

Anybus Wireless Bridge Ethernet – Bluetooth Access Point AT Command Specification

Document Revision

Document number: 1

Release: November 12, 2014

Document version: [1](#)

Abstract

This document specifies the AT commands used to control and configure the Anybus Wireless Bridge Ethernet – Bluetooth Access Point.

See the Anybus Wireless Bridge Ethernet – Bluetooth Access Point product guide for use cases.

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AT command syntax

Command Line Format

Each command line sent from the DTE to the DCE is made up of a prefix, body and terminator. As prefix for the AT commands, only "AT" (ASCII 65, 84) and "at" (ASCII 97, 116) can be used. There is no distinction between upper and lower case characters. The body is a string of characters in the range ASCII 032-255. Control characters other than <CR> (carriage return; ASCII 13) and <BS> (back space; ASCII 8) in a command line are ignored.

The terminator is <CR>. Commands denoted with a "*" character are extended AT commands, i.e. gateway specific AT commands. Multiple commands in the same command line are not supported. Each command has to be terminated by a <CR> before a new command can be sent. A command must not be longer than 300 characters.

A command can either be:

- Read commands without parameters: AT<command>?<CR>
- Write commands without parameters: AT<command><CR>

- Read and write commands with parameters: AT<command>=<parameter1>, <parameter2>, ...<parameterN><CR>

Responses are sent back to the host and can be any of the following:

- Successful final message: <CR><LF>OK<CR><LF>
- A read command will precede the OK response with the read parameters. The form is <CR><LF><command>:<param1>,<param2>,...,<paramN><CR><LF> String results will have "" around them.
- Successful intermediate/final message with parameters follows an OK message in some commands. In these cases the OK message works as a confirm message only. <CR><LF><result_response>:<parameter1>, parameter2>, ...<parameterN>
- Error message: <CR><LF>ERROR<CR><LF>

Limitations

When an AT command is issued with the store parameter set to 1, all previous values will be stored as well, regardless of whether the previous commands were issued with the store parameter set to 1 or not.

Data Types

The definition of each command specifies the data types used for values associated with the command.

There are four different data types:

- String
- Integer
- IP_Addr
- MAC_Addr / Bd_Addr

These are described below:

String

A string shall consist of a sequence of displayable characters from the ISO 8859-1 (8-bit ASCII) character set, except for characters "\", "" and characters below 32 (space). A string constant shall be delimited by two double-quote (""") characters, e.g. "Donald Duck". The "\" character is used as an escape character to insert raw bytes in a string. If the double-quote character (""") is to be used within a string, e.g. "My friend "Bono" is a singer", they have to be represented as "\"22". If the back-slash character ("\") is to be used within a string constant, it has to be represented as "\"5C". An empty string is represented by two adjacent delimiters, "".

Integer

An integer value consists of a sequence of characters all in the range {0...9}. An integer can also be represented by as hexadecimal string, e.g. 15 can be written as "0x0000000F", excluding the double-quote characters.

IP_Addr

A valid IP address consists of four integer values separated by dots. Valid range of each integer value is {0...255}. An example IP address is "192.168.0.1", excluding the

double-quote characters.

MAC_Addr / Bd_Addr

A MAC or Bd address consists of a sequence of six values, expressed in two-digit hexadecimal, in sequence. The hexadecimal values are grouped together without delimiters. An example MAC address is "00A0F7101C08", excluding the double-quote characters.

Standard AT Commands

AT Attention Command

Syntax	Description
AT<CR>	Attention command determining the presence of a DCE, i.e. the Wireless Bridge.

Responses	Description
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT* List Available Commands

Syntax	Description
AT*<CR>	Lists the supported AT commands.

Responses	Description
<CR><LF><cmd1><CR><LF><cmd2><CR><LF>...	This response is sent to the host for every supported command.
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	
<CR><LF>ERROR<CR><LF>	
	Successful response.
	Error response.

AT&F Restore to Factory Settings

Syntax	Description
AT&F<CR>	This command instructs the unit to set all parameters to their defaults as specified by the manufacturer.

Responses	Description
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT&F0 Restore to Factory Settings

Syntax	Description
AT&F0<CR>	See description of the AT&F Restore to Factory Settings command.

Responses	Description
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<CR><LF>OK<CR><LF> Successful response.
<CR><LF>ERROR<CR><LF> Error response.

ATE Echo Off

Syntax	Description
ATE<CR>	Set whether or not the gateway shall echo incoming characters.
Responses	Description
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

ATE Echo On/Off

Syntax	Description	
ATE<echo_on><CR>	Set whether or not the gateway shall echo incoming characters.	
ATE?	Read current echo setting.	
Parameters	Type	Description
echo_on	integer	0 = Unit does not echo characters during command state and online command state. 1 = Unit echoes characters during command state and online command state.
Responses	Description	
<CR><LF>echo_on<CR><LF>OK<CR><LF>	Successful read response	
<CR><LF>OK<CR><LF>	Successful response.	
<CR><LF>ERROR<CR><LF>	Error response.	

ATQ Result Codes On/Off

Syntax	Description	
ATQ<result_off><CR>	The setting of this parameter determines whether or not the unit transmits result codes to the DTE. When result codes are being suppressed, no portion of any intermediate, final, or unsolicited result code - header, result text, line terminator, or trailer - is transmitted. Information text transmitted in response to commands is not affected by the setting of this parameter.	
ATQ?	Read current result code setting.	
Parameters	Type	Description
result_off	integer	0 = Unit transmits result codes. 1 = Result codes are suppressed and not transmitted
Responses	Description	
<CR><LF>result_off<CR><LF>OK<CR><LF>	Successful read response	
<CR><LF>OK<CR><LF>	Successful response.	

<code><CR><LF>ERROR<CR><LF></code>	Error response.
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ATS2 Escape Character

Syntax	Description
ATS2=<esc_char><CR>	Changes the escape character to esc_char.
ATS2?	Read escape character
Parameters	Type
esc_char	integer
esc_char is the ASCII value of the new escape character. E.g. 47 equals '/'. The default value is '/'. Note that the escape sequence will be "///". Hence, the character is used three times.	
Responses	Description
<CR><LF>esc_char<CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

ATS3 Command Line Termination Character

Syntax	Description	
	Write command line termination character.	
	This setting changes the decimal value of the character recognized by the DCE from the DTE to terminate an incoming command line. It is also generated by the DCE as part of the header, trailer, and terminator for result codes and information text along with the S4 parameter	
ATS3=<line_term><CR>	The previous value of S3 is used to determine the command line termination character for entry of the command line containing the S3 setting command. However, the result code issued shall use the value of S3 as set during the processing of the command line. For example, if S3 was previously set to 13 and the command line "ATS3=30" is issued, the command line shall be terminated with a CR, character (13), but the result code issued will use the character with the ordinal value 30 in place of the CR.	
ATS3?	Read command line termination character.	
Parameters	Type	Description
line_term	integer 0...127 (13, CR is default)	
Responses	Description	
<CR><LF>line_term<CR><LF>OK<CR><LF>	Successful read response	

<line_term><LF>OK<line_term><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

ATS4 Response Formatting Character

Syntax	Description
	Write response formatting character.
ATS4=<term><CR>	This setting changes the decimal value of the character generated by the DCE as part of the header, trailer, and terminator for result codes and information text, along with the S3 parameter.
	If the value of S4 is changed in a command line, the result code issued in response to that command line will use the new value of S4.
ATS4?	Read response formatting character.

Parameters	Type	Description
term	integer 0...127 (10, LF is default)	

Responses	Description
<CR><LF>term<CR><LF>OK<CR><LF>	Successful read response
<CR><term>OK<CR><term>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

ATS5 Backspace character

Syntax	Description
	Write backspace character.
ATS5=<backspace><CR>	This setting changes the decimal value of the character recognized by the DCE as a request to delete from the command line the immediately preceding character.
ATS5?	Read backspace character.

Parameters	Type	Description
backspace	integer 0...127 (8, BS is default)	

Responses	Description
<CR><LF>backspace<CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

ATS General Settings S Register Manipulation

Syntax	Description
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ATS<register>=<value><CR> Write to a general settings S register.

ATS<register>? Read from a general settings S register.

Parameters Type

Description

register	integer	Any of the registers described below.
value	integer	-2147483648...2147483647 or 0x00000000...0xFFFFFFFF. Valid values for each register are listed below.

Responses

Description

<CR><LF>value<CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

Register

Description

Baseband/GAP registers

1000	Connect period in ms. 10...60000 (default 5000, could be overridden by LEM)
1001	Page timeout in ms. 80...40000 (default 2000, could be overridden by LEM)
1002	Inquiry timeout in ms. 80...60000 (default 5000, could be overridden by LEM)
1003	Enable fast connect. Increased page scan activity for faster response to incoming connections. 0: Disable fast connect 1: Enable fast connect (default)
1004	Enable fast discovery Increased inquiry scan activity for faster detection of the device during inquiry or device discovery. 0: Disable fast discovery 1: Enable fast discovery(default)
1005	WLAN channel skipping. 4 WLAN channels can be excluded but no more than a total of 59 Bluetooth channels can be excluded. If more than 59 BT channels are being excluded, an error will be generated. This must be set on the Master device, see AT*AGMSP for more info about Master Slave Policy. The value is divided in four bytes and each byte represents one WLAN channel according to the following: Bit 0-3: number of channels to be skipped valid values are, 0x0-0xF: $x * 2 - 1$ Bit 4-7: WLAN channel to be skipped (0x0: disable, 0x1-0xE: WLAN channel to exclude) Example: To exclude 19 BT channels around WLAN channels 1, 6 and 11 the value shall be 0x001A6ABA

	Constraint: If AT*AMCM is configured to exclude any channels, it has higher priority after a power cycle.
1006	Reserved
	Link Policy. Only valid if packet policy AT*AMPP is set to 4.
1007	Constraint: Available from 2.2.0
	Link Policy Parameter. Only valid if packet policy AT*AMPP is set to 4.
1008	Constraint: Available from 2.2.0
	Inquiry Class of Device filter, see AT*AGLC for more info. A found device must match this bitmask to be reported to the higher layers, e.g. to find all networking devices, bit 17 should be set (0x00020000 or 131072). Bit 0-1 and 24-31 are reserved and will be ignored. (default: 0x00020000, meaning that only network enabled devices will be found).
1009	
1010	Reserved
	Limited pairing timeout after power up, only valid if Limited is used as security mode, see AT*AGSM and AT*AGLP
1011	0: disable (default) > 1: timeout in seconds before the gateway is nonpairable
1012	Master Slave Policy. Use AT*AGMSP (default: 1)
	Low Emission Mode. Use AT*AMLEM For LEM 64, use the following:
1013	Connect period: As specified in S register 1000 Page timeout: As specified in S register 1001 Inquiry timeout: As specified in S register 1002
1014	Pairing mode. Use AT*AGPM (default: 2)
1015	Connectability Mode. Use AT*AGCM (default: 2)
1016	Discoverability Mode. Use AT*AGDM (default: 3)
1017	Security Mode. Use AT*AGSM (default: 1)
1018	Class of Device. Use AT*AGLC (default: 0x020000)
1019	Server Profile. Use AT*ADDSP (default: 100)
1020	Link supervision timeout (default 2000)
1021	Reserved
1022	Max output power. Use AT*AMMP (default: 20)

	External Connection Control. If enabled, the *ADCI event is sent when a remote device wants to connect. It must be answered before any communication can start. 0: Disable 1: Enable
1023	
1024	Packet Policy. Use AT*AMPP
1025	Data on Connection Complete. Use AT*ADOC Limit Data to Peers 0: Disable (default) 1: Enable. If set, only unicast data addressed to the connected peer and broad/multi-cast data will be sent on the wireless link.
1026	
Roaming registers	
1100	Reserved
1101	Reserved Link quality threshold. The value is divided into 2 bytes (the two least significant bytes) where the lowest byte sets when the event shall be sent and the higher byte sets what value must be reached before re-sending the event. Valid values (for each byte): 0...100 (0x00-0x64)
1102	Example: 0x0000504B (or 0x504B) means that an *AGLQW event is sent when the link quality drops below 75 (0x4B). A new event is sent only after the link quality has climbed above 80 (0x50). To receive this event, link quality must be enabled to be shown on the SMART LEDs using the 1211=2 and 1212 (how often the link quality is read, max one event is sent every other read interval). General events must also be configured, see AT*AMESS .
	Note: Not available in AP mode.
1103	Reserved
1104	Reserved Roaming scheme 0: Connect to name, see connect to name scheme (default) 1: Connect to next. This will simply connect to the next device configured with AT*ADWRL Write Roaming List
1105	2: Connect by command. This will get the BD address or BD name from the command. If the BD name is specified, it will use the configured connect to name scheme. Connect to name scheme
1106	0: Connect to name. This will make an inquiry and then get the name of the found devices. When a matching name is found, a

connection attempt will be done. If the connection fails, it will try with the next found and so on. (default)

1: Connect to first name (first found). This will make a limited inquiry searching for 1 unit, get the name of the found unit and, if the name matches, connect to it.

2: Connect to best name (highest RSSI value). This will make an inquiry, sort the devices regarding to the RSSI value. Then it will start from the device with best RSSI value, get the name and connect if it matches the desired name. If it fails, it will go to the next device and so on.

3: Reserved

1107 Reserved

1108 Reserved

1109 Max inquiry output power.
This is the maximum output power allowed during inquiry.
(default: 20)

1110 Reserved

Miscellaneous

1200 Time in seconds before the LEDs is turned off. 0 will disable the feature.

1201 Reserved

1202 Reserved

1203 Disable Link configuration if broadcast

1204 Reserved

1205 Reserved

1206 Reserved

Event Subscriber Protocol
Value deciding how events should be sent.
0: disable (default)
1: Messages sent by AT over TCP
2: Messages sent by AT over Layer-2 (mac_address must be specified, using [AT*AMESS](#))
3: Syslog
4: Reserved
5 - 255: reserved

1207
1208 Event Subscriber Port / Ethernet type
(default: 0)

1209 Wireless Interface Disable. Use [AT*AMWID](#)
(default: 0)

1210 Bridge Cache Timeout
Time in seconds before mac address cache table in the bridge throws away an entry.
(default: 2)

	Bit mask representing SMART LED Mode when smart mode is finished
	Bit 0: RSSI
1211	Bit 1: Link Quality (default)
	Bit 2-31: Reserved
	Note: Only applicable in gateway mode, see AT*AGOM . In access point mode, the Smart LEDs indicates the number of connections.
1212	Smart LED Update timeout in seconds (default: 1)
	Enable User Management
1213	0: disable (default)
	1: enable
	Smart mode button push functionality
1214	0: Disconnect/connect (default)
	1: Toggle ALL LEDs
	2: Reset
	Smart mode button hold functionality
1215	0: Disconnect/connect (default)
	1: Toggle ALL LEDs
	2: Reset
	External trigger push functionality
1216	0: Disconnect/connect (default)
	1: Toggle ALL LEDs
	2: Reset
	External trigger hold functionality
1217	0: Disconnect/connect (default)
	1: Toggle ALL LEDs
	2: Reset
1218	Reserved
1219	Reserved
1220	Maximum time to wait for first push on SMART button. Default value is 5000 ms.

Profinet

1900	Reserved
1901	Reserved
	Profinet prioritization:
1902	0: Disable (default)
	1: Enable
1903	Reserved
1904	Ethernet type to prioritize if Profinet prioritization is enabled

Network

5000	Turn on/off TCP keep-alive packets. It is important to understand that sending frequent keep-alive packets usually isn't a good solution to detect dropped connections. Detecting dead links should be done on a higher level, i.e. in the user application protocol. There is a lot of information available on the subject on
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the web.

0 = TCP keep-alive packets turned off (default)
1 = TCP keep alive packets turned on

5001 Time in milliseconds for a TCP connection to be idle before a keep-alive packet is sent.

0...2147483647 (default 7200000 = 2 hours)

5002 Time in milliseconds between keep-alive packets after a keep-alive packet has been lost.

0...2147483647 (default 75000 = 75 seconds)

5003 Number of lost keep-alive packets to wait before a TCP connection is reset.

1...255 (default 9)

GAP Commands

AT*AGDM Discoverability Mode

Syntax		Description
AT*AGDM=<discoverability_mode>,<store_in_startup_database><CR>		Write the current GAP discoverability mode.
AT*AGDM?<CR>		Read the current GAP discoverability mode.
Parameters	Type	Value
discoverability_mode	integer	1: GAP non-discoverable mode 2: GAP limited discoverable mode 3: GAP general discoverable mode (default value) 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGDM:<discoverability_mode>	Successful read response.
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGCM Connectability Mode

Syntax	Description	
AT*AGCM=<connectability_mode>,<store_in_startup_database><CR>	Write GAP connectability mode.	
AT*AGCM?<CR>	Read GAP connectability mode.	
Parameters	Type	Value

connectability_mode	integer	1: GAP non-connectable mode 2: GAP connectable mode (default value) 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGCM:<connectability_mode> <CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGPM Pairing Mode

Syntax	Description
AT*AGPM=<pairing_mode>, <store_in_startup_database><CR>	Writes the GAP pairing mode.
AT*AGPM?<CR>	Reads the pairing mode.

Parameters	Type	Value
pairing_mode	integer	1: GAP non-pairable mode. 2: GAP pairable mode (default value). 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGPM:<pairing_mode> <CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGSM Security Mode

Syntax	Description
AT*AGSM?<CR>	Reads the security mode.
AT*AGSM=<security_mode>,<store_in_startup_database><CR>	Writes the security mode.

Parameters	Type	Value
security_mode	integer	1. Security Disabled (default value) - Remote Device BT 2.1: Auto accept (No man-in-the-middle attack protection, encryption enabled)

- Remote Device BT 2.0: Authentication and encryption disabled.

2. Security Enabled - Enforce BT 2.0 (Service level authentication and encryption enabled)

Note: The device is not BT 2.1 qualified for this setting. It is only included for backward compatibility.

3. Security Enabled - Limited

- Remote Device BT 2.1: Auto accept (No man-in-the-middle attack protection, encryption enabled)

- Remote Device BT 2.0: Authentication and encryption enabled.

The gateway will only be pairable during a limited time (see [AT*AGLP](#)). To enable pairing after a power cycle, refer to S-register 1005.

0: The setting will only be valid for the current power cycle.

store_in_startup_database integer 1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGSM:<security_mode> <CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGOM Operational Mode

Syntax	Description
AT*AGOM=<omode>, <store_in_startup_database><CR>	Write operational mode, i.e. if the device is operating as access point or wireless bridge
AT*AGOM?	Note: Only applicable on the access point Read operational mode.
Parameters	Type
omode	Integer
	1 = Wireless bridge Ethernet 2 = Bluetooth access point 0: The setting will only be valid for the current power cycle.
store_in_startup_database	Integer
	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGOM:<omode> <CR><LF>OK<CR><LF>	Successful read response

<CR><LF>OK<CR><LF> Successful response
<CR><LF>ERROR<CR><LF> Error response

AT*AGRCD Read Connected Devices

Syntax		Description
AT*AGRCD?<CR>		Retrieves the Bluetooth addresses of every connected device.
Parameters	Type	Value
bd_addr	Bd_Addr	Bluetooth device address of a connected device.
connection_handle	integer	The connection handle identifies the connection.
Responses		Description
<CR><LF>*AGRCD:<bd_addr>, <connection_handle>		This response is sent for every connected device.
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AGND Name Discovery

Syntax		Description
AT*AGND=<bd_addr><CR>		Retrieves the device name of a remote device given its Bluetooth device address.
Parameters	Type	Value
bd_addr	Bd_Addr	Bluetooth device address of the device from which to retrieve the name.
device_name	string	Null terminated string of maximum 240 characters (8-bit ASCII).
Responses		Description
<CR><LF>*AGND:<device_name>		Successful response
<CR><LF>OK<CR><LF>		
<CR><LF>ERROR<CR><LF>		Error message.

AT*AGDD Device Discovery

Syntax		Description
AT*AGDD=<inquiry_Type>,<inquiry_length><CR>		Performs device discovery.
Parameters	Type	Value
inquiry_type	Integer	1: Limited inquiry 2: General inquiry
inquiry_length	integer	Not used, set value to 0 (zero). Use Low Emission Mode and/or the S registers to customize this.
no_of_devices	integer	Value in range {0...255}.

		Number of devices discovered during the inquiry procedure.
bd_addr	bd_Addr	Bluetooth device address of a discovered device.
cod	integer	See the AT*AGLC Local COD command. 0: Device was discovered, but its name could not be retrieved. Parameter 'device_name' is invalid and should be ignored. 1: Parameter 'device_name' is valid.
device_name_valid	integer	
device_name	string	Name of the discovered device. ASCII represented string of maximum of 240 bytes.
rss	integer	See the AT*AGRSS Read RSSI command.

Responses	Description
<CR><LF>*AGDD:<no_of_devices> <CR><LF>OK<CR><LF>	Successful response
*AGDDE:<bd_addr>, <cod>, <device_name_valid>, <device_name>,<rss><CR><LF> <CR><LF>ERROR<CR><LF>	This response is sent for every found device. Error message.

AT*AGI Inquiry

Syntax	Description
AT*AGI=<inquiry_type>,<inquiry_length>, <max_no_of_devices_to_find><CR>	Performs an inquiry procedure to find any discoverable devices in the vicinity.

Parameters	Type	Description
inquiry_type	integer	1: Limited inquiry with RSSI 2: General inquiry with RSSI 3: Limited extended inquiry with RSSI and device name 4: General extended inquiry with RSSI and device name
inquiry_length	integer	Not used, set value to 1 (one). Use AT*AMLEM and the 1002 S register to customize this.
max_no_of_devices_to_find	integer	0: No limitation on the number of devices to find. 1-255: Maximum number of devices to find.
bd_addr	Bd_Addr	Bluetooth device address of a found device.
cod	integer	See the AT*AGLC Local COD command 0: Device was discovered, but its name could not be retrieved. Parameter 'device_name' is invalid and should be ignored. 1: Parameter 'device_name' is valid.
device_name_valid	integer	
device_name	string	Name of the discovered device. ASCII

		represented string of maximum of 240 bytes. Note: Name of discovered devices is only returned by devices supporting Bluetooth 2.1 or later.
rss	integer	See the AT*AGRSS Read RSSI command.

Responses	Description
<CR><LF>*AGI:<bd_addr>,<cod>,<rss>	This response is sent for every found device when 'inquiry_type' is set to 1 or 2.
<CR><LF>*AGI:<bd_addr>,<cod>,<device_name_valid>,<device_name>,<rss>	This response is sent for every found device when 'inquiry_type' is set to 3 or 4.
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error message.

AT*AGUB Unbond

Syntax		Description
AT*AGUB=<bd_addr><CR>		This command unbonds a previously bonded device.
Parameters	Type	Value
		Bluetooth device address of the device subject to unbond.
bd_addr	Bd_Addr	If address FFFFFFFFFF is selected, all bonded devices will be removed.
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AGBD Read Bonded Devices

Syntax	Description	
AT*AGBD?<CR>	Read the bonded devices.	
Parameters	Type	Value
no_of_bonded_devices	integer	Number of bonded devices.
bd_addr	Bd_Addr	Bluetooth device address of the device from which to retrieve the name.
Responses		Description
<CR><LF>*AGBD:<no_of_devices>		Successful response
<CR><LF>OK<CR><LF>		
*AGBDE:<bd_addr><CR><LF>		This response is sent for every found device.
<CR><LF>ERROR<CR><LF>		Error message.

AT*AGFP Fixed Pin

Syntax		Description
AT*AGFP=<pin_code>,<store_in_startup_database><CR>		Write the BT 2.0 fixed PIN code used by the gateway during bond and pairing.
AT*AGFP?<CR>		Read the BT 2.0 fixed PIN code used by the gateway during bond and pairing.
Parameters	Type	Value
pin_code	string	The BT 2.0 PIN code can be either a string of one to sixteen alphanumerical characters or a byte array of one to sixteen bytes. Default value is "0" (zero). 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>*AGFP:<pin_code><CR><LF>OK<CR><LF>		Successful BT 2.0 read response
<CR><LF>OK<CR><LF>		Successful write response.
<CR><LF>ERROR<CR><LF>		Error message.

AT*AGLP Limited Pairing

Syntax		Description
AT*AGLP=<enable>,<time_limit><CR>		Enables or disables limited pairing, only valid for current power cycle. If the gateway should be pairable after power cycle, see S register 1011.
Parameters	Type	Value
enable	integer	0: Disable 1: Enable. Pairing will be limited. Note: Only applicable if security mode 'Limited' is used. See AT*AGSM .
time_limit	integer	The time (in seconds) the gateway will be pairable.
Responses		Description
<CR><LF>OK<CR><LF>		Successful write response.
<CR><LF>ERROR<CR><LF>		Error message.

AT*AGLN Local Name

Syntax	Description
AT*AGLN=<device_name>,<CR>	Write the local Bluetooth

<store_in_startup_database><CR>

device name.

AT*AGLN?<CR>

Read the local Bluetooth device name.

Parameters	Type	Value
device_name	string	Maximum of 31 characters. The default name is "EPA"/"AP" 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGLN:<device_name>	Successful read response
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error message.

AT*AGLC Local COD

Syntax	Description	
AT*AGLC=<cod>, <store_in_startup_database><CR>	Write the Local Class Of Device code.	
AT*AGLC?<CR>	Read the Local Class Of Device code.	
Parameters	Type	Value
		Valid values for this parameter are specified in the Bluetooth Assigned Numbers Document, www.bluetooth.com . The parameter has been divided into three segments, a service class segment, a major device class segment and a minor device class segment (bits 2-7).
		Extract from the Bluetooth Assigned Numbers Document: Service class (bit mask, bits 13-23): Bit 16: Positioning (Location identification) Bit 17: Networking (LAN, Ad hoc, etc) Bit 18: Rendering (Printing, Speaker, etc) Bit 19: Capturing (Scanner, Microphone, etc) Bit 20: Object Transfer (v-Inbox, v-Folder, etc) Bit 21: Audio (Speaker, Microphone, Headset service, etc) Bit 22: Telephony (Cordless telephony, Modem, Headset service) Bit 23: Information (WEB-server, WAP-server, etc) Major device class (number, bits 12-8):
cod	integer	

00000: Miscellaneous
 00001: Computer (desktop, notebook, PDA, etc)
 00010: Phone (cellular, cordless, modem, etc)
 00011: LAN/Network Access point
 00100: Audio/Video (headset, speaker, stereo, video display, VCR)
 00101: Peripheral (mouse, joystick, keyboards)
 00110: Imaging (printing, scanner, camera, etc)
 11111: Uncategorized, specific device code not specified

The default value is 131072 (Bit 17, Networking).
 0: The setting will only be valid for the current power cycle.

store_in_startup_database integer 1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGLC:<cod>	Successful read response.
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGMSP MasterSlaveRole Policy

Syntax	Description
AT*AGMSP=<role_policy>,<store_in_startup_database><CR>	Writes Master Slave Role Policy
AT*AGMSP?<CR>	Reads the role policy of the device.

Parameters	Type	Value
		0: Always attempt to become master on incoming connections (default access point). 1: Always let the connecting device select master/slave role on incoming connections (default Wireless Bridge Ethernet).
role_policy	integer	Default behavior is Wireless Bridge -> Wireless Bridge: Connecting Wireless Bridge is Master Wireless Bridge -> access point: Access point is master 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AGMSP:<role_policy>	Successful read response.
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGRSS Read RSSI

Syntax	Description
AT*AGRSS=<bd_addr><CR>	This request returns the current received signal strength, RSSI, for the connection between the ECI Controller and the remote device identified by the 'bd_addr' parameter.

Parameters	Type	Value
bd_addr	Bd_Addr	Identifies a device that the gateway is currently communicating with. < 0: The received signal strength is 'rssi' dB below the optimal signal range.
rssi	integer	0: The received signal strength is within the optimal signal range. >0: The received signal strength is 'rssi' dB above the optimal signal range.

Responses	Description
<CR><LF>*AGRSS:<rssi>	Successful response.
<CR><LF>OK<CR><LF>	
<CR><LF>ERROR<CR><LF>	Error response.

AT*AGLQ Read Link Quality

Syntax	Description
AT*AGLQ=<bd_addr><CR>	This request returns the current received signal strength, RSSI, for the connection between the ECI Controller and the remote device identified by the 'bd_addr' parameter.

Parameters	Type	Value
bd_addr	Bd_Addr	Identifies a device that the gateway is currently communicating with.
link_quality	integer	Percentage value of bit error rate.

Responses	Description
<CR><LF>*AGLQ:<link_quality>	Successful response.
<CR><LF>OK<CR><LF>	
<CR><LF>ERROR<CR><LF>	Error response.

Network Layer Commands

AT*ANIP IP Settings

Syntax	Description
AT*ANIP=<ip_addr>,<netmask>,<gw>,<store_in_startup_database><CR>	Write IP address and related information. The information set by this command will not be valid until after the module is restarted. The AT*ANIP? Command will therefore return the old IP settings until you restart the gateway.
AT*ANIP?	Read IP address and related information currently in use.

Parameters	Type	Value
ip_addr	IP_Addr	IP address for the gateway (default 192.168.0.99)
netmask	IP_Addr	Netmask for the gateway (default 255.255.0.0)
gw	IP_Addr	The IP address of the gateway (default 192.168.0.1) 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*ANIP:<ip_addr>,<netmask>,<gw><CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error response.

AT*ANDHCP DHCP Activation

Syntax		Description
AT*ANDHCP=<dhcp_mode>,<store_in_startup_database ><CR>		Activate/deactivate DHCP. If activated, this will take precedence over settings made with AT*ANIP .
AT*ANDHCP?		Read the current DHCP setting
Parameters	Type	Value
dhcp_mode	integer	0: Off, use static IP address (default value)
		1: On, acquire an IP address using DHCP
store_in_startup_database	integer	2: DHCP Server. Use static IP address and act as DHCP server
		0: The setting will only be valid for the current power cycle.
		1: The gateway will remember the setting between

power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*ANDHCP:<on>	Successful read response.
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error response.

AT*ANHN Hostname

Syntax		Description
AT*ANHN=<hostname>,<store_in_startup_database><CR>		Write the hostname used with dynamic DNS.
AT*ANHN?		Read the hostname used with dynamic DNS.
Parameters	Type	Value
hostname	string	Maximum of 240 characters. The default name is "EPA". 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*ANHN:<hostname>	Successful read response.
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error response.

AT*ANDNS DNS Settings

Syntax		Description
AT*ANDNS=<dns1>,<dns2>,<store_in_startup_database><CR>		Write the name server information.
AT*ANDNS?		Read the name server information.
Parameters	Type	Value
dns1	IP_Addr	Primary DNS server. If DNS is not used, set this parameter to 0.0.0.0 (default 0.0.0.0).
dns2	IP_Addr	Secondary DNS server. If DNS is not used or if only one server is used, set this parameter to 0.0.0.0 (default 0.0.0.0).
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle. 1: The gateway will remember the setting

between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*ANDNS:<dns1>,<dns2> <CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error response.

Data Mode Commands

AT*ADLNK Get link status

Syntax	Description
AT*ADLNK?<CR>	Retrieves the Bluetooth addresses of the first connected device. Use AT*AGRCD to list all connected devices.

Parameters	Type	Value
bd_addr	Bd_Addr	Bluetooth device address of a connected device.
connection_handle	integer	The connection handle identifies the connection.

Responses	Description
<CR><LF>*ADLNK:<connection_handle>, <bd_addr><CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*ADC Connect

Syntax	Description
AT*ADC<CR>	Connect to a previously configured remote peer. Note! Only applicable in Wireless Bridge Mode, see AT*AGOM

Parameters	Type	Value
connection_handle	integer	The connection handle that identifies the connection. A negative number means that the connection failed. However, it will continue trying to connect.

Responses	Description
<CR><LF>*ADC:<connection_handle> <CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*ADCP Connect

Syntax	Description
AT*ADCP=<bd_addr>, <role_and_profile>,<	Connect to a service enabled on a remote device. Note! Only applicable in Wireless Bridge Mode, see

<server_channel>, AT*AGOM
 <must_be_master><CR>

Parameters	Type	Value
bd_addr	Bd_Addr	Bluetooth device address of the device to connect to. 0-99: reserved
role_and_profile	integer	100: PANU - PAN User role, PAN Profile 101: NAP - Network Access Point role, PAN Profile 102-255: Reserved
server_chan	integer	Not used, set value to '0' (zero).
must_be_master	integer	Not used, set value to '0' (zero).
connection_handle	integer	The connection handle that identifies the connection. A negative number means that the connection failed. However, it will continue trying to connect.

Responses	Description
<CR><LF>*ADCP:<connection_handle>	Successful response.
<CR><LF>OK<CR><LF>	
<CR><LF>ERROR<CR><LF>	Error response.

AT*ADCPN Connect to name

Syntax	Description
AT*ADCPN=<name>, <role_and_profile>, <server_channel>, <must_be_master><CR>	Connect to a service enabled on a remote device. Note! Only applicable in Wireless Bridge Mode, see AT*AGOM

Parameters	Type	Value
name	string	Case sensitive substring of remote name to connect to, e.g. if specified to EPA it will try to connect to EPA, EPAX, xEPA and xEPAX, but not to epa.
role_and_profile	integer	0-99: reserved 100: PANU - PAN User role, PAN Profile 101: NAP - Network Access Point role, PAN Profile 102-255: Reserved
server_chan	integer	Not used, set value to '0' (zero).
must_be_master	integer	Not used, set value to '0' (zero).
connection_handle	integer	The connection handle that identifies the connection. A negative number means that the connection failed. However, it will continue trying to connect.

Responses	Description
<CR><LF>*ADCPN:<connection_handle>	Successful response.
<CR><LF>OK<CR><LF>	
<CR><LF>ERROR<CR><LF>	Error response.

AT*ADAC Accept Connection

Syntax		Description
AT*ADAC=<bd_addr>,<accept_connection><CR>		Accept or reject a connection attempt. This must be sent to answer the *ADCI Connect Indication within 5 seconds
Parameters	Type	Value
bd_addr	Bd_Addr	The BD Address received in the *ADCI event.
<accept_connection>	integer	0: Reject connection 1: Accept connection
Responses		Description
<CR><LF>OK<CR><LF>		Successful response.
<CR><LF>ERROR<CR><LF>		Error response.

AT*ADCC Close Connection

Syntax		Description
AT*ADCC=<connection_handle><CR>		Close an existing data mode connection.
Parameters	Type	Value
connection_handle	integer	The connection handle that identifies the connection.
Responses		Description
<CR><LF>OK<CR><LF>		Successful response.
<CR><LF>ERROR<CR><LF>		Error response.

AT*ADMC Max Number of Connections

Syntax		Description
AT*ADMC=<no_of_connections>,<store_in_startup_database><CR>		Write max number of connections.
AT*ADMC?<CR>		Read max number of connections.
Parameters	Type	Value
no_of_connections	integer	Max number of connections. Valid values: Wireless Bridge: 1 Access point: 1-7 Default values: Wireless Bridge: 1 Access point: 7 0: The setting will only be valid for the current power cycle. 1: The Bluetooth access point will remember the setting between power cycles. The settings database in the Bluetooth access point will be updated.
store_in_startup_database	integer	
Responses		Description
<CR><LF>OK<CR><LF>		Successful response.
<CR><LF>ERROR<CR><LF>		Error response.

AT*ADOC Data On Connection Complete

Syntax		Description
AT*ADOC=<enable>,<store_in_startup_database><CR>		Data communication is disabled until all configured connections (see AT*ADMC) are complete.
AT*ADOC?<CR>		Reads the current setting.
Parameters	Type	Value
enable	integer	0: Disable. Data communication will start as soon as the connections are complete. Default value. 1: Enable. Data communication will be halted until all connections (see AT*ADMC) are complete.
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle. 1: The Bluetooth access point will remember the setting between power cycles. The settings database in the Bluetooth access point will be updated.
Responses		Description
<CR><LF>OK<CR><LF>		Successful response.
<CR><LF>ERROR<CR><LF>		Error response.

AT*ADMRP Read Max Number of Remote Peers

Syntax		Description
AT*ADMRP?<CR>		Returns the maximum number of remote peers.
Parameters	Type	Value
max_remote_peers	integer	Max number of remote peers.
Note: The parameter always has the value of '1'.		
Responses		Description
<CR><LF>*ADMRP:<max_remote_peers>		Successful response.
<CR><LF>OK<CR><LF>		
<CR><LF>ERROR<CR><LF>		Error response.

AT*ADNRP Number of Remote Peers

Syntax	Description
AT*ADNRP=<no_remote_peers>,<store_in_startup_database><CR>	Write number of remote peers Note: Only applicable in Wireless Bridge Mode, see AT*AGOM
AT*ADNRP?<CR>	Read number of remote peers

Parameters	Type	Value
no_remote_peers	integer	Number of remote peers

Responses	Description
<CR><LF>OK<CR><LF>	Successful write response
<CR><LF>*ADNRP:<no_remote_peers> <CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*ADRRP Read Default Remote Peer

Syntax	Description
AT*ADRRP=<peer_id><CR>	This command reads the Bluetooth device address and device name of the selected default remote peer (peer id).

Parameters	Type	Value
peer_id	integer	Not used, set value to '0' (zero). Bluetooth device address of the default remote peer. On the form of <protocol>://bd_addr:port. i.e. panu://001122334455:0 (port is ignored) <protocol> can be one of the following
bd_addr	Bd_Addr	for the Bluetooth device: PANU: Will try to connect to PANU role of the remote device NAP: Will try to connect to NAP role of remote device PAN: Will try to automatically choose remote profile
connect_scheme	integer	Not used.
update_remote_peer_on_incoming	integer	Not used.
device_name	string	Name of remote device. Maximum of 240 characters.

Responses	Description
<CR><LF>*ADRRP:<bd_addr>, <connect_scheme>, <update_remote_peer_on_incoming>, <device_name> <CR><LF>OK<CR><LF>	Successful read response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*ADWRP Write Default Remote Peer

Syntax	Description		
AT*ADWDRP=<peer_id>,<address>,<connect_scheme>,<update_remote_peer_on_incoming>,<device_name>,<store_in_startup_database><CR>	This command writes the Bluetooth device address and device name of the currently selected default remote peer. Note: Only applicable in Wireless Bridge Mode, see AT*AGOM		
Parameters	Type	Value	
peer_id	integer	Not used, set value to '0' (zero). Bluetooth device address of the default remote peer. On the form of <protocol>://bd_addr:port. i.e. panu://001122334455:0 (port is ignored) <protocol> can be one of the following for the Bluetooth device: PANU: Will try to connect to PANU role of the remote device NAP: Will try to connect to NAP role of remote device PAN: Will try to automatically choose remote profile	
address	string	Not used, set value to '0' (zero). Note: Use ATS commands to set paging, inquiry and connect times.	
connect_scheme	integer	Not used, set value to '0' (zero). Name of remote device to connect to. The protocol of the remote device is filled out in the address field, i.e. to connect to a	
update_remote_peer_on_incoming	integer	PANU service of a device with the Bluetooth name EPA, you should enter the following command: AT*ADWDRP=0,panu://,0,0,EPA,1 0: The setting will only be valid for the current power cycle.	
device_name	string	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.	
store_in_startup_database	integer		

Responses	Description
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

AT*ADRL Roaming List

Syntax	Description
AT*ADRL?	Read the list of access points used for roaming.

Note: Roaming only applicable in Wireless Bridge mode, see [AT*AGOM](#)

Parameters	Type	Value	
index	integer	Position in the roaming list	
bd_addr	Mac_Addr	BD address of the remote peer.	
Responses			Description
<CR><LF>*ADRL:<index><bd_addr>			This response is sent for every access point in the list.
<CR><LF>OK<CR><LF>			Successful response.
<CR><LF>ERROR<CR><LF>			Error response.

AT*ADRRL Read Roaming List

Syntax	Description
AT*ADRRL=<index><CR>	This command reads the BD address of the selected access point in the roaming list. Note: Roaming only applicable in Wireless Bridge mode, see AT*AGOM

Parameters	Type	Value	
index	integer	Position in the roaming list.	
bd_addr	Mac_Addr	BD address of remote device.	
Responses			Description
<CR><LF>*ADRRL:<index>,<mac_addr>			Successful read response.
<CR><LF>OK<CR><LF>			
<CR><LF>ERROR<CR><LF>			Error response.

AT*ADWRL Write Roaming List

Syntax	Description
AT*ADWRL=<index>,<bd_addr>,<store_in_startup_database><CR>	This command writes the BSSID of the access point in the roaming list. Note: Roaming only applicable in Wireless Bridge mode, see AT*AGOM

Parameters	Type	Value	
index	integer	Position in the roaming list.	
bd_addr	Mac_Addr	BD address of remote device.	
			0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.	
Responses		Description	
<CR><LF>OK<CR><LF>		Successful response.	
<CR><LF>ERROR<CR><LF>		Error response.	

AT*ADDSP Default Server Profile

Syntax		Description
AT*ADDSP=<role_and_profile>,<store_in_startup_database><CR>		This command sets the default server profile. A reset is required before this is used.
AT*ADDSP?<CR>		Read currently configured default server profile.
Parameters	Type	Value
role_and_profile	integer	0-99: Reserved
		100: PAN User role, PAN Profile (Default value).
		101: Network Access Point role, PAN Profile
		102-255: Reserved
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle.
		1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*ADDSP:<role_and_profile>	Read response
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response.
<CR><LF>ERROR<CR><LF>	Error response.

Informational Commands

AT*AILBA Read Local BD Address

Syntax	Description
AT*AILBA? Parameters	Reads the Bluetooth Device Address of the local device.
Type	Value
bd_addr	Bd_Addr Local Bluetooth device address.
Responses	Description
<CR><LF>*AILBA:<bd_addr>,<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AILVI Local Version Information

Syntax	Description	
AT*AILVI?<CR>	This command reads the local version information to the Wireless Bridge.	
Parameters	Type	Value
manufacturer	string	Wireless Bridge manufacturer.

sw_ver	string Wireless Bridge software version.
module_sw_ver	string Bluetooth module software version
bt_ver	string Bluetooth version.
bluetooth_hardware_manufacturer	string Bluetooth hardware manufacturer.

Responses	Description
<CR><LF>*AILVI:<manufacturer>, < sw_ver>, <module_sw_ver>, <bt_ver>, <bluetooth_hardware_manufacturer> <CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AILTI Local Type Information

Syntax	Description
AT*AILTI?<CR>	This command reads the local type information to the Wireless Bridge.

Parameters	Type	Value
major_id	integer	1: Wireless Bridge Serial - Bluetooth 2: Wireless LAN – Wireless Bridge Serial 3: IEEE 802.15.4 Wireless Bridge Serial 4: Bluetooth Low Energy Wireless Bridge Serial 5: Wireless Bridge Ethernet - Bluetooth 6: Wireless Bridge Ethernet The different types of Bluetooth Wireless Bridge are identified by the following numbers: 0: cB-OEMSPA310 1: cB-OEMSPA311 2: cB-OEMSPA331 3: cB-OEMSPA312 4: cB-OEMSPA332 5: cB-OEMSPA333 6: cB-OBS411 7: cB-OBS433 8: cB-OBS410 9: cB-OBS413 10: cB-OBS421-0 11: cB-OBS421-1
minor_id	integer	

Responses	Description
<CR><LF>*AILTI:<major_id>,<minor_id> <CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message

Miscellaneous Commands

AT*AMLI Log in

Syntax		Description
AT*AMLI=<password><CR>		Log in to the AT command interface
		Note: The Use User management S register must be set to enable user management.
Parameters	Type	Value
password	String	A null terminated string of up to 15 bytes
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMLO Log Out

Syntax		Description
AT*AMLO=<log_out><CR>		Log out from the AT command interface.
Parameters	Type	Value
log_out	Integer	For a successful log out this shall be 1
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMPW Password

Syntax		Description
AT*AMPW=<password>,<store_in_startup_database><CR>		Set password to the AT command interface
Parameters	Type	Value
password	String	A null terminated string of up to 15 bytes
		0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMGD General data

Syntax	Description
AT*AMGD=<data><CR>	Write any data, this will be stored between power cycles.

AT*AMGD?<CR> Read previously written data.

Parameters	Type	Value
data	String	Any 31 bytes long data that should be stored.

Responses	Description
<CR><LF><data><CR><LF> OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMRP Read TX Power

Syntax	Description
AT*AMRP=<bd_address><CR>	Read the current output power used by the gateway when communicating.

Parameters	Type	Value
bd_addr	Bd_Addr	Bluetooth device address of the device
tx_power	integer	Output power in dBm < 0: -'tx_power' dBm 0: 0 dBm >: +'tx_power' dBm

Responses	Description
<CR><LF>*AMRP:<tx_power>	Successful response
<CR><LF>OK<CR><LF>	
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMMP Max Output Power

Syntax	Description
AT*AMMP=<max_output_power>, <store_in_startup_database><CR>	Set the maximum output power to be used by the gateway when communicating.
AT*AMMP?<CR>	Read the maximum output power used by the gateway when communicating.

Parameters	Type	Value
max_output_power	integer	Max output power in dBm, the host will choose the nearest possible value (dependent of the Bluetooth chip) that is below this (default value: 20). 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AMMP:<max_output_power>	Successful read response

<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMWS Watchdog Settings

Syntax	Description
AT*AMWS=<write_timeout>, <rx_inactivity_timeout>, <connect_timeout>, <disconnect_reset>, <reset>, <store_in_startup_database><CR>	Write watchdog parameters.
AT*AMWS?<CR>	Read current watchdog settings. Watchdog settings are only active in data mode and not AT or ECI mode.

Parameters	Type	Value
write_timeout	integer	Time in seconds before the gateway resets if Bluetooth connection is lost. Default value is 10. 0: Disabled > 0: Timeout in seconds
rx_inactivity_timeout	integer	Time in seconds before the gateway resets if no receive activity on the radio interface. 0: Disabled (default value) > 0: Timeout in seconds
connect_timeout	integer	Max connection time in seconds before the gateway resets. 0: Disabled (default value) > 0: Timeout in seconds
disconnect_reset	integer	0: Disabled (default value) 1: If enabled, the gateway will reset on a terminated connection.
reset	integer	If set to 1 the gateway will reset immediately. All other parameters will be ignored. 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AMWS: <write_timeout>, <rx_inactivity_timeout>, <connect_timeout>, <disconnect_reset>, <reset>	Successful read response

<CR><LF>OK<CR><LF>
 <CR><LF>OK<CR><LF> Successful response
 <CR><LF>ERROR<CR><LF> Error message.

AT*AMLEM Low Emission Mode

Syntax		Description
AT*AMLEM=<low_emission_mode><CR>		Write Low Emission Mode.
AT*AMLEM?<CR>		Read current Low Emission Mode.
Parameters	Type	Value
		Low Emission modes:
		0: (Default) Connection period: 10 000 ms Paging timeout: 2000 ms Inquiry timeout: 5000 ms
		1: Connection period: 5000 ms Paging timeout: 300 ms Inquiry timeout: 600 ms
		2: Connection period: 3000 ms Paging timeout: 200 ms Inquiry timeout: 300 ms
low_emission_mode	integer	3: Connection period: 3000 ms Paging timeout: 80 ms Inquiry timeout: 80 ms
		4 - 63: Reserved
		64: User specified times, see the ATS General Settings S Register Manipulation command. Connect period: As specified in S register 1000 Page timeout: As specified in S register 1001 Inquiry timeout: As specified in S register 1002
		Note: Connect period and Page timeout are only applicable in Wireless Bridge mode, see AT*AGOM
		0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>*AMLEM:<low_emission_mode>		Successful read response

<CR><LF>OK<CR><LF>
 <CR><LF>OK<CR><LF>
 <CR><LF>ERROR<CR><LF>

Successful response
 Error message.

AT*AMPP Packet Policy

AT Command		Description
AT*AMPP? <CR>		Read packet policy
AT*AMPP=<packet_policy>,<store_in_startup_database>		Write packet policy.
Responses		Description
<CR><LF><*AMPP:<packet_policy><CR><LF>OK<CR><LF>		Successful read response.
<CR><LF>OK<CR><LF>		Successful write response.
<CR><LF>ERROR<CR><LF>		Error message
Parameters	Type	Value
packet_policy	integer	0: Long Range (only DM1 packets).
		1: Short Latency, basic rates (all DM packets and QoS).
		2: High Throughput, basic rates (DM + DH packets). (default)
		3: Basic Rates and EDR (all packets and QoS).
		Note: Will always use EDR if supported by both sides. Should only be used in non-mobile installations or if a good link can be guaranteed.
store_in_startup_database	integer	4: Module specific, please refer to Anybus Wireless Bridge Serial - Bluetooth AT Commands. "link_policy" and "parameter" can be set with S-Reg 1007 and S-Reg 1008.
		Constraint: 4 is only available from 2.2.0
		0: The setting will only be valid for the current power cycle.
		1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

AT*AMWID Wireless Interface Disable

Syntax	Description
AT*AMWID=<disable><store_in_startup_database><CR>	Write Event and Status subscriber.
AT*AMWID? <CR>	Read Event and Status

Parameters	Type	Value
		subscriber.
disable	Integer	0: use default 1: disable wireless interface. This will cause connectability and discoverability to change as well
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle. 1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AMWID:<disable>	Successful read response
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMESS Event and Status Subscriber

Syntax	Description
AT*AMESS=<mac_addr>, <ip_addr>, <port>, <protocol>, <store_in_startup_database><CR>	Write Event and Status subscriber.
AT*AMESS? <CR>	Read Event and Status subscriber.

Parameters	Type	Value
mac_addr	MAC_Addr	MAC address of event subscriber.
IP_Addr	IP_Addr	IP address of event subscriber.
port	Integer	Port number of event subscriber 0: use default Value deciding how events should be sent. 0: disable (default) 1: Messages sent by AT over TCP 2: Messages sent by AT over Layer-2 (mac_address must be specified, FFFFFFFFFFFFFFFF means that it will be broadcasted) 3: Syslog 4 - 255: reserved
protocol	Integer	0: The setting will only be valid for the current power cycle. 1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
store_in_startup_database	integer	

Responses	Description
<CR><LF>*AMESS: <mac_addr>, <ip_addr>, <port>, <port> <CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMSMF SMART Mode (Button) functionality

Syntax	Description	
AT*AMSMF=<short_mode>,<long_mode>,<store_in_startup_database><CR>	Write SMART button functionality.	
AT*AMSMF? <CR>	Read SMART button functionality.	
Parameters	Type	Value
short_mode	Integer	Push functionality
		0: Trigger roaming (disconnect/connect)
		1: Toggle LEDs
		2: Soft reset
long_mode	Integer	Hold functionality
		0: Trigger roaming (disconnect/connect)
		1: Toggle LEDs
		2: Soft reset
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle.
		1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AMSMF: <short_mode>,<long_mode><CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMSMFL SMART Mode Function List

Syntax	Description
AT*AMSMFL=<smart_mode_1>, <smart_mode_2>,<smart_mode_3>, <smart_mode_4>,<smart_mode_5>, <smart_mode_6>,<smart_mode_7>, <smart_mode_8>,<smart_mode_9>, <smart_mode_10>,<smart_mode_11>,<smart_mode_12>	Write sequence of SMART button functionality modes. Example: "AT*AMSMFL=15,2,3,4,5,6,0,0,0,0,0,0,0,0,1" will limit the number of SMART modes to 6. The first mode indicated by the "A" LED will be

<smart_mode_12>,<smart_mode_13>, 15 (see list below), the second, indicated by <smart_mode_14>,<smart_mode_15>, the "B" LED will be 2 and the third, indicated by <store_in_startup_database><CR> by "A" and "B", will be 3 and so on. See the product guide for more details.

AT*AMSMFL? <CR> Read SMART button function list.

Parameters	Type	Value
		0: End Smart mode function list
		1 - 15 SMART functionality:
		1: Exit Smart mode
		2: Reset to factory defaults
		3: Reset IP settings to factory defaults
		4: Wait for Automatic configuration - PANU(Wireless Bridge Ethernet only)
		5: Initiate Automatic configuration - PANU - PANU (Wireless Bridge Ethernet only)
		6: Initiate Automatic configuration - PANU - PANU with Profinet optimizations (Wireless Bridge Ethernet only)
		7: Initiate Automatic configuration - PANU - NAP (Wireless Bridge Ethernet only)
smart_mode_#	Integer	8: Initiate Automatic configuration - PANU - PANU with EDR (Wireless Bridge Ethernet only)
		9: Initiate Automatic configuration - PANU - PANU with Profinet optimizations and EDR (Wireless Bridge Ethernet only)
		10: Wait for Automatic configuration - NAP (Access Point only)
		11: Reserved
		12: Reserved
		13: Reserved
		14: Reserved
		15: Configuration mode
		16 - 255: Reserved
		Default: 15,2,3,4,5,6,7,8,9,10
		0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AMSMFL:<smart_mode_1>,<smart_mode_2>,<smart_mode_3>,<smart_mode_4>,<smart_mode_5>,<smart_mode_6>,<smart_mode_7>,<smart_mode_8>,<smart_mode_9>,<smart_mode_10>,<smart_mode_11>,<smart_mode_12>,<smart_mode_13>,<smart_mode_14>,<smart_mode_15><CR><LF>OK<CR><LF>	Successful read response

<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMSSC SNMP Sys Contact

Syntax		Description
AT*AMSSC=<sys_contact>,<store_in_startup_database><CR>		Write SNMP Sys Contact.
AT*AMSSC? <CR>		Read SNMP Sys Contact.
Parameters	Type	Value
sys_contact	String	Any String up to 32 characters 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>*AMSSC: <sys_contact><CR><LF>OK<CR><LF>		Successful read response
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMSSL SNMP Sys Location

Syntax		Description
AT*AMSSL=<sys_location>,<store_in_startup_database><CR>		Write SNMP Sys Location.
AT*AMSSL? <CR>		Read SNMP Sys Location.
Parameters	Type	Value
sys_location	String	Any String up to 32 characters 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>*AMSSL: <sys_location><CR><LF>OK<CR><LF>		Successful read response
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMSSS SNMP Sys Services

Syntax	Description	
AT*AMSSS? <CR>	Read SNMP Sys Services.	
Parameters	Type	Value
sys_services	Integer	Represents the system services defined by SNMP
Responses	Description	
<CR><LF>*AMSSS:		
<sys_services><CR><LF>OK<CR><LF>	Successful read response	
<CR><LF>ERROR<CR><LF>	Error message.	

AT*AMSBN SNMP Basic Name/Sys Name

Syntax	Description	
AT*AMSBN=<basic_name>,<store_in_startup_database><CR>	Write SNMP Sys Name.	
AT*AMSBN? <CR>	Read SNMP Basic Name.	
Parameters	Type	Value
basic_name	String	Any String up to 32 characters
		0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses	Description	
<CR><LF>*AMSBN:		
<basic_name><CR><LF>OK<CR><LF>	Successful read response	
<CR><LF>OK<CR><LF>	Successful response	
<CR><LF>ERROR<CR><LF>	Error message.	

AT*AMSSD SNMP Sys Description

Syntax	Description	
AT*AMSSD=<basic_description>,<store_in_startup_database><CR>	Write SNMP System Description.	
AT*AMSBD? <CR>	Read SNMP System Description.	
Parameters	Type	Value
basic_description	String	Any String up to 32 characters 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses	Description	
<CR><LF>*AMSBD:<basic_description>	Successful read response	

<CR><LF>OK<CR><LF>

<CR><LF>OK<CR><LF>

Successful response

<CR><LF>ERROR<CR><LF>

Error message.

AT*AMSRC SNMP Read Community (Public Community)

Syntax		Description
AT*AMSRC=<community>,<store_in_startup_database><CR>		Write SNMP Public Community.
Parameters	Type	Value
community	String	Any String up to 12 characters. The gateway currently only supports 1 community that has both read and write access. This is not used by the gateway
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle. 1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMSWC SNMP Write Community (Private Community)

Syntax		Description
AT*AMSWC=<community>,<store_in_startup_database><CR>		Write SNMP Private Community.
Parameters	Type	Value
community	String	Any String up to 12 characters 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMSEID SNMP Enterprise ID

Syntax	Description
AT*AMSEID?<CR>	Read SNMP Enterprise Id.
Parameters	Type
id	Integer Integer representing your company
Responses	Description
<CR><LF>*AMSEID: <id><CR><LF>OK<CR><LF>	Successful read response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMCM Channel Map

Syntax	Description	
AT*AMCM= <channel0to15>, <channel16to31>, <channel32to47>, <channel48to63>, <channel64to78>, <store_in_startup_database><CR>	Write channel map. Note: Must be set on Master device, see AT*AGMSP for more information about Master Slave Role Policy.	
AT*AMCM? <CR>	Read currently configured channel map.	
Parameters	Type	Value
channel0to15	Integer	Bit mask used to enable or disable channels 0 to 15 (Bit 0 = Channel 0). Default value is 0xFFFF.
channel16to31	Integer	Bit mask used to enable or disable channels 16 to 31. Default value is 0xFFFF. (Bit 0 = Channel 16)
channel32to47	Integer	Bit mask used to enable or disable channels 32 to 47 (Bit 0 - Channel 32). Default value is 0xFFFF.
channel48to63	Integer	Bit mask used to enable or disable channels 48 to 63 (Bit 0 = Channel 48). Default value is 0xFFFF.
channel64to78	Integer	Bit mask used to enable or disable channels 64 to 78 (Bit 0 = Channel 64). Default value is 0x7FFF. 0: The setting will only be valid for the current power cycle.
store_in_startup_database	integer	1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.
Responses	Description	
<CR><LF>*AMCM: <channel0to15>, <channel16to31>, <channel32to47>, <channel48to63>, <channel64to78> <CR><LF>OK<CR><LF>	Successful read response	
<CR><LF>OK<CR><LF>	Successful response	

<CR><LF>ERROR<CR><LF> Error message.

AT*AMRCM Read Channel Map

Syntax		Description
AT*AMRCM=<mac_addr>,<CR>		Read currently used channel map. Note: A Bluetooth connection is required to get a successful read response.
Parameters	Type	Value
mac_addr	MAC_Addr	Connection to read channel map from
channel0to15	Integer	Bit mask used to enable or disable channels 0 to 15 (Bit 0 = Channel 0). Default value is 0xFFFF.
channel16to31	Integer	Bit mask used to enable or disable channels 16 to 31. Default value is 0xFFFF. (Bit 0 = Channel 16)
channel32to47	Integer	Bit mask used to enable or disable channels 32 to 47 (Bit 0 = Channel 32). Default value is 0xFFFF.
channel48to63	Integer	Bit mask used to enable or disable channels 48 to 63 (Bit 0 = Channel 48). Default value is 0xFFFF.
channel64to78	Integer	Bit mask used to enable or disable channels 64 to 78 (Bit 0 = Channel 64). Default value is 0x7FFF.
Responses		Description
<CR><LF>*AMRCM: <channel0to15>, <channel16to31>, <channel32to47>, <channel48to63>, <channel64to78> <CR><LF>OK<CR><LF>		Successful read response
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMTL TCP Listener

Syntax		Description
AT*AMTL=<port>,<enable>, <store_in_startup_database><CR>		Enable or disable the TCP listener.
AT*AMTL?		Read TCP listener activation status.
Parameters	Type	Value
port	Integer	TCP port to listen for incoming connections 0 = Disables TCP Listener
enable	Integer	1 = Enables TCP Listener. When enabled, it will always enter at mode at startup
store_in_startup_database	Integer	0: The setting will only be valid for the current power cycle.

1: The Bluetooth access point will remember the setting between power cycles. The settings database in the Bluetooth access point will be updated.

Responses	Description
<CR><LF>*AMTL:<port>,<enable> <CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMHL HTTP Listener

Syntax	Description	
AT*AMHL=<port>,<enable>,<store_in_startup_database><CR>	Enable or disable HTTP listener.	
AT*AMHL?	Read HTTP listener activation status.	
Parameters	Type	Value
port	Integer	TCP port to listen for incoming connections
enable	Integer	0 = Disables HTTP Listener 1 = Enables HTTP Listener 0: The setting will only be valid for the current power cycle.
store_in_startup_database	Integer	1: The Bluetooth access point will remember the setting between power cycles. The settings database in the Bluetooth access point will be updated.

Responses	Description
<CR><LF>*AMHL:<enable>,<port> <CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMSR SNMP Receiver

Syntax	Description	
AT*AMSR=<port>,<enable>,<store_in_startup_database><CR>	Enable or disable SNMP listener.	
AT*AMSR?	Read SNMPlistener activation status.	
Parameters	Type	Value
enable	Integer	0 = Disables SMNP Receiver 1 = Enables SNMP Receiver
port	Integer	UDP port to listen for incoming packets
store_in_startup_database	Integer	0: The setting will only be valid for the current

power cycle.

1: The Bluetooth access point will remember the setting between power cycles. The settings database in the Bluetooth access point will be updated.

Responses	Description
<CR><LF>*AMSR:<port>,<enable>	Successful read
<CR><LF>OK<CR><LF>	response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMLCR Link Config Receiver

Syntax	Description	
AT*AMLCR=<eth_type>,<enable>,<store_in_startup_database><CR>	Write the operational power mode.	
AT*AMLCR?	Read the operational power mode.	
Parameters	Type	Value
eth_type	Integer	Ethernet type that will be passed up the AT parser
enable	Integer	0 = Disables Link Config Receiver 1 = Enables Link Config Receiver
store_in_startup_database	Integer	0: The setting will only be valid for the current power cycle.
		1: The Bluetooth access point will remember the setting between power cycles. The settings database in the Bluetooth access point will be updated.

Responses	Description
<CR><LF>*AMLC:<eth_type>,<enable>	Successful read
<CR><LF>OK<CR><LF>	response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMTU MTU Size

Syntax		Description
AT*AMTU=<mtu_length>,<store_in_startup_database><CR>		Write the network MTU size.
AT*AMTU?		Read the network MTU size.
Parameters	Type	Value
mtu_length	Integer	Valid range is 64...1472 (1472 default)
store_in_startup_database	Integer	0: The setting will only be valid for the current power cycle.

1: The gateway will remember the setting between power cycles. The settings database in the gateway will be updated.

Responses	Description
<CR><LF>*AMTU:<mtu_length><CR><LF>OK<CR><LF>	Successful read response
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message.

AT*AMEO Set External Digital Output

Syntax		Description
AT*AMEO=<value><CR>		Set external digital output to value
Parameters	Type	Value
		0: LOW - Ground (0V DC)
value	integer	1: HIGH - Its voltage will be set to the corresponding value on the power connector, A-coded male M12, pinning number 5 (typical 12-24 V DC).
Responses		Description
<CR><LF>OK<CR><LF>		Successful response
<CR><LF>ERROR<CR><LF>		Error message.

AT*AMSTAT Read Current Status

Syntax	Description
AT*AMSTAT=<level>,<id><CR>	Read current status for a specific interface.
	Note: Parameters may be added and placed in any order.

Parameters	Type	Value
level	integer	1: Common 2: Reserved 3: WLAN 4: Bluetooth 5: Ethernet 6: Reserved 7: Reserved
id	integer	0 is the only valid value. Optional value.
Common		
uptime	integer	Uptime in seconds
Bluetooth		
mac_addr	MAC_Addr	Bluetooth MAC address (always the same as Ethernet MAC Address)
status	integer	0: Not connected 1: Connected

		2: Connecting
op_mode	integer	1: AP 2: EPA
disc_mode	integer	1: Discoverability disabled 2: Discoverability limited 3: Discoverability on
con_mode	integer	1: Connectability disabled 2: Connectability enabled
pair_mode	integer	1: Pairing disabled 2: Pairing enabled
sec_mode	integer	1: Enabled 2: Enforced BT 2.0 3: Limited
name	integer	Local name
profile	integer	Server profile
n_peers	integer	Number of links.
peer_addr	MAC_Addr	Address of connected link.
peer_handle	integer	Handle of connected link
max_cons	integer	Max number of connections
Ethernet		
eth_mac_addr	MAC_Addr	Ethernet MAC address
eth_status	integer	0: Link is down 1: Link is up
ip_addr	IP_Addr	Static IP address or assigned in case DHCP is used
subnet	IP_Addr	Subnet mask
gateway	IP_Addr	Gateway IP address
dhcp_mode	integer	DHCP mode, see AT*ANDHCP
dns1	IP_Addr	Primary DNS server
dns2	IP_Addr	Secondary DNS server

Responses	Description
*UPTIME:<uptime><CR><LF> <CR><LF>OK<CR><LF> <CR><LF>OK<CR><LF>	For level 1 For level 2
*HW_ADDR:<mac_addr><CR><LF> *STATUS:<status><CR><LF> *OP_MODE:<op_mode><CR><LF> *DISC_MODE:<disc_mode><CR><LF> *CON_MODE:<con_mode><CR><LF> *PAIR_MODE:<pair_mode><CR><LF> *SEC_MODE:<sec_mode><CR><LF> *NAME:<name><CR><LF> *PROFILE:<profile><CR><LF> *MAX_CONS:<max_cons><CR><LF> *PEERS:<n_peers><CR><LF> *PEER_0:<peer_addr>,<peer_handle><CR><LF>	For level 4

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...
*PEER_7:<peer_addr>,<peer_handle><CR><LF>
<CR><LF>OK<CR><LF>
*HW_ADDR:<eth_mac_addr><CR><LF>
*STATUS:<eth_status><CR><LF>
*IP_ADDR:<ip_addr><CR><LF>
*SUBNET_MASK:<subnet><CR><LF>
*GATEWAY:<gateway><CR><LF>           For level 5, ethernet.
*DHCP:<dhcp_mode><CR><LF>
*DNS1:<dns1><CR><LF>
*DNS2:<dns2><CR><LF>
<CR><LF>OK<CR><LF>
<CR><LF>OK<CR><LF>           For level 6
<CR><LF>OK<CR><LF>           For level 7
<CR><LF>ERROR<CR><LF>       Error message

```

AT*AMPSM Profisafe Mode

Syntax	Description
AT*AMPSM=<ps_mode>,<store_in_startup_database>,<apply_without_restart><CR>	Enable Profisafe Mode, in profisafe mode it's only possible to read configuration. To write configuration again, it's necessary to set the device in configuration mode or reset to factory defaults.
AT*AMPSM?	Get Profisafe Mode Status

Parameters	Type	Value
ps_mode	integer	0: Profisafe Mode disabled 1: Profisafe Mode enabled
store_in_startup_database	integer	0: The setting will only be valid for the current power cycle. 1: The gateway will remember the setting between power cycles. The settings database in the

		gateway will be updated.
		Optional, setting this to 1 will set the device in Profisafe mode directly without a restart. After this is set, no further configuration is possible. To write configuration again, it's necessary to set the device in configuration mode or reset to factory defaults.
apply_without_restart	integer	

Responses	Description
<CR><LF>*AMPSM:<ps_mode>	Successful read response
<CR><LF>OK<CR><LF>	
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message

AT*AMTFTP TFTP Upgrade

Syntax	Description
AT*AMTFTP=<epa_ip>,<server_ip>,<filename><CR>	Trigger a firmware upgrade

Parameters	Type	Value
epa_ip	string	The IP address the gateway shall use during the upgrade procedure
server_ip	string	TFTP server IP address
filename	string	Firmware file (cbz)

Responses	Description
<CR><LF>OK<CR><LF>	Successful response
<CR><LF>ERROR<CR><LF>	Error message

Events

*ADCPO Connection Up

Event

*ADCPO:<connection_handle>,<role_and_profile>,<local_bd_addr><remote_bd_addr><CR><LF>

Parameters	Type	Value
connection_handle	integer	Identifies the connection.
role_and_profile	integer	100: PAN User role, PAN Profile 101: Network Access Point role, PAN Profile
local_bd_addr	Bd_Addr	Bluetooth address of the device sending this event
remote_bd_addr	Bd_Addr	Bluetooth address of the connected device

*ADCCO Connection Closed

Event			Description
*ADCCO:<connection_handle>,<reason>,<local_bd_addr>,<remote_bd_addr><CR><LF>			A connection to a remote device has been disconnected
Parameters	Type	Value	
connection_handle	integer	Identifies the connection.	
reason	integer	0: Disconnected by command 1: Disconnected by link loss 255: Reason unknown	
local_bd_addr	Bd_Addr	Bluetooth address of the device sending this event	
remote_bd_addr	Bd_Addr	Bluetooth address of the previously connected device	

*ADCI Connect Indication

Event			Description
*ADCI:<bd_addr><role_and_profile><CR><LF>			A remote device is trying to connect. An AT+ADAC must be sent to respond
Parameters	Type	Value	
bd_addr	Bd_Addr	Bluetooth address of the previously connected device	
role_and_profile	integer	100: PAN User role, PAN Profile 101: Network Access Point role, PAN Profile	

*AMLQW Link Quality Warning

Event			Description
*AMLQW:<bd_addr><remote_bd_addr><CR><LF>			Link quality below threshold value, see ATS General Settings S Register Manipulation (Roaming) Note: Only applicable in gateway mode, see AT+AGOM .
Parameters	Type	Value	
bd_addr	Bd_Addr	Local Bluetooth device address	
remote_bd_addr	Bd_Addr	Bluetooth address of the remote device	

*AMDST Digital Signal Transition

Event	Description
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*ADDST:<mac_addr><CR><LF> An external digital signal was detected.

Parameters	Type	Value
mac_addr	Mac_Addr	MAC address of the device.

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*\*
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* Author: Adam Dunkels <adam@sics.se>
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