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COMMUNICATION PROTOCOL WIALON IPS v.1.1

Incoming TCP data protocol

All the data comes in text format and represent the following type packet:

#TP#msg\r\n

#	start byte
TP	the type of packet, description of all possible types is shown in Table. 1
#	separator
msg	Message
\r\n	end of packet

The types of packet

(table 1)

Type	Description	Sender
L	packet login	equipment
AL	response to the packet login	server
D	data packet	equipment
AD	response to the data packet	server
P	ping packet	equipment
AP	response to the ping packet	server
SD	short data packet	equipment
ASD	response to the short data packet	server
B	packet with black box	equipment
AB	response to the packet with black box	server
M	message to the driver	equipment / server
AM	response to the message from the driver	server

Login packet

#L#imei;password\r\n

imei	unique tracker ID, IMEI or serial number
;	separator
password	password to device access (it should not be emty)

In response to login packet server sends a command to AL:
"1" – if successful authorization to the server;
"0" – if no connection with server;
"01" – error checking password.

Examples:
#AL#1\r\n #AL#0\r\n

Short data packet

#SD#date;time;lat1;lat2;lon1;lon2;speed;course;height;sats\r\n

date	date in format DDMMYY, in UTC, if empty - NA
time	time in format HHMMSS, in UTC, if empty - NA
lat1;lat2	latitude (5544.6025;N), if empty - NA;NA
lon1;lon2	longitude (03739.6834;E), if empty - NA;NA
speed	speed, integer, km/h, if empty - NA
course	course, integer, degrees, if empty - NA
height	height, integer, in meters, if empty - NA
sats	number of satellites, integer, if empty - NA

If the date and time contain NA, the current server time used.

In response to the short data packet server sends ASD:
"-1" – error package structure
"0" – incorrect time
"1" – packet successfully fixed
"10" – error to get coordinates
"11" – error to get the speed, course or altitude
"12" – error to get the number of satellites
Examples:
#ASD#1\r\n #ASD#0\r\n #ASD#10\r\n #ASD#11\r\n #ASD#12\r\n

Data packet

#D#date;time;lat1;lat2;lon1;lon2;speed;course;height;sats;hdop;inputs;outputs;adc;ibutton;params\r\n

date	date in format DDMMYY, in UTC, if empty – NA
time	time in format HHMMSS, in UTC, if empty – NA
lat1;lat2	latitude (5544.6025;N), if empty – NA
lon1;lon2	longitude (03739.6834;E), if empty - NA;NA
speed	speed, integer, km/h, if empty – NA
course	course, integer, degrees, if empty – NA
height	height, integer, in meters, if empty – NA
sats	number of satellites, integer, if empty – NA
hdop	decline of precision, fractional number, if empty - NA
inputs	digital inputs, each bit number corresponds to one input, starting with the youngest, integer, if empty – NA
outputs	digital outputs, each bit number corresponds to one outputs, starting with the youngest, integer, if empty – NA

adc	analog inputs, fractional numbers, separated by a comma. The numbering starts with the output unit; If no analog inputs - is transferred to an empty string. Exampl: 14.77,0.02,3.6
ibutton	code key driver string of arbitrary length. If no key is passed NA
params	set of additional parameters separated by a comma. Each parameter represents a construction NAME:TYPE:VALUE NAME – arbitrary string of length at most 15 bytes; TYPE – parameter type, 1 –int/long long, 2 –double, 3 –string VALUE – value depending on the type The first type parameter with name "SOS" is used to send alarm button, value 1 means the button is pushed. The third parameter type (string) with name "text" is used to send a text message. This parameter can be used to send a text message from driver, which may contain the coordinates and other parameters. Examples: count1:1:564,fuel:2:45.8,hw:3:V4.5 SOS:1:1

If the date and time contain NA, the current server time used.

In response to the packet data server sends AD:
"-1" – error package structure
"0" – incorrect time
"1" – packet successfully fixed
"10" – error to get coordinates
"11" – error to get the speed, course or altitude
"12" – error to get the number of satellites or hdop
"13" – error to get inputs or outputs
"14" – error to get adc
"15" – error to get additional parameters
Examples: #AD#1\r\n #AD#0\r\n #AD#10\r\n #AD#11\r\n #AD#16\r\n

Ping packet

#P#\r\n

Serves to maintain the active TCP-connection to the server, as well as to verify that channel.

In response to the ping packet server sends AP.

Exampl: #AP#\r\n

Packet with black box

#B#msg\r\n

Packet with black box designed to transmit multiple messages simultaneously.

“msg” represents multiple bodies of short or full packets (with no type), separated by a symbol ‘|’.

Example:

#B#date;time;lat1;lat2;lon1;lon2;speed;course;height;sats|date;time;lat1;lat2;lon1;lon2;speed;course;height;sats|date;time;lat1;lat2;lon1;lon2;speed;course;height;sats\r\n

In response to the package of the black box, the server sends a command AB, which indicates the number of recorded messages:

Examples: #AB#3\r\n #AB#0\r\n

Message to the driver

#M#msg\r\n

Used to send a text message to the driver.

“msg” - directly to message. Message can be sent as a server and equipment.

As a response for driver's message server sends command AM:

“1” – message is received

“0” – error message reception

Examples: #AM#1\r\n #AM#0\r\n

Packet with new firmware

Used to send new firmware to the tracker.

#US#sz\r\nBIN

sz	size of binary data packet (for example, 51200 bytes)
BIN	firmware in binary form

Packet with configuration file

Used to send configuration file to the tracker

#US#sz\r\nBIN

sz	size of the configuration file, byte
BIN	contents of the configuration file