

# Cobox Setup Records

## Documentation

Version 1.17

## Table of contents

1. Summary .....	4
2. Configuration over network.....	5
3. Configuration over the serial interface .....	7
3.1. Intel HEX format.....	7
3.1.1. Record format .....	7
3.1.2. Example .....	7
3.2. Commands.....	7
4. Setup records .....	10
4.1. Setup record 0.....	10
4.1.1. Serial usage .....	13
4.1.2. Network usage .....	13
4.2. Setup record 1.....	14
4.2.1. Serial usage .....	14
4.2.2. Network usage .....	14
4.3. Setup record 2.....	15
4.3.1. Serial usage .....	15
4.3.2. Network usage .....	15
4.4. Setup record 3.....	15
4.4.1. Serial usage .....	15
4.4.2. Network usage .....	16
4.5. Setup record 4.....	16
4.5.1. Serial usage .....	16
4.5.2. Network usage .....	16
4.6. Setup record 5.....	16
4.6.1. Serial usage .....	16
4.6.2. Network usage .....	16
4.7. Setup record 6.....	17
4.7.1. Serial usage .....	18
4.7.2. Network usage: .....	18
4.8. Setup record 7.....	18
4.8.1. XPort, XPort-03, XPort-485.....	18
4.8.2. WiPort (not WiBox).....	19
4.8.3. Serial usage .....	19
4.8.4. Network usage .....	20
4.9. Setup record 8.....	20
4.9.1. Serial usage .....	20
4.9.2. Network usage .....	20
4.10. Setup record 9.....	21
4.10.1. Serial usage.....	21
4.10.2. Network usage:.....	21
4.11. Setup record 10 to 15 .....	21
4.11.1. Serial usage.....	21
4.11.2. Network usage.....	21

## Revision History

Revision	Date	Initials	Notes
1.7	1/31/03	jl	Current revision in CVS
1.8	2/07/03	dam	Added setup record 5,6 &7 information, new for XPort development. General updates/corrections.
1.9	2/27/03	pa	add echo bit, correct Flush Mode, add reboot byte
1.10	4/10/03	dam	add "warning" to users about reserved bytes
1.11	6/24/03	pt	Added 192 and 256 bit AES key storage to setup record 1
1.12	8/23/03	dam	Corrections to 'Connect Configuration' option descriptions; added 77F0 security flag in record 1
1.13	10/24/03	dam	Minor changes for Micro100; changed F7 description related to 2-channel indication; minor corrections
1.14	2/09/04	dam	New settings in setup records 0 & 3 for XPort-03 (EX based); other minor corrections
1.15	6/28/04	pt	WiPort specific setup record (7 (different format), 8 and 9) descriptions added.
1.16	7/02/04	dam	XPort-485 specific settings added to setup record 7; new feature settings in setup record 3, first release in XPort-485; other minor corrections
1.17	8/20/04	pt	Correction and addition to WiPort setup record 7

## 1. Summary

Based on the hardware platform the Lantronix CoBox device server may have more or less memory for Setup storage. Only the standard setup record is available for sure. All further setup records besides the first 120 bytes are optional depending on the used hardware platform. The following possibilities exist:

1 x 120 Bytes

Or

1x 120 Bytes & 1x 126 Bytes

Or

1x 120 Bytes & 7x 126 Bytes

Or

1x 120 Bytes & 15x 126 Bytes

This document describes how to query and how to change parameters in the different records over the serial interface or over the network. The construction of the individual setup records is described as well. However, since all products do not support the full set of features, please refer to the corresponding manual for specific features and settings information.

## 2. Configuration over network

With sending a specific UDP data record to port 77FEh or by establishing a TCP connection to port 77FEh and then sending the data record, you can query and set all the setup records in an easy way.

The construction of the data record looks like the following:

00 00 00 <command> <... additional data or parameter>

The 2<sup>nd</sup> Byte of the data record is used to decide if the Device reboot or not. So if the device should reboot we have the followed data record:

00 00 00 <command>...

not reboot :

00 01 00 <command>...

Basically we have 3 bytes set to 00h followed by a command byte, depending on the command there will be additional parameters necessary or some data will be delivered in an answer. Most commands invoke an answer sent out by the receiver.

An important fact to keep in mind, for the setup features, is that the setup is received or sent in strict binary format. That means the standard record of 120 bytes is sent/received as 120 bytes. The other setup records, which all have a length of 126 bytes, are sent/received with this length.

Table of commands:

Command Byte	Function & Parameters/Data
03	<b>Node Reset:</b> Parameter needs to be the software type for the specific Cobox application. For example, 33h 51h (="3Q") or 58h 31h (="X1").
F6	<b>Query of firmware version:</b> No parameters; answer comes with an F7-message (see below)
F7	<b>Answer for F6:</b> As parameter follows a total of 26 bytes: the 1 <sup>st</sup> 16 bytes of the firmware image, which contain the version, checksum and device type. After that follow 4 bytes of serial info and 6 bytes MAC address. To check if the device is a one channel or a two channel the low nibble in the third byte of the MAC address is decisive. If this is a 2 or 3 → 2 channel device, in all other cases → 1 channel device. Note for XPort & Micro100: the 4 bytes of serial info are returned as 1 byte with the OEM type and 3 bytes of 00, since serial number is not supported. Regardless of MAC address, XPort is a single channel device and Micro100 is a 2-channel device.
F8	<b>Query of configuration:</b> no parameters; answer comes with an F9-message (see below). This command is only applicable for the standard setup record (120 bytes).
F9	<b>Answer for F8:</b> As parameter follows the complete setup record (120 bytes) in binary format.

FA	<b>Set configuration:</b> As parameter the complete standard setup record has to be sent (120 bytes). The IP address will not be changed (bytes 0...3).
FB	<b>Answer for FA and FD:</b> After sending this message, the node makes a reset to initialise itself with the new configuration.
FC	<p><b>Set IP address:</b>  Parameter: the 1<sup>st</sup> 8 Byte <b>must</b> contain the ASCII-sequence „<b>IP-SETUP</b>“ (Hex 49 50 2D 53 45 54 55 50).  The next 2 bytes have to be set to 00  The next 2 bytes must contain the last 2 bytes of the MAC Address  The next 4 bytes have to be the NEW IP-address</p> <p>This block can be sent as a broadcast, because the MAC address is unique. There exists no acknowledge for this block. After setting the IP-address the node makes a reset.  Example (all in hex):  49 50 2D 53 45 54 55 50 00 00 2A 12 81 00 01 02  IP address of the node with - MAC address xx-xx-xx-xx-2A-12 set to 129.0.1.2</p>
FD	<b>Set configuration:</b> As parameter the complete setup record has to be sent (120 bytes). The IP address will also be changed (bytes 0...3).
E0 to EF	<b>Query of configuration:</b> With these commands all setup records including the standard record can be queried. The second nibble of the Command, '0' to 'F' represents the number of the setup record.
D0 to DF	<b>Answer to query of configuration (E0 to EF):</b> As parameter follows the complete appropriate (depending on the initiated command) setup record (120 bytes or 126 bytes) in binary format. D1 always returns 00 in the record, as this record is reserved for security features. D0 will return the standard setup record (120 bytes)
C0 to CF	<b>Set configuration:</b> With this command all setup records including the standard record can be set. The second nibble of the Command, '0' to 'F' represents the number of the setup record. C0 needs 120 bytes as parameter and C1 to CF need 126 bytes as parameter.
B0 to BF	<b>Answer to Set configuration (C0 to CF):</b> No parameter follows.

### 3. Configuration over the serial interface

For querying and setting the records over the serial interface, the Cobox must be set into Monitor Mode (refer to the Cobox manual). In this mode there is a variety of commands available. Some of them are used for querying and setting the configuration records. However, since some products do not support the full set of commands, refer to the corresponding manual for specific Monitor Mode information.

Communication is done in a command-response scheme. All commands will be acknowledged with a result code and prompt.

Most commands can be followed by an IP address, to specify a remote node.

#### 3.1. Intel HEX format

All sent/received data is represented in the Intel HEX format. With this format, arbitrary 8-bit binary data can be sent and received. The transmission is blocked in records, and every record has its own checksum.

##### 3.1.1. Record format

Beginning with `:` the record consists of block length (2-character HEX), followed by a 16-bit address (4-character HEX) and a block type (2-characters HEX). Then all data bytes are transmitted as 2-character HEX values, followed by the checksum (2-character HEX). It is built by adding all binary 8-bit values and taking the complement, so adding all byte values (including length, address and type) should yield 0.

NOTE: Caution should be taken when checking/changing any bytes marked as "Reserved". These reserved values could very well change in a future release.

##### 3.1.2. Example

```
:00000001FF      End record, type 01, length 00, address 00 00, checksum FF
:01002000805F    Data record consisting of one byte (value 80hex) for address
                  0020 (32dez).
```

For communication with the node, the following types are defined:

<b>00</b>	Data block program memory (firmware)
<b>01</b>	End record
<b>10</b>	Data block configuration memory

To get and set the node configuration, 120/126 bytes should be exchanged at once in 32-Byte records.

#### 3.2. Commands

## List of commands:

<b>DL</b>	Firmware download, take following records as new firmware
<b>SF</b>	Copy firmware to node with IP x.x.x.x (parameter)
<b>RS</b>	Reset node
<b>VS</b>	Query version. Answers with a single record (16 bytes)
<b>GC</b>	Get configuration. Node sends hex-records.
<b>G0 to Gf</b>	Get configuration (!!! Case sensitive)
<b>SC</b>	Set configuration. Node accepts configuration in hex-records.
<b>S0 to Sf</b>	Set configuration (!!! Case sensitive)
<b>PI</b>	Ping IP address x.x.x.x, to check if reachable over the network
<b>SN</b>	Get Serial number. Answers with a single record (9 bytes)
<b>NC</b>	Get Network configuration
<b>AT</b>	Get ARP table
<b>TT</b>	Get table of TCP sockets
<b>QU</b>	Quit diagnostics mode
<b>co</b>	Set IP address, hostbits and gateway IP Example: co 192.168.0.10 8 192.168.0.1 10001 with 192.168.0.10 = IP address of CoBox 8 = number of hostbits 192.168.0.1 = gateway IP address 10001 = port number of CoBox CoBox stores the setup and makes a reset. An 'X' is sent by the Cobox before the reset if command was OK

Functions SF and PI must be accompanied by an IP address, and work only for remote nodes.

Functions RS, VS, GC and SC can be given with an IP address. In that case, the command is executed at the remote node (if reachable and switched on).

The node generates records with a maximum of 32 bytes.

Prompt character: '>'

Acknowledge with error code directly before the prompt, codes:

- 0 - OK, no error
- 1 - Remote is not responding
- 2 - Remote node not reachable
- 8 - Wrong parameters
- 9 - Invalid command

## Example:

\*

**xx1**



\*\*\* NodeSet 1.0 \*\*\*

0>**VS**

:100000000010400333511000A00E00000000272113

0>

**Construction of VS answer:**

Bytes 3 and 4 are the firmware version with byte 3 = the 2<sup>nd</sup> part of the version and byte 4 = 1<sup>st</sup> part of the version.

In the example above the version is 3.40.

Bytes 5 and 6 are the destination filename for a firmware download via TFTP. For this particular CoBox this is 3Q = 33 51(hex).

## 4. Setup records

### 4.1. Setup record 0

The first setup record consists of 120 bytes. This is the standard record, which is available in each hardware platform. Unused bytes should be initialized as "00".

Address	Function
00...03	IP address of the unit
04	Reserved, (0)
05	Flag BYTE
	Bit 7 Reserved, 0
	Bit 6 Set 1 for AUI, 0 for 10/100BaseT/BNC (ignored for -mini)
	Bit 5...0 Reserved, 0
06	Number of host bits for subnetting; if 0, standard netmask for class A, B, C is used
07	TCP Keepalive valid range: 1 – 65; FFh = disabled
08...11	Telnet configuration password, 0 if not used
12...15	Gateway IP address (0,0,0,0 if not used)
16...63	48-byte channel 1 parameters: parameter setup channel 1, used as following:
16	Line interface mode, calculated as:

Bit	7	6	5	4	3	2	1	0
RS-232C							0	0
RS-422/485							0	1
RS-485 2-wire							1	1
7 Bit					1	0		
8 Bit					1	1		
No parity			0	0				
Even Parity			1	1				
Odd Parity			0	1				
1 Stop bit	0	1						
2 Stop bit	1	1						

- 17 Line speed  
 Bit 7...5 Reserved  
 Bit 4...0 Baud rate, coded:

Value	bps	Remarks
00	38400	
01	19200	
02	9600	
03	4800	
04	2400	

05	1200	
06	600	
07	300	
08	115200	
09	57600	
0A	230400	
0B	460800	
0C	921600	

## 18 Flow control

00	No flow control
01	XON/XOFF flow control in both directions
02	Hardware handshake with RTS/CTS lines (not Mini Rev. 1)
05	XON/XOFF, pass characters to host

## 19 Reserved

- 20..21 Own TCP port low-byte, high-byte (Intel)
- 22..23 Remote TCP port low-byte, high-byte (Intel)
- 24..27 Remote IP address (low/high)

## 28 Connect configuration, bit coded:

Option	7	6	5	4	3	2	1	0
<b>Connection acceptance</b>								
Never accept incoming	0	0						
Accept incoming with active DTR only (not Mini Rev. 1)	0	1						
Accept unconditional (if not busy)	1	1						
Use hostlist			1					
<b>Response on serial to connect</b>								
Nothing (quiet)				0				
Character response (C = connect, D = disconnect, N = not available/unreachable)				1				
<b>Active connection startup</b>								
No active connection start-up					0	0	0	0
Start connection with any character on serial line					0	0	0	1
Start connection with active-going DTR line					0	0	1	0
Start connection with a specific character on serial line					0	0	1	1
Manual connection start-up ('C' + address)					0	1	0	0
Autostart outbound connection					0	1	0	1
Hostlist	0	0	1	0				
<b>Datagram Type</b>								
Directed UDP					1	1	0	0
<b>Modem Mode</b>								
With Echo				1	0	1	1	0
Without Echo				0	0	1	1	0
Numeric modem result codes				1	0	1	1	1

## 29 Disconnect configuration

	Bit	7	6	5	4	3	2	1	0
Disconnect with DTR drop	1								
Ignore DTR	0								
Terminal type for telnet set/queried			1		0				
Channel (port) password required			0		1				
Hard disconnect						0			
Disable hard disconnect						1			
State LED off with connection									1
Check for CTRL-D to disconnect				1					

- 30 Disconnect with inactivity timeout, minutes, 00 if unused  
 31 Disconnect with inactivity timeout, seconds, 00 if unused  
 32..33 Characters to trigger send immediately (sendchar)  
 34 Flush mode, bit coded:

	Bit	7	6	5	4	3	2	1	0
Input buffer (serial line -> network)									
Clear with active connect (through serial):				1					
Clear with passive connect (from network):			1						
Clear at time of disconnect:		1							
Output buffer (network -> serial line)									
Clear with active connect:									1
Clear with passive connect through network:							1		
Clear at time of disconnect						1			
Alternate Packing Algorithm	1								

All functions can be selected independently from each other.

## 35 Pack-Ctrl-Byte

Function	7	6	5	4	3	2	1	0
Idle time to force transmit: 12 ms (avg.)							0	0
Idle time to force transmit: 52 ms (avg.)							0	1
Idle time to force transmit: 250 ms (avg.)							1	0
Idle time to force transmit: 5 s (!)							1	1
No trailing chars after sendchar(s)					0	0		
One trailing char after sendchar(s)					0	1		
Two trailing chars after sendchar(s)					1	0		
Sendchar define 2-Byte sequence				1				
Send immediate after Sendchar			1					

36..47 Reserved, for the different UDP master/slave protocols (customized versions). Contains for example slave addresses

48..63 a) Terminal name for telnet terminal type option (15 characters max), 0-terminated  
if set and bit 6 in disconnect mode is set, telnet connection will be assumed.

b) Password for „Passworded Socket Connection“ (bit 4 in disconnect mode set)

64...111 48 byte channel 2 parameters, same meaning as with channel 1

112...119 TokenRing hardware:

112..117 TR administered address; 118..119 Reserved, (0)

112...119 Ethernet hardware:

DHCP device name

(Since 5.1b5 and XPort 1.2, these are the first 8 bytes for the DHCP name. Since then we support up to 16 bytes for the name, the second part is in Setup record 3)

### 4.1.1. Serial usage

Before V4.3:

Query GC  
Set SC

Since V4.3:

Query GC or G0  
Set SC or S0

### 4.1.2. Network usage

Before V4.3:

Query F8  
Set FA (without changing the IP address)  
Set FD (with changing the IP address)

Since V4.3:

Query F8 or E0

Set FA (without changing the IP address) or C0  
 Set FD (with changing the IP address)

## 4.2. Setup record 1

This record is reserved for security parameters. That means there are some restrictions on reading this setup record. Basically this setup record is “write-only”.

Address	Function
00	Security flags Bit 7 reserved, 0 Bit 6 1=SNMP disabled Bit 5 1=Web Server disabled Bit 4 1=Port 77FEh disabled Bit 3 1=Enhanced password enabled Bit 2 1=Encryption enabled Bit 1 1=TFTP disabled Bit 0 1=Telnet Setup disabled
01...16	Twofish or AES key (16 byte = 128 bit)
17...33	16 byte enhanced password + Null terminator
34...47	SNMP Community 13 byte + Null terminator (since 4.5b8 and XPort 1.2)
48	Additional Security flags Bit 7 1=WEB Setup disabled Bit 6 not used (0) Bit 5 reserved (0) Bit 4 not used (0) Bit 3 not used (0) Bit 2 not used (0) Bit 1 1=Port 77F0h disabled Bit 0 1=Echo enabled
49	Key length (in bytes) for AES. 16, 24 or 32 for 128, 192 or 256 bit keys, respectively
50...65	2 <sup>nd</sup> part AES key when using 192 or 256 bit keys
66...125	not used

### 4.2.1. Serial usage

Since V4.3:

Query G1 (ATTENTION: will always return 00h for each setup byte)  
 Set S1

### 4.2.2. Network usage

Since V4.3:

Query E1 (ATTENTION: will always return 00h for each setup byte)  
 Set C1

### 4.3. Setup record 2

This setup record is not used but reserved.

Address	Function
00...125	not used
<b>4.3.1. Serial usage</b>	
Since V4.3:	
Query	G2
Set	S2
<b>4.3.2. Network usage</b>	
Since V4.3:	
Query	E2
Set	C2

### 4.4. Setup record 3

This record is used for additional parameters added to the Cobox.

Address	Function
00	Hostlist retry counter
01...02	Hostlist retry timeout
03...74	Hostlist, 12 entries each 4 byte IP + 2 byte port number
75	Start character serial channel 1
76	Start character serial channel 2
77...99	not used
100...101	ARP cache timeout
102...109	DHCP name (the second 8 byte of the possible length of 16 byte)
110...111	HTTP port number
112...113	SMTP port number
114...115	Reserved
116	Additional flags
	Bit 7 1=High Performance enabled
	Bit 6 1=Monitor Mode Entry During Startup disabled
	Bit 5 not used (0)
	Bit 4 not used (0)
	Bit 3 not used (0)
	Bit 2 reserved (0)
	Bit 1 1=Auto Increment Source Port for Channel 2 enabled
	Bit 0 1=Auto Increment Source Port for Channel 1 enabled
117...125	not used

#### 4.4.1. Serial usage

Since V4.3:

Query G3

Set S3

#### 4.4.2. Network usage

Since V4.3:

Query E3

Set C3

### 4.5. Setup record 4

This setup record is reserved.

Address	Function
---------	----------

00...125	not used
----------	----------

#### 4.5.1. Serial usage

Since V4.3:

Query G4

Set S4

#### 4.5.2. Network usage

Since V4.3:

Query E4

Set C4

### 4.6. Setup record 5

This record contains specific e-mail notification parameters, used in conjunction with record 6.

Address	Function
---------	----------

00...03	Mail server IP address
---------	------------------------

04...52	Recipient 1, 49-byte string (must include null terminator)
---------	--

53...101	Recipient 2, 49-byte string (must include null terminator)
----------	--

102...125	Unit name, 24-byte string (must include null terminator)
-----------	--

#### 4.6.1. Serial usage

Query G5

Set S5

#### 4.6.2. Network usage

Query E5

Set C5



## 4.7. Setup record 6

This record contains additional e-mail notification parameters, used in conjunction with record 5.

Address	Function
00...23	Domain name, 24-byte string (must include null terminator)
24	Trigger1 Mask, selects the configurable pins (1,2, or 3) to be used in this trigger condition (any combination): Bit 7...3 Reserved, must be 0 Bit 2 1=CP3 used in trigger condition, 0=CP3 not used Bit 1 1=CP2 used in trigger condition, 0=CP2 not used Bit 0 1=CP1 used in trigger condition, 0=CP1 not used
25	Trigger1 Compare, selects the level of the configurable pins on which to trigger (any combination): Bit 7...3 Reserved, must be 0 Bit 2 1=trigger on CP3 Active, 0=trigger on CP3 Inactive Bit 1 1=trigger on CP2 Active, 0=trigger on CP2 Inactive Bit 0 1=trigger on CP1 Active, 0=trigger on CP1 Inactive Note: if none of the configurable pins is to be used in a trigger, that is the trigger Mask=0, then the Compare must be set to 0
26	Trigger1 Serial state: 3=serial compare is off, 0=serial compare is on
27...28	Trigger1 Serial compare, 2-byte sequence
29...52	Trigger1 Message, 24-byte string (must include null terminator)
53	Trigger1 Priority: 3=normal, 1=high
54...55	Trigger1 Minimum interval (seconds): time required between two trigger conditions for a new notification, range: 0-65535
56...57	Trigger1 Maximum interval (seconds): time required for original trigger condition to be present for a re-notification, range: 1-65535; 0=disabled
58	Trigger2 Mask, selects the configurable pins (1,2, or 3) to be used in this trigger condition (any combination): Bit 7...3 Reserved, must be 0 Bit 2 1=CP3 used in trigger condition, 0=CP3 not used Bit 1 1=CP2 used in trigger condition, 0=CP2 not used Bit 0 1=CP1 used in trigger condition, 0=CP1 not used
59	Trigger2 Compare, selects the level of the configurable pins on which to trigger (any combination): Bit 7...3 Reserved, must be 0 Bit 2 1=trigger on CP3 Active, 0=trigger on CP3 Inactive Bit 1 1=trigger on CP2 Active, 0=trigger on CP2 Inactive Bit 0 1=trigger on CP1 Active, 0=trigger on CP1 Inactive Note: if none of the configurable pins is to be used in a trigger, that is the trigger Mask=0, then the Compare must be set to 0
60	Trigger2 Serial state: 3=serial compare is off, 0=serial compare is on
61...62	Trigger2 Serial compare, 2-byte sequence
63...86	Trigger2 Message, 24-byte string (must include null terminator)
87	Trigger2 Priority: 3=normal, 1=high

88...89	Trigger2 Minimum interval (seconds): time required between two trigger conditions for a new notification, range: 0-65535
90...91	Trigger2 Maximum interval (seconds): time required for original trigger condition to be present for a re-notification, range: 1-65535; 0=disabled
92	Trigger3 Mask, selects the configurable pins (1,2, or 3) to be used in this trigger condition (any combination): Bit 7...3 Reserved, must be 0 Bit 2 1=CP3 used in trigger condition, 0=CP3 not used Bit 1 1=CP2 used in trigger condition, 0=CP2 not used Bit 0 1=CP1 used in trigger condition, 0=CP1 not used
93	Trigger3 Compare, selects the level of the configurable pins on which to trigger (any combination): Bit 7...3 Reserved, must be 0 Bit 2 1=trigger on CP3 Active, 0=trigger on CP3 Inactive Bit 1 1=trigger on CP2 Active, 0=trigger on CP2 Inactive Bit 0 1=trigger on CP1 Active, 0=trigger on CP1 Inactive Note: if none of the configurable pins is to be used in a trigger, that is the trigger Mask=0, then the Compare must be set to 0
94	Trigger3 Serial state: 3=serial compare is off, 0=serial compare is on
95...96	Trigger3 Serial compare, 2-byte sequence
97...120	Trigger3 Message, 24-byte string (must include null terminator)
121	Trigger3 Priority: 3=normal, 1=high
122...123	Trigger3 Minimum interval (seconds): time required between two trigger conditions for a new notification, range: 0-65535
124...125	Trigger3 Maximum interval (seconds): time required for original trigger condition to be present for a re-notification, range: 1-65535; 0=disabled

#### 4.7.1. Serial usage

Query	G6
Set	S6

#### 4.7.2. Network usage:

Query	E6
Set	C6

### 4.8. Setup record 7

This record contains configurable pins settings. Two different formats are in use.

#### 4.8.1. XPort, XPort-03, XPort-485

Address	Function
00	CP1 option: CTS (0), IN1 (4), OUT1 (5), LED1 (10), RS485_TXEN (12)
01	CP2 option: DCD (2), IN2 (6), OUT2 (7), RS485_TXEN (12)
02	CP3 option: RTS (1), DTR (3), IN3 (8), OUT3 (9), LED3 (11), RS485_TXEN (12)

03	CTS state:	Bit 7 1=signal is active, Bit 6...0 reserved
04	RTS state:	Bit 7 1=signal is active, Bit 6...0 reserved
05	DCD state:	Bit 7 1=signal is active, Bit 6...0 reserved
06	DTR state:	Bit 7 1=signal is active, Bit 6...0 reserved
07	IN1 state:	Bit 7 1=signal is active, Bit 6...0 reserved
08	OUT1 state:	Bit 7 1=signal is active, Bit 6...0 reserved
09	IN2 state:	Bit 7 1=signal is active, Bit 6...0 reserved
10	OUT2 state:	Bit 7 1=signal is active, Bit 6...0 reserved
11	IN3 state:	Bit 7 1=signal is active, Bit 6...0 reserved
12	OUT3 state:	Bit 7 1=signal is active, Bit 6...0 reserved
13	LED1 state:	Bit 7 1=signal is active, Bit 6...0 reserved
14	LED3 state:	Bit 7 1=signal is active, Bit 6...0 reserved
15	RS485_TXEN state:	Bit 7 1=signal is active, Bit 6...0 reserved
16...123	not used	
124	RS485_TXEN signal level: 1=active high, 0=active low	
125	User I/O signal level: 1=active high, 0=active low	

#### 4.8.2. WiPort (not WiBox)

Address	Function
---------	----------

00...10	CP0...CP10
	Bit 0-6 Function selection
	0=General Purpose Input
	1=General Purpose Output
	2=Modem Ctrl Input channel 0
	3=Modem Ctrl Output channel 0
	4=Modem Ctrl Input channel 1
	5=Modem Ctrl Output channel 1
	6=Status LED channel 0
	7=Status LED channel 1
	8=Diagnostics LED
	9=RS485 Selection
	10=RS485 2 wire
	11=General Purpose Input and Trigger input
	12=Reset to defaults
	13=RS485 4 wire
	Bit 7 Active level
	0=high active, 1=low active.

#### 4.8.3. Serial usage

Query	G7
Set	S7

#### 4.8.4. Network usage

Query E7  
Set C7

#### 4.9. Setup record 8

This record contains specific wireless network interface parameters, used in conjunction with record 9. (Currently on WiPort and WiBox only)

Address	Function
00	<p>Bit 0 WiFi enable</p> <p>Bit 1-3 Power level (not supported on all HW) 0=14dBm, 1=20 dBm, 2=17 dBm, 3=15 dBm, 4=14 dBm, 5=11 dBm, 6=8 dBm, 7=invalid.</p> <p>Bit 4-6 Transmission Data rate 0=1 Mbps, 1=2 Mbps, 2=5.5 Mbps, 3=11 Mbps, 4=2, 1 Mbps, 5=5.5, 2, 1 Mbps, 6=11, 5.5, 2, 1 Mbps.</p>
01	<p>Bit 7 Power management enable</p> <p>Bit 0 Ad Hoc network creation enable</p> <p>Bit 1-3 Ad Hoc network creation country 0=US, 1=FR, 2=JP, 3=Others</p> <p>Bit 4-7 Ad Hoc network creation channel Valid: US:1...11, FR: 10...13, JP:1...14. Others: 1...13</p>
02	<p>Bit 0-1 Security style 0=None, 1=WEP, 2=WPA.</p> <p>Bit 2-4 Authentication method 0=None, 1=Shared, 2=TLS, 3=TTLS, 4=PEAP, 5-7=Reserved</p> <p>Bit 5-7 Encryption method 0=None, 1=WEP64, 2=WEP128, 3-7=Reserved</p>
03...35	SSID
36...68	BSSID
69...125	Passphrase part 1

#### 4.9.1. Serial usage

Query G8  
Set S8

#### 4.9.2. Network usage

Query E8  
Set C8

## 4.10. Setup record 9

This record contains specific wireless network interface parameters, used in conjunction with record 8. (Currently on WiPort and WiBox only)

Address	Function
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00...06	Passphrase part 2
07...38	Encryption key in hex
39...125	Reserved

### 4.10.1. Serial usage

Query	G9
Set	S9

### 4.10.2. Network usage:

Query	E9
Set	C9

## 4.11. Setup record 10 to 15

These setup records are not used yet.

Address	Function
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00...125	not used
----------	----------

### 4.11.1. Serial usage

Since V4.3:

Query	G8 to Gf (!!! Case sensitive)
Set	S8 to Sf (!!! Case sensitive)

### 4.11.2. Network usage

Since V4.3:

Query	E8 to EF
Set	C8 to CF