



# 科士达科技发展有限公司

文件名称：SNMP 卡协议扩展

文件编号：

版本号：**ver 0.1**



### COMMAND SUMMARY

ITEM	COMMAND	DESCRIPTION
1	ADJ	adjust ups parameter
2	SAV	Change ups settings
3	<b>SET</b>	Write ups CPU register
4	GET	Read ups CPU register
5	INF	UPS real time data
6	ICP	Update ups firmware

## A. General:

This document specifies the RS232C communication protocol of Advanced-Intelligent UPS. This protocol provides the following features :

1. Monitor charge status.
2. Monitor battery status and conditions.
3. Monitor main power status.

**Computer gives command to UPS. All commands have to end with a < cr >.**

**UPS responds to computer. All responses have to end with a < cr> .**

**\*\*\* UPS must respond to every command within 500ms \*\*\***

## B. Hardware:

BAUD RATE..... : 2400 bps

DATA LENGTH..... : 8 bits

STOP BIT..... : 1 bit

PARITY..... : NONE

CABLING :

COMPUTER UPS

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RX <----- TX (pin 9)

TX -----> RX (pin 6)

GND <-----> GND (pin 7)

(9 pins female D-type connector)

## C. COMMUNICATION PROTOCOL:

**1.ADJ command** : adjust ups parameter

Computer : ADJXXNNNN<cr>

XX: address (x is form 0 to F)

NNNN: value(N is form 0 to F)

Write adjust value		
XX	NNNN	Range
00	Input volt	3891~4301
01	Inverter volt	3891~4301
02	Output volt	3891~4301
03	+Bus volt	3891~4301
04	-Bus volt	3891~4301
05	+battery volt	3891~4301
06	-Battery volt	3891~4301
07	+charger volt	3891~4301
08	-Charger volt	3891~4301
09	DC volt	3891~4301
40	Save	3891~4096
Read adjust value		

20	Input volt	3891~4301
21	Inverter volt	3891~4301
22	Output volt	3891~4301
23	+Bus volt	3891~4301
24	-Bus volt	3891~4301
25	+battery volt	3891~4301
26	-Battery volt	3891~4301
27	+charger volt	3891~4301
28	-Charger volt	3891~4301
29	DC volt	3891~4301

**NOTE:**

**When ups receive 40 command, ups will save this parameter to eeprom**

Case1: Write adjust value

UPS response:

if command is valid ups will response NNNN<cr>.

if command is invalid ups will response “NAK”<cr>

Case2: Read adjust value

UPS response:

if command is valid ups will response the current value ,the format is NNNN<cr>.

if command is invalid ups will response “NAK”<cr>

**2.SAV command** : change ups parameter

Computer : SAVXXNNN<cr>

XX: address (x is form 0 to F)

NNN: value(N is form 0 to F)

Write settings		
address	value	function
00	0,1,2	Work mode : 0:normal 1:ECO 2: parallel
01	0~99	Parallel ID
02	220,230,240	Output volt
03	50,60	Output frequency
04	175,180	Battery eod voltage/cell: unit:0.01V
05	0~20	UPS parallel number
06	0~20	UPS redundance number
07	1,2,4,5,10	Bypass frequency trace point
08	5,10,15,20,25	Bypass voltage high protection point
09	20,30,45	Bypass voltage low protection point
0A	16,18,20	Battery number
0B	0~99	Battery parallel number
0C	0~200	Battery Capacity
0D	190~230	Float charge volt/cell ,unit: 0.01V
0E	230~235	const charge volt/cell,unit: 0.01V
0F	1~5	Inverter voltage level

30	0~255	Save settings to eeprom
Read settings		
address	value	function
40	0~255	Work mode : 0:normal 1:ECO 2: parallel
41	0~255	Parallel ID
42	0~255	Output volt
43	0~255	Output frequency
44	0~255	Battery eod voltage/cell: unit:0.01V
45	0~255	UPS parallel number
46	0~255	UPS redundance number
47	0~255	Bypass frequency trace point
48	0~255	Bypass voltage high protection point
49	0~255	Bypass voltage low protection point
4A	0~255	Battery number
4B	0~255	Battery parallel number
4C	0~255	Battery Capacity
4D	0~255	Float charge volt/cell ,unit: 0.01V
4E	0~255	const charge volt/cell ,unit: 0.01V
4F	0~255	Inverter voltage level

**NOTE:**

**When ups receive 30 command, ups will save this settings to eeprom**

Case1: Write value

UPS response:

if command is valid ups will response NNN<cr>.

if command is invalid ups will response “NAK”<cr>

Case2: Read adjust value

UPS response:

if command is valid ups will response the current value ,the format is NNN<cr>.

if command is invalid ups will response “NAK”<cr>

**3.SET command:** write ram value

Computer : SETXXXXNNNN<cr>

XXXX: address (x is form 0 to F)

NNNN: value(N is form 0 to F)

Ups : OK<cr>. NAK<cr>

**4.GET command:** read ram value

Computer : GETXXXX<cr>

XXXX: address (x is form 0 to F)

Ups : NNNN(N is form 0 to F)<cr> or NAK<cr>

**5.INF command:** UPS real time data

Computer : INF <cr>

UPS : UPS status data stream, such as

(AAA.A BBB.B CCC.C PPP.P MMM.M NNN.N RRR.R SS.S TTT QQ.Q XXX.X ZZZ.Z<cr>

UPS status data stream :

There should be a space character between every field for data separation. The meaning of each field is list as follows:

a. Start byte : (

b.I/P R voltage : AAA.A

M is an integer number ranging from 0 to 9.

The unit is “ Volt” .

b.I/P S voltage : BBB.B

M is an integer number ranging from 0 to 9.

The unit is “ Volt” .

c.I/P T voltage : CCC.C

M is an integer number ranging from 0 to 9.

The unit is “ Volt” .

d.O/P voltage : PPP.P

P is an integer number ranging from 0 to 9.

The unit is “ Volt” .

e.inv voltage : MMM.M

P is an integer number ranging from 0 to 9.

The unit is “ Volt” .

e. P battery voltage : NNN.N

P is an integer number ranging from 0 to 9.

The unit is “ Volt”

f. N battery voltage : RRR.R

P is an integer number ranging from 0 to 9.

The unit is “ Volt”

g. input frequency: SS.S

P is an integer number ranging from 0 to 9.

The unit is “ Hz”

h. loader percent: TTT

P is an integer number ranging from 0 to 9.

i. UPS internal Temp: QQ.Q

P is an integer number ranging from 0 to 9.

The unit is “ C”

j. P BUS voltage : XXX.X

P is an integer number ranging from 0 to 9.

The unit is “ Volt”

k. N BUS voltage : ZZZ.Z

P is an integer number ranging from 0 to 9.

The unit is “ Volt”

**6.ICP command:** UPS firmware update

Computer : ICP<cr>

Ups : OK<cr> or NAK<cr>

7. FCT **command:** Factory settings

Computer : FCTXSSSSS<cr>

