHCP server is located in another network segment and the segment gateway is relaying the DHCP messages (packets).
- ▶ DNS client modifications
 - The DNS transaction number is now randomized.
 - The UDP source port for DNS transactions is now randomized.
- ▶ Web interface issue
 - Using HTTP POST method instead of GET might allow the misbehaving user to get access to the SCADA page without valid access code.

4 Changes in the version 1.10.1

4.1 Repairs

- ▶ Incorrect implementation of SNMP scalar variable
 - If GET operation was issued for a scalar variable and the request had not contained the instance number or had contained instance number different than ".0" the module did not return an error response.
 - If GET-NEXT had been issued for a scalar variable and the request had not contained the instance number the module returned response with wrong variable (wrong OID).
 - If GET-NEXT had been issued for a scalar variable the module returned response with missing instance number at the end of the OID.

5 Changes in the version 1.10.0

5.1 New features

- ▶ Support for new controller firmware versions
 - New controller firmwares as e.g. IntelliPro-1.5 now supported

5.2 Repairs

- ▶ DNS issues
 - If an empty domain name was put into some setpoint like airgate address, SMTP address etc. this empty name was passed to the DNS client, which resulted in the client and related services stopped working.
- ▶ It was not possible to connect to the module via MODBUS/TCP or ComAp protocol if the module is in fixed IP address mode
 - If the ethernet cable was unplugged for more than cca 10 seconds while the communication was established in a client socket the socket was permanently lost. If all sockets of the given protocol were lost consequently it was not possible to connect via that protocol at all.
 - Restart or reboot of neighbouring ethernet device (e.g. router) is equivalent to the situation when the ethernet cable is unplugged for a while and could cause this issue as well.
- ▶ Controller address in ComAp/TCP protocol
 - Controller address was not respected in the ComAp protocol. That resulted IB-Lite responded not only to connection with matching controller address, but to all connections regardless of the address.

6 Changes in the version 1.9.0

6.1 New features

- ▶ Adjustable port number for communication with SMTP server
 - - It is possible to specify the TCP port, which will be used for communication with the SMTP server when active e-mail is to be sent.
 - - The port number can be specified as number appended with a colon to the SMTP server domain name or IP address in controller setpoints, group Comms settings"

Example: smtp.mydomain.com:9925
 - - If the port number is not specified or it is specified incorrectly default port 25 will be used

6.2 Repairs

- ▶ Non working AirGate after ethernet cable is replugged
 - If IB-Lite was used with manually assigned IP address (i.e. IP Address Mode = MANUAL) the connection to AirGate was not restored after the Ethernet cable had been unplugged and replugged again.
- ▶ SNMP protocol problem
 - If GET-NEXT operation was issued with an OID above the controller root OID (1.3.6.1.4.1.28634.x) the IB-Lite responded with "generic error".
- ▶ Controllers with more than 255 setpoints (e.g. IntelliPro-1.3)
 - If the controller contains more than 255 setpoints the controller web pages do not work with IB-Lite-1.8.1 and previous versions.

7 Changes in the version 1.8.1

7.1 Repairs

- ▶ Encoding of integer data into SNMP
 - Controller values of integer16 type were in range 128 to 255 incorrectly encoded into SNMP INTEGER data as -128 to -1.
- ▶ Multiple controllers having the same AirGate ID
 - If an IB-Lite device was used in controller which does not support AirGate, the IB-Lite obtained AirGate ID anyway, however the ID was corresponding to another controller in which the IB-Lite was used previously.
 - This might result in multiple controllers having the same AirGate ID.
- ▶ Watchdog reset
 - The IB-Lite might very rarely pass through a watchdog reset due to timeout or failure in the internal communication between IB-Lite and the controller.

8 Changes in the version 1.8.0

8.1 New features

▶ SNMP

- SNMP v1 Agent was incorporated into the IB-Lite module.
- MIB table for each particular controller is to be created from it's configuration using LiteEdit
- MIB table is unique for each controller
- SNMP Agent is alternative function to MODBUS Server.
- SNMP Agent is to be enabled/disabled in the configuration web page.
- **Controller firmware must support SNMP function as well to enable using it in IB-Lite. Please refer to the controller new features lists for information about this support.**

▶ MODBUS/TCP

- Requiring access code for MODBUS/TCP communication can be disabled in the configuration web page.
- MODBUS/TCP server can be disabled in the configuration web page. This must be done if SNMP Agent is to be enabled as both functions are alternative to each other.

▶ Event e-mails

- Active e-mails issued by "events" are supported.

▶ History based on engine hours instead of RTC clock

- Controllers which do not contain RTC clock are properly supported.
- Engine hours are shown in history records in web pages and active e-mails.

▶ SNTP protocol

- Protocol for obtaining current time from internet (needed for proper timestamp in active e-mails) was changed from TIME to SNTP as TIME protocol is getting obsolete.

▶ Direct ethernet connection in AirGate mode

- Direct ethernet connection is possible regardless of AirGate is switched on or not.
- AirGate connection is possible only if AirGate is switched on.

▶ Multilanguage support in e-mails

- Base64 encoding of e-mail body is used. 8BITMIME ESMTP feature is no more required.

▶ LAN Discovery function

- LAN Discovery function is supported.
- This function allows in combination with proper version of LiteEdit or IntelliMonitor to connect without remembering IP addresses to all modules in the current segment of the LAN to which the modules as well as the computer are connected.

8.2 Repairs

- ▶ DHCP issues
 - Source IP address 0.0.0.0 is used for DHCP handshaking. IP address 0.0.0.0 is also displayed in the controller setpoints until DHCP handshaking is completed and the module obtained new address.
 - New DHCP handshaking is initiated when ethernet cable is reconnected.
 - DHCP rebind/renewal/lease time are handled properly.
- ▶ SMTP issue
 - Fixed bug: reply from an ESMTP server which was split into multiple IP packets was ignored.
- ▶ DNS issue
 - In DHCP mode the first DNS server from the list obtained from DHCP (= primary DNS server) is used. In previous version the last DNS server was used and this could cause problems with domain name translations especially in local networks, where the secondary or even tertiary DNS server is outside the local network and can not serve DNS records from the local network.
- ▶ Other
 - Several other minor bugs fixed.

9 Changes in the version 1.7.1

9.1 Repairs

- ▶ Configuration table CRC reading
 - Fixed incorrect byte order of the read data when reading the CRC of the configuration table.
 - This bug caused the configuration table was read from the controller always again when a connection was opened in LiteEdit/InteliMonitor, even if it was already present on disk.
 - **This bug caused the controller was not possible to be monitored using WebSupervisor.**

10 Changes in the version 1.7.0

10.1 New features

- ▶ Controller versions
 - All latest versions of the controller firmware (as e.g. IL-NT-WSUP-1.2 or IL-NT-1.6) are now fully supported including web access.
- ▶ Customized logo
 - The logo, which is displayed at the controller web pages, can be replaced by a custom one.
 - Custom logo is to be uploaded via the service web pages.
 - The logo must be GIF file with name "logo.gif", preferred size is 100x45 pixels.
- ▶ Selectable ethernet speed
 - It is possible to select the ethernet speed (10Mbit or 100Mbit). The selection is available at the service web pages.
- ▶ New browsers
 - Currently supported browsers: IE 8, IE 9, Firefox 10, Opera 10, Google Chrome.
- ▶ Password and Access code change over the Web
 - Because of security reasons it is no longer possible to change password and/or Access code via the controller web pages. Use LiteEdit instead, please.

IMPORTANT: Due to high power supply requirements of the IB-Lite ethernet interface in 100Mbit mode this mode should be used only in exceptional cases when connected device is not compatible with 10Mbit mode (e.g. MAXXON wireless modem) and only at 24V-supplied systems. There are limitations for 12V systems, in this case please consult your situation with ComAp technical support.

10.2 Repairs

- ▶ DHCP incompatibility issue
 - IB-Lite DHCP client was not working with some DHCP server implementations as e.g. in small TP-LINK routers (TL-R402M).
- ▶ DNS issue
 - In DHCP mode the first DNS server from the list obtained from DHCP (= primary DNS server) is used.
 - In previous versions of IB-Lite firmware the last one was used and this could cause problems with domain name translations especially in local networks, where the secondary or even tertiary DNS server is outside the local network and can not serve DNS records from the local network.
- ▶ Other
 - Improved overall performance and stability by fixing several minor issues.

11 Changes in the version 1.6.0

11.1 New features

- ▶ Configuration table v.5 supported
 - Support for following controllers was added: InteliPro, IC-NT-STD-1.3
- ▶ Modbus/TCP access code
 - There are new dedicated registers for entering the AccessCode via Modbus/TCP.
 - The register numbers are 46339-46346 (register address 6338-6345).
 - The previous method using register address 24535 remains working as well.
 - Example of the Modbus message is following (in HEX):

01 10 18 C2 00 08 10 30 00 00 00 00 00 00 00 00 00 00 00 00 FE F3	
01	Controller address
10	Modbus function (16dec – Write multiple registers)
18C2	Register address (18C2hex = 6338dec = register 46339)
0008	Number of registers
10	Length of the data (Number of registers x 2B)
30000000...	Access code string (16 chars, null-terminated, ASCII, here "0")
FEF3	CRC

12 Changes in the version 1.5.2

12.1 New features

- ▶ Firmware upload failure detection
 - An error message is displayed If a failure occurs during new firmware upload.

13 Changes in the version 1.5.1

13.1 Repairs

- ▶ Automatic reset after firmware programming
 - It might rarely happen, that the module did not perform automatic reset after a new firmware had been uploaded. The module needed to be reset manually (power off/on).

14 Changes in the version 1.5.0

14.1 New features

- ▶ AirGate support
 - The module supports AirGate technology. This feature must be supported also in controller firmware.
- ▶ Automatic assignment of IP address
 - Except having static pre-adjusted IP address the module can be adjusted to obtain IP address automatically from a DHCP server. This function is intended especially for using in AirGate mode. This function must be also supported in the controller firmware (the controller must contain appropriate setpoint).
- ▶ Configuration via controller setpoints
 - If the module is used with latest controller firmwares all the module adjustment is performed via the controller setpoints. That means the adjustment can be done before the module is plugged-in into an network socket and it is no more necessary to connect it via cross-wired ethernet cable to a computer and adjust it via the configuration web pages.
 - If the module is used with a previous controller firmware, which does not provide the IB-Lite related setpoints, the adjustment procedure remains the same as it was before, i.e. via the configuration web pages.
- ▶ Number of web clients
 - Only one web client can be connected to the module at one moment.

14.2 Repairs

- ▶ Status text objects on web pages
 - The status texts in the left bottom part of the scada web page were not displayed correctly.
- ▶ Controller history on web pages
 - Occasionally not all records contained in the controller history were displayed on the history web page.

15 Changes in the version 1.4.0

15.1 Repairs

- ▶ Problems with IE6 and IE7
 - Fixed issue with impossible login into the controller web pages (i.e. entering the access code) from the Internet Explorer 6 and 7 after the browsers have been updated by the windows update service in January 2010.

16 Changes in the version 1.3.0

16.1 Repairs

- ▶ Freezing of the web pages
 - The IB-Lite web pages could occasionally get frozen while loading or updating.
- ▶ Incorrect cache control for the web page files
 - The “expire” timestamps of web page files were not calculated correctly. This bug may cause in the year 2010 and following, that the files will not be cached, but always read-out from the IB-Lite, which results in increase of the transferred data.

17 Changes in the version 1.2.0

17.1 Repairs

- ▶ Dropouts in communication with LiteEdit/InteliMonitor
 - Communication dropouts (red indication in the DDE server) sometimes occurred, especially short after a connection had been created.
- ▶ Problems with firmware/configuration programming
 - Sometimes it was not possible to program firmware or configuration into the controller. The controller displayed "Programming", however it performed reset after a while and the previous firmware/configuration remained there. LiteEdit raised a message "Programming was not correct".
- ▶ Access code forgetting
 - LiteEdit remained in "preparing" state (yellow indication) after a firmware of certain version/branch had been programmed. Access code had to be entered again to get the LiteEdit running.

18 Changes in the version 1.1.0

18.1 New features

- ▶ Controller web pages
 - Controller web pages have been added. The pages are available directly at the root of the IB-Lite's IP address. I.e. if your IB-Lite has IP address 192.168.1.200, then just type the address <http://192.168.1.200/> into your browser.
 - Controller web pages do not exist in old controller firmwares. The first standard firmwares containing web pages are IL-NT-1.5 and IC-NT-1.2
- ▶ Authentication method
 - Authentication based on Javascript is used for login to service pages as well as for controller pages instead of “basic” http authentication in order to improve the security. Default password for service pages is “comap”, controller access code is used for controller web pages.
 - Adjust your browser security settings to enable running javascript. You can enable it generally or create exceptions only for IB-Lite IP addresses.

19 Related information

19.1 Available related documentation

Documents
IB-Lite-1.8 Reference guide
IB-Lite-1.11.0 New Features

Table 19.1 Available documentation

20 Notes

20.1 Document history

Revision number	Related sw. version	Date	Author
18	1.11.1	11.09.2018	Adéla Klimentová
17	1.11.0	21.09.2017	Adéla Klimentová
16	1.10.1	16.3.2015	Adéla Klimentová
15	1.10.0	8.1.2015	Adéla Klimentová
14	1.9.0	9.12.2013	Adéla Klimentová
13	1.8.1	14.6.2013	Adéla Klimentová
12	1.8.0	30.11.2012	Adéla Klimentová
11	1.7.1	3.8.2012	Adéla Klimentová
10	1.7.0	1.3.2012	Adéla Klimentová
9	1.6.0	30.3.2011	Adéla Klimentová
8	1.5.2	2.3.2011	Adéla Klimentová
7	1.5.1	22.2.2011	Adéla Klimentová
6	1.5.0	3.2.2011	Adéla Klimentová
5	1.4.0	24.2.2010	Adéla Klimentová
4	1.3.0	8.12.2009	Adéla Klimentová
3	1.2.0	16.11.2009	Adéla Klimentová
2	1.1.0	6.10.2009	Adéla Klimentová
1	1.0.0	19.12.2008	Jan Tomandl