Summary

1. UPS Protocol

1.1. Technical specifications

Serial protocol: 2400 Baud, No Parity, 8 Data bits, 1 Stop bit

Packet format:	STX	data length	…	data	…	Checksum
	(ASCII 0x02)	***int8u***				***int8u***

The whole packet has a maximum length of 256 bytes.

All the numeric data are little-endian, i.e. are sent LSB first.

STX indicates the start of the packet.

Data length is the number of bytes of data + the check byte.

The "check" byte is computed as the sum modulus 256 of all the bytes in the packet except the STX and the check byte itself.

In case of reception of an invalid checksum or a partial packet, no answer will be supplied.

In case of an invalid command the answer will be:

int8u	=	STX	[0x02]
int8u	=	data length	[0x04]
int8u	=	received command	[…]
int8u	=	'K'	[0x4B]
int8u	=	'o'	[0x6F]
int8u	=	Checksum	[…]

In order to flush the receiver buffer of UPS, send 255 bytes of NUL (ASCII 0) without expecting any answer.

The serial communication is half duplex: while the UPS is sending an answer to a pending packet, the receiver is disabled.

1.2. RS232 cable layout

UPS Socket D-SUB 9 pins (male pins)		**PC** Plug D-SUB 9 pins (female pins)
2	----------	2
3	----------	3
5	----------	5

1.3. Families of UPS

id code	*cfg*	*family*	*model*
# 11	1	ally HF 800/1600	ally HF 800
# 11	2	ally HF 800/1600	ally HF 1600
# 12	1	ally HF 1000/2000	ally HF 1000
# 12	2	ally HF 1000/2000	ally HF 2000
# 13	1	ally HF 1250/2500	ally HF 1250
# 13	2	ally HF 1250/2500	ally HF 2500
# 14	1	HF Megaline	Megaline 1250
# 14	2	HF Megaline	Megaline 2500
# 14	3	HF Megaline	Megaline 3750
# 14	4	HF Megaline	Megaline 5000
# 15	4	HF Megaline / 2	Megaline 5000 / 2
# 15	5	HF Megaline / 2	Megaline 6250 / 2
# 15	6	HF Megaline / 2	Megaline 7500 / 2
# 15	7	HF Megaline / 2	Megaline 8750 / 2
# 15	8	HF Megaline / 2	Megaline 10000 / 2
# 17	1	WHAD 800	WHAD 800
# 18	1	WHAD 1000	WHAD 1000
# 19	1	WHAD 1500	WHAD 1500
# 20	1	DHEA 1000	DHEA 1000
# 21	1	DHEA 1500	DHEA 1500
# 27	1	WHAD 2000	WHAD 2000 EXP
# 28	1-2	WHAD 1250-2500 / WHAD CAB	WHAD 1250-2500 EXP / CAB

2. Common commands

0 UPS info (read)

Request command:

int8u	= 0

Answer:

int8u	Command (replica of the request command)	
int8u	Model (see model table at the beginning of this document)	
int8u	Configuration (number and/or type of modules)	
int16u	Maximum active power (W)	
int8u	Firmware version	
int8u	Firmware subversion	
char	[1..12] Serial number	

1 Output data (read)

Request command:

int8u	= 1

Answer:

int8u	Command (replica of the request command)	
int16u	Active power (W)	{ -1: overrange } { -2: not available }
int16u	Voltage (V)	{ -1: overrange } { -2: not available }
int16u	Current (Arms*10)	{ -1: overrange } { -2: not available }
int16u	Peak current (A*10)	{ -1: overrange } { -2: not available }

2 Input data (read)

Request command:

int8u	= 2

Answer:

int8u	Command (replica of the request command)	
int16u	Active power (W)	{ -1: overrange } { -2: not available }
int16u	Voltage (V)	{ -1: overrange } { -2: not available }
int16u	Current (Arms*10)	{ -1: overrange } { -2: not available }
int16u	Peak current (A*10)	{ -1: overrange } { -2: not available }

3 UPS status (read)

Request command:

int8u	= 3	

Answer:

int8u	Command (replica of the request command)	
int8u	Status 0: Running on mains power 1: Running on battery power 2: Battery reserve 3: Bypass engaged 4: Manual bypass engaged	
int8u	Fault 0: All right 1: Overload 2: Overheat 3: Hardware Fault 4: Battery charger failure (overcharging) 5: Replace batteries	
int8u	UPS Temperature in ºC + 128	{ i.e T = n-128 ºC } { 0: not available }

4 Battery data (read)

Request command:

int8u	= 4	

Answer:

int8u	Command (replica of the request command)	
int16u	Actual value (V*10)	
int16u	Reserve Threshold (V*10)	
int16u	Exhaust Threshold (V*10)	

5 History data (read)

Request command:

int8u	= 5	

Answer:

int8u	Command (replica of the request command)	
int32u	UPS Total Run Time (s)	
int32u	Inverter Total Run Time (s)	
int16u	Inverter Interventions	
int16u	Battery Full Discharges	
int16u	Stabilizer or Bypass Interventions	{ -2: not available }
int16u	Overheatings	{ -2: not available }

6 Scheduling (read)

Request command:

int8u	= 6	

Answer:

int8u	Command (replica of the request command)	
int32u	Remaining time to shutdown (s)	{ -1: no shutdown }
int32u	Programmed time to restart (s)	{ -1: no restart }

7 Event list (most recent first) (read)

Request command:

int8u = 7

Answer:

int8u Command (replica of the request command)
int8u Event Absolute Counter (roll over at 256)
variable length; 1 byte for each event; the list can be empty

1: Odd Turn Off
2: Memory Error!
3: Battery Limit
4: Battery Charger
5: Overload
6: Long Overload
7: Neutral Wrong
8: Neutral Wrong while running
9: Modules Number
10: Programmed battery time expired
11: Programmed reserve time expired
12: Earth Fault
13: Load Waiting
14: HV Bus Runaway
15: Output DC Level
16: Bad Wiring
17: Hardware Fault: Unknown
18: Hardware Fault: Inverter
19: Hardware Fault: P.F.C.
20: Hardware Fault: Inverter P.F.C.
21: Hardware Fault: Booster
22: Hardware Fault: Inverter Booster
23: Hardware Fault: P.F.C. Booster
24: Hardware Fault: Inverter P.F.C. Booster
25: Hardware Fault: Overheat
26: Hardware Fault: Inverter Overheat
27: Hardware Fault: P.F.C. Overheat
28: Hardware Fault: Inverter P.F.C. Overheat
29: Hardware Fault: Booster Overheat
30: Hardware Fault: Inverter Booster Overheat
31: Hardware Fault: P.F.C. Booster Overheat
32: Hardware Fault: Inverter P.F.C. Booster Overheat
33: Hardware Fault: Battery charger
34: Hardware Fault: Overheat & Battery charger
35: Output Plug Removed

8 Times on battery (read)

Request command:

int8u = 8

Answer:

int8u Command (replica of the request command)
int16u Max time on battery (s) { 0: not limited } { -2: not available }
int16u Max time after battery reserve (s) { 0: not limited } { -2: not available }
int8u not 0 -> Autorestart after battery depleted enabled

9 Neutral sense (read)

Request command:

int8u = 9

Answer:

int8u Command (replica of the request command)
int8u not 0 -> Neutral sense enabled
int8u not 0 -> Ignore while running

10 Scheduling (set)

Request command:

int8u	= 10	
int32u	Remaining time to shutdown (s)	{ -1 = no shutdown }
int32u	Programmed time to restart (s)	{ -1 = no restart }

Answer:

int8u	Command (replica of the request command)	
int32u	Remaining time to shutdown (s)	{ -1 = no shutdown }
int32u	Programmed time to restart (s)	{ -1 = no restart }

N.B.: If a selected time is longer than the maximum allowed the UPS uses the maximum and reports this in the answer.

11 Neutral sense (set)

Request command:

int8u	= 11
int8u	not 0 -> Neutral sense enabled
int8u	not 0 -> Ignore while running

Answer:

int8u	Command (replica of the request command)
int8u	not 0 -> Neutral sense enabled
int8u	not 0 -> Ignore while running

12 Times on battery (set)

Request command:

int8u	= 12	
int16u	Max time on battery (s)	{ 0 = not limited }
int16u	Max time after battery reserve (s)	{ 0 = not limited }
int8u	not 0 -> Autorestart after battery depleted enabled	

Answer:

int8u	Command (replica of the request command)	
int16u	Max time on battery (s)	{ 0 = not limited }
		{ FFFE = not available }
int16u	Max time after battery reserve (s)	{ 0 = not limited }
		{ FFFE = not available }
int8u	not 0 -> Autorestart after battery depleted enabled	

N.B.: If a selected time is longer than the maximum allowed the UPS uses the maximum and reports this in the answer.

13 Buzzer mute (set)

Request command:

int8u	= 13
int8u	0 -> not muted
	1 -> muted
	2 -> read current status

Answer:

int8u	Command (replica of the request command)
int8u	0 -> not muted
	1 -> muted

N.B.: Buzzer can be disabled only up to the next alarm condition.

14 Battery test (set)

Request command:

int8u = 14

int8u
- 0 -> perform the battery test
- 1 -> force the UPS to work on battery power
- 2 -> restore the UPS standard mode (on mains power)

Answer (at the end of the battery test if it's required):

int8u Command (replica of the request command)

int8u
- 0 -> Generic ok
- 1 -> Battery charge: 20 %
- 2 -> Battery charge: 40 %
- 3 -> Battery charge: 60 %
- 4 -> Battery charge: 80 %
- 5 -> Battery charge: 100 %
- 254 -> Batteries must be replaced
- 255 -> Test impossible

3. MEGALINE specific commands

21 No load threshold (set)

Request command:

int8u	= 21
int16u	No load threshold (W)

Answer:

int8u	Command (replica of the request command)
int16u	No load threshold (W)

N.B.: If the threshold is above or below the allowed range the UPS uses the maximum or minimum value respectively.
This will be reported in the answer.

22 No load threshold (read)

Request command:

int8u	= 22

Answer:

int8u	Command (replica of the request command)
int16u	No load threshold (W)

23 Output voltage control (set)

Request command:

int8u	= 23
int8u	Output set level (V)
int8u	not 0 -> Output 60 Hz
int8u	not 0 -> PLL inhibited
int8u	not 0 -> Extended PLL lock range
int8u	Dip detector speed: 1 -> fast 2 -> standard 3 -> slow

Answer:

int8u	Command (replica of the request command)
int8u	Output set level (%) (for internal use only)
int8u	not 0 -> Output 60 Hz
int8u	not 0 -> PLL inhibited
int8u	not 0 -> Extended PLL lock range
int8u	Dip detector speed: 1 -> fast 2 -> standard 3 -> slow

N.B.: If the level is above or below the allowed range, the UPS uses the maximum or minimum value respectively.
This will be reported in the answer.

24 Output voltage control (read)

Request command:

int8u	= 24

Answer:

int8u	Command (replica of the request command)
int8u	Output set level (%) (for internal use only)
int8u	not 0 -> Output 60 Hz
int8u	not 0 -> PLL inhibited
int8u	not 0 -> Extended PLL lock range
int8u	Dip detector speed: 1 -> fast 2 -> standard 3 -> slow

25 Bypass (set)

Request command:

int8u	= 25
int8u	not 0 -> Bypass enabled
int8u	not 0 -> Bypass is forced
int8u	not 0 -> Off-line mode of operation
int8u	not 0 -> Load Waiting Mode enabled

Answer:

int8u	Command (replica of the request command)
int8u	not 0 -> Bypass enabled
int8u	not 0 -> Bypass is forced
int8u	not 0 -> Off-line mode of operation
int8u	not 0 -> Load Waiting Mode enabled

N.B.: Load Waiting Mode, Off-line mode and forced bypass can not be enabled if the bypass is disabled.

26 Bypass (read)

Request command:

int8u	= 26

Answer:

int8u	Command (replica of the request command)
int8u	not 0 -> Bypass enabled
int8u	not 0 -> Bypass is forced
int8u	not 0 -> Off-line mode of operation
int8u	not 0 -> Load Waiting Mode enabled

27 Hardware status report (read)

Request command:

int8u	= 27

Answer:

int8u	Command (replica of the request command)	
int8u	Number of faulty modules	{ -2 = not available }
int8u	Hardware Fault:	

0: Unknown or none
1: Inverter
2: P.F.C.
3: Inverter P.F.C.
4: Booster
5: Inverter Booster
6: P.F.C. Booster
7: Inverter P.F.C. Booster
8: Overheat
9: Inverter Overheat
10: P.F.C. Overheat
11: Inverter P.F.C. Overheat
12: Booster Overheat
13: Inverter Booster Overheat
14: P.F.C. Booster Overheat

15: Inverter P.F.C. Booster Overheat
16: Battery charger
17: Overheat & Battery charger

31 Bus voltages (read)

Request command:

int8u	= 31

Answer:

int8u	Command (replica of the request command)
int16u	Positive bus voltage
int16u	Negative bus voltage (absolute value)

32 Battery thresholds (set)

Request command:

int8u	= 32	
int16u	Reserve Threshold (V*10)	{ 0 = automatic }
int16u	Exhaust Threshold (V*10)	{ 0 = automatic }
int8u	not 0 -> Perform an automatic battery test after turn on with mains power present	

Answer:

int8u	Command (replica of the request command)	
int16u	Reserve Threshold (V*10)	{ 0 = automatic }
int16u	Exhaust Threshold (V*10)	{ 0 = automatic }
int8u	not 0 -> Perform an automatic battery test after turn on with mains power present	

N.B.: If a threshold is above or below the allowed range the UPS uses the maximum or minimum value respectively.
If Reserve Threshold < Exhaust Threshold then Reserve Threshold = Exhaust Threshold. This will be reported in the answer.
Exception: selecting a level of 0 V for at least one of the thresholds means using for both the default levels that are load dependent (automatic mode).

33 Battery thresholds mode (read)

Request command:

int8u	= 33

Answer:

int8u	Command (replica of the request command)
int8u	not 0 -> Automatic battery thresholds
int8u	not 0 -> Perform an automatic battery test after turn on with mains power present

36 Line frequency autoselect (set)

Request command:

int8u	= 36
int8u	0 -> Line frequency autoselect disabled 1 -> Line frequency autoselect enabled 2 -> Read line frequency autoselect

Answer:

int8u	Command (replica of the request command)
int8u	0 -> Line frequency autoselect disabled 1 -> Line frequency autoselect enabled

 # 37 Battery state of charge (read)

Request command:

int8u	= 37

Answer:

int8u	Command (replica of the request command)
int8u	0 -> Data are valid 1 -> Data are not valid (battery discharge learning required) 255 -> Impossible (classic management is selected)
int16u	Remaining time to battery exhaust (s)
int8u	Battery remaining charge (%)

 # 38 Battery discharge learning (set)

Request command:

int8u	= 38
int8u	0 -> Start battery discharge learning 1 -> Read battery discharge learning status 2 -> Abort battery discharge learning

Answer:

int8u	Command (replica of the request command)
int8u	Battery discharge learning status 0: Running 1: Not running 2: Ended 255: Impossible (UPS on battery power or classic management is selected)

 # 39 Battery autonomy management

Request command:

int8u	= 39
int8u	0 -> Set classic management 1 -> Set S.O.C. management 2 -> Read actual status

Answer:

int8u	Command (replica of the request command)
int8u	Actual battery autonomy management 0: Classic management 1: S.O.C. management

 # 40 Battery reserve time (set)

Request command:

int8u	= 40
int16u	Reserve time (m)

Answer:

int8u	Command (replica of the request command)
int16u	Actual reserve time (m)

 # 41 Battery reserve time (read)

Request command:

int8u	= 41

Answer:

int8u	Command (replica of the request command)
int16u	Actual reserve time (m)

44 Output voltage control (set)

Request command:

int8u	= 44
int8u	Output set level (V)
int8u	not 0 -> Output 60 Hz
int8u	not 0 -> PLL inhibited
int8u	not 0 -> Extended PLL lock range
int8u	Dip detector speed: 1 -> fast 2 -> standard 3 -> slow

Answer:

int8u	Command (replica of the request command)
int8u	Output set level (V)
int8u	not 0 -> Output 60 Hz
int8u	not 0 -> PLL inhibited
int8u	not 0 -> Extended PLL lock range
int8u	Dip detector speed: 1 -> fast 2 -> standard 3 -> slow

N.B.: If the level is above or below the allowed range, the UPS uses the maximum or minimum value respectively.
This will be reported in the answer.

45 Output voltage control (read)

Request command:

int8u	= 45

Answer:

int8u	Command (replica of the request command)
int8u	Output set level (V)
int8u	not 0 -> Output 60 Hz
int8u	not 0 -> PLL inhibited
int8u	not 0 -> Extended PLL lock range
int8u	Dip detector speed: 1 -> fast 2 -> standard 3 -> slow

46 Single event read

Request command:

int8u	= 46
int8u	= 0 -> Reset (answer will contain most recent event) = 1 -> Autoincrement

Answer:

int8u	Command (replica of the request command)
int8u	Time Stamp - Year (BCD packed)
int8u	Time Stamp - Month (BCD packed)
int8u	Time Stamp - Day (BCD packed)
int8u	Time Stamp - Hour (BCD packed)
int8u	Time Stamp - Min (BCD packed)
int8u	Event Code – LSB 0 = Regular Turn Off 1 = Irregular turn Off 2 = Memory Error! 3 = Low Battery Turn Off 4 = Battery Runaway 5 = Overload Turn Off 6 = Long Overload 7 = Neutral Wrong Turn Off 8 = Neutral Wrong while running 9 = Modules Number Error

10 = Programmed battery time expired
11 = Programmed reserve time expired
12 = Earth Fault Turn Off
13 = Load Waiting Turn Off
14 = HV Bus Runaway
15 = Output DC Level
16 = Bad Wiring
17 = Hardware Fault: Unknown
18 = Hardware Fault: Inverter
19 = Hardware Fault: P.F.C.
20 = Hardware Fault: Inverter P.F.C.
21 = Hardware Fault: Booster
22 = Hardware Fault: Inverter Booster
23 = Hardware Fault: P.F.C. Booster
24 = Hardware Fault: Inverter P.F.C. Booster
25 = Hardware Fault: Overheat
26 = Hardware Fault: Inverter Overheat
27 = Hardware Fault: P.F.C. Overheat
28 = Hardware Fault: Inverter P.F.C. Overheat
29 = Hardware Fault: Booster Overheat
30 = Hardware Fault: Inverter Booster Overheat
31 = Hardware Fault: P.F.C. Booster Overheat
32 = Hardware Fault: Inverter P.F.C. Booster Overheat
33 = Hardware Fault: Battery charger
34 = Hardware Fault: Overheat & Battery charger
35 = Output Plug Removed
36 = Mains Power: voltage very high
37 = Watchdog reset
38 = Battery Startup failed
39 = Battery Calibration aborted by user
40 = Mains Power: SAG
41 = Mains Power: SWELL
42 = Mains Power: BROWNOUT
43 = Mains Power: SPIKE
44 = Mains Power: Harmonic distortion
45 = Neutral Voltage: SWELL
46 = Neutral Voltage: SPIKE

int8u Event Code - extended byte 1
int8u Event Code - extended byte 2
int8u Event Memory Position

 # 48 Date/Time (set)

Request command:

int8u = 48
int8u Year (BCD packed)
int8u Month (BCD packed)
int8u Day (BCD packed)
int8u Hour (BCD packed)
int8u Min (BCD packed)
int8u Sec (BCD packed)
int8u Day of Week { 0 = Sunday; 1 = Monday; … }

Answer:

int8u Command (replica of the request command)
int8u Year (BCD packed)
int8u Month (BCD packed)
int8u Day (BCD packed)
int8u Hour (BCD packed)
int8u Min (BCD packed)
int8u Sec (BCD packed)
int8u Day of Week { 0 = Sunday; 1 = Monday; … }

49 Date/Time (read)

Request command:

int8u	= 49

Answer:

int8u	Command (replica of the request command)
int8u	Year (BCD packed)
int8u	Month (BCD packed)
int8u	Day (BCD packed)
int8u	Hour (BCD packed)
int8u	Min (BCD packed)
int8u	Sec (BCD packed)
int8u	Day of Week { 0 = Sunday; 1 = Monday; … }

52 Calendar scheduling (set)

Request command:

int8u	= 52
int8u	Step index (0..step_memory_dimension-1)
int8u	Month (BCD packed) { 0xAA = wildcard }
int8u	Day (BCD packed) { 0xAA = wildcard }
int8u	Day of Week { 0 = Sunday; 1 = Monday; … ; 0xAA = wildcard }
int8u	Hour (BCD packed)
int8u	Min (BCD packed)
int8u	Action

0: No Action – Delete Step
1: Turn Off
2: Turn On
3: Battery Calibration
4: Battery Test

Answer:

int8u	Command (replica of the request command)
int8u	Step index (0..step_memory_dimension-1)
int8u	Month (BCD packed) { 0xAA = wildcard }
int8u	Day (BCD packed) { 0xAA = wildcard }
int8u	Day of Week { 0 = Sunday; 1 = Monday; … ; 0xAA = wildcard }
int8u	Hour (BCD packed)
int8u	Min (BCD packed)
int8u	Action

0: No Action
1: Turn Off
2: Turn On
3: Battery Calibration
4: Battery Test
255: Step index out of range

53 Calendar scheduling (read)

Request command:

int8u	= 53
int8u	Step index (0..step_memory_dimension-1)

Answer:

int8u	Command (replica of the request command)
int8u	Step index
int8u	Month (BCD packed) { 0xAA = wildcard }
int8u	Day (BCD packed) { 0xAA = wildcard }
int8u	Day of Week { 0 = Sunday; 1 = Monday; … ; 0xAA = wildcard }
int8u	Hour (BCD packed)
int8u	Min (BCD packed)
int8u	Action

0: No Action
1: Turn Off
2: Turn On
3: Battery Calibration
4: Battery Test
255: Step index out of range

54 Calendar scheduling enable

Request command:

int8u	= 54
int8u	0 -> Disable
	1 -> Enable
	2 -> Read actual status

Answer:

int8u	Command (replica of the request command)
int8u	0 -> Disabled
	1 -> Enabled

4. WHAD specific commands

 # 21 No load threshold (set)
same as MEGALINE specific command #21

 # 22 No load threshold (read)
same as MEGALINE specific command #22

 # 23 Output voltage control (set)
same as MEGALINE specific command #23

 # 24 Output voltage control (read)
same as MEGALINE specific command #24

 # 25 Bypass (set)
same as MEGALINE specific command #25

 # 26 Bypass (read)
same as MEGALINE specific command #26

 # 27 Hardware status report (read)
same as MEGALINE specific command #27

 # 31 Bus voltages (read)
same as MEGALINE specific command #31

 # 32 Battery thresholds (set)
same as MEGALINE specific command #32

 # 33 Battery thresholds mode (read)
same as MEGALINE specific command #33

 # 36 Line frequency autoselect (set)
same as ally MEGALINE specific command #36

 # 37 Battery state of charge (read)
same as ally MEGALINE specific command #37

 # 38 Battery discharge learning (set)
same as ally MEGALINE specific command #38

 # 39 Battery autonomy management
same as ally MEGALINE specific command #39

 # 40 Battery reserve time (set)
same as ally MEGALINE specific command #40

 # 41 Battery reserve time (read)
same as ally MEGALINE specific command #41

 # 44 Output voltage control (set)
same as MEGALINE specific command #44

 # 45 Output voltage control (read)
same as MEGALINE specific command #45

 # 59 External KB (set)

Request command:

int8u	= 59
int8u	External KB

Answer:

int8u	Command (replica of the request command)
int8u	External KB

 # 60 External KB (read)

Request command:

int8u	= 60

Answer:

int8u	Command (replica of the request command)
int8u	External KB

5. DHEA specific commands

 # 21 No load threshold (set):
same as MEGALINE specific command #21

 # 22 No load threshold (read):
same as MEGALINE specific command #22

 # 23 Output voltage control (set):
same as MEGALINE specific command #23

 # 24 Output voltage control (read):
same as MEGALINE specific command #24

 # 25 Bypass (set):
same as MEGALINE specific command #25

 # 26 Bypass (read):
same as MEGALINE specific command #26

 # 27 Hardware status report (read):
same as MEGALINE specific command #27

 # 31 Bus voltages (read):
same as MEGALINE specific command #31

 # 32 Battery thresholds (set):
same as MEGALINE specific command #32

 # 33 Battery thresholds mode (read):
same as MEGALINE specific command #33

 # 36 Line frequency autoselect (set):
same as MEGALINE specific command #36

 # 37 Battery state of charge (read):
same as MEGALINE specific command #37

 # 38 Battery discharge learning (set):
same as MEGALINE specific command #38

 # 39 Battery autonomy management:
same as MEGALINE specific command #39

 # 40 Battery reserve time (set):
same as MEGALINE specific command #40

 # 41 Battery reserve time (read):
same as MEGALINE specific command #41

 # 44 Output voltage control (set):
same as MEGALINE specific command #44

 # 45 Output voltage control (read):
same as MEGALINE specific command #45

 # 46 Single event read:

same as MEGALINE specific command #46

 # 48 Date/Time (set):

same as MEGALINE specific command #48

 # 49 Date/Time (read):

same as MEGALINE specific command #49

 # 52 Calendar scheduling (set):

same as MEGALINE specific command #52

 # 53 Calendar scheduling (read):

same as MEGALINE specific command #53

 # 54 Calendar scheduling enable:

same as MEGALINE specific command #54

 # 55 Auxiliary output (set):

Request command:

int8u	= 55
int8u	AUX OUT 1 max time on battery (m)
int8u	AUX OUT 2 max time on battery (m)
int8u	AUX OUT 1 OFF on battery reserve {1 => OFF on battery reserve}
int8u	AUX OUT 2 OFF on battery reserve {1 => OFF on battery reserve}

Answer:

int8u	Command (replica of the request command)
int8u	AUX OUT 1 max time on battery (m)
int8u	AUX OUT 2 max time on battery (m)
int8u	AUX OUT 1 OFF on battery reserve
int8u	AUX OUT 2 OFF on battery reserve

 # 56 Auxiliary output (read):

Request command:

int8u	= 56

Answer:

int8u	Command (replica of the request command)
int8u	AUX OUT 1 max time on battery (m)
int8u	AUX OUT 2 max time on battery (m)
int8u	AUX OUT 1 OFF on battery reserve
int8u	AUX OUT 2 OFF on battery reserve

6. ALLY HF specific commands

 # 21 No load threshold (set)
same as MEGALINE specific command #21

 # 22 No load threshold (read)
same as MEGALINE specific command #22

 # 23 Output voltage control (set)
same as MEGALINE specific command #23

 # 24 Output voltage control (read)
same as MEGALINE specific command #24

 # 25 Bypass (set)
same as MEGALINE specific command #25

 # 26 Bypass (read)
same as MEGALINE specific command #26

 # 27 Hardware status report (read)
same as MEGALINE specific command #27

 # 30 A/D average values (read)

Request command:

int8u	= 30

Answer:

int8u	Command (replica of the request command)
int8u	Vin A/D
int8u	Iin A/D
int8u	Vout A/D
int8u	Iout A/D

 # 31 Bus voltages (read)
same as MEGALINE specific command #31

 # 32 Battery thresholds (set)
same as MEGALINE specific command #32

 # 33 Battery thresholds mode (read)
same as MEGALINE specific command #33

 # 36 Line frequency autoselect (set)
same as MEGALINE specific command #36

 # 37 Battery state of charge (read)
same as MEGALINE specific command #37

 # 38 Battery discharge learning (set)
same as MEGALINE specific command #38

 # 39 Battery autonomy management
same as MEGALINE specific command #39

 # 40 Battery reserve time (set)
same as MEGALINE specific command #40

 # 41 Battery reserve time (read)

same as MEGALINE specific command #41