Packet protocol tags

№	Tag		Description	Length, byte	Format
1	0x01	01	Hardware version	1	Unsigned integer
2	0x02	02	Firmware version	1	Unsigned integer
3	0x03	03	IMEI	15	ASCII string
4	0x04	04	Identifier of a device	2	Unsigned integer
5	0x10	10	Number of an archive record	2	Unsigned integer
6	0x20	20	Date and time	4	Unsigned integer, seconds since 1970-01-01 00:00:00 GMT
7	0x30	30	Coordinates in degrees, number of satellites, indication of coordinates determination correctness and source of coordinates	9	4 lower bits: number of satellites. The next 4 bits: coordinates correctness, 0 – coordinates are correct, GLONASS/GPS module is a source, 2 - coordinates are correct, cellular base stations are a source, other values – coordinates are incorrect. The next 4 bytes: signed integer, latitude, the value should be divided by 1000000, negative values correspond to southern latitude. Last 4 bytes: signed integer, longitude, the value should be divided by 1000000, negative values correspond to western longitude. For example, received: 07 C0 0E 32 03 B8 D7 2D 05. Coordinates correctness: 0 (coordinates are correct). Satellites number: 7 Latitude: 53.612224 Longitude: 86.890424
8	0x33	33	Speed in km/h and direction in degrees	4	2 lower bytes: unsigned integer, speed, the value should be divided by 10. 2 higher bytes: unsigned integer, direction, the value should be divided by 10. For example, received: 5C 00 48 08. Speed: 9.2 km/h. Direction: 212 degrees.
9	0x34	34	Height, m	2	Signed integer
10	0x35	35	One of the values: HDOP, if GLONASS/GPS module is coordinates source Error in meters, if cellular base stations are a source.	1	Unsigned integrer. In case of HDOP, the value should be divided by 10. In case of error, the value should be multiplied by 10.
11	0x40	40	Status of device	2	Unsigned integer, each bit corresponds to a separate unit state, see explanations below
12	0x41	41	Supply voltage, mV	2	Unsigned integer
13	0x42	42	Battery voltage, mV	2	Unsigned integer
14	0x43	43	Inside temperature, °C	1	Signed integer
15	0x44	44	Acceleration (this tag can only be used on tracking devices up to and including the 5.1 version)	4	10 lower bits: acceleration by X axis. Next 10 bits: acceleration by Y axis. Next 10 bits: acceleration by Z axis. 0g = 512, values less than 512 – acceleration, directed against the axis. Scale 1g=186. For example, 326 = -1g, 605 = 0,5g. Example, received: AF 21 98 15. Acceleration X: 431, Y: 520, Z: 345.
16	0x45	45	Status of outputs	2	Each bit, beginning with the lower one, indicates the state of a correspondent output
					Each bit, beginning with the lower one,

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17	0x46	46	Status of inputs	2	indicates triggering on a correspondent input
18	0x50	50	Input voltage 0 Depending on settings: 1. voltage, mV, 2. number of pulses; 3. frequency,Hz.	2	Unsigned integer
19	0x51	51	Input voltage 1 Depending on settings: 1. voltage, mV, 2. number of pulses; 3. frequency,Hz.	2	Unsigned integer
20	0x52	52	Input voltage 2 Depending on settings: 1. voltage, mV, 2. number of pulses; 3. frequency,Hz.	2	Unsigned integer
21	0x53	53	Input voltage 3 Depending on settings: 1. voltage, mV, 2. number of pulses; 3. frequency,Hz.	2	Unsigned integer
22	0x58	58	RS232 0	2	The format depends on the port settings
23	0x59	59	RS232 1	2	The format depends on the port settings
24	0x70	70	Thermometer 0 identifier and measured temperature, °C	2	Lower byte: unsigned integer, identifier. Higher byte: signed integer, temperature. Identifier 127 with temperature -128 ºC mean a disconnection. Example, received: 01 10 Identifier: 01 Temperature: 16ºC
25	0x71	71	Thermometer 1 identifier and measured temperature, °C	2	Analogous to temperature sensor 1
26	0x72	72	Thermometer 2 identifier and measured temperature, °C	2	Analogous to temperature sensor 2
27	0x73	73	Thermometer 3 identifier and measured temperature, °C	2	Analogous to temperature sensor 3
28	0x74	74	Thermometer 4 identifier and measured temperature, °C	2	Analogous to temperature sensor 4
29	0x75	75	Thermometer 5 identifier and measured temperature, °C	2	Analogous to temperature sensor 5
30	0x76	76	Thermometer 6 identifier and measured temperature, °C	2	Analogous to temperature sensor 6
31	0x77	77	Thermometer 7 identifier and measured temperature, °C	2	Analogous to temperature sensor 7
32	0x90	90	First iButton key identification number	4	
33	0xc0	c0	CAN-bus and CAN-LOG data (CAN_A0). Fuel used by a vehicle from the date of manufacturing, l	4	Unsigned integer, the value should be divided by 2
34	0xc1	c1	CAN-bus and CAN-LOG data (CAN_A1). Fuel level, %; coolant temperature, ºC; Enginespeed, rpm.	4	Lower byte: fuel level, the value should be multiplied by 0.4 The second byte: coolant temperature, the value should be deducted 40. The third and fourth bytes: engine speed, values should be multiplied by 0.125. Example of data from bus in order of receiving: FA 72 50 25. Fuel level: 100%.

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№	Tag		Description	Length, byte	Format
					Temperature 74ºC. Engine speed: 1194 rmp
35	0xC2	C2	CAN-bus and CAN-LOG data (CAN_B0). Vehicle`s mileage, m.	4	Unsigned integer, the value should be multiplied by 5
36	0xC3	C3	CAN_B1	4	
37	0xC4	C4	CAN8BITR0 or vehicle speed from CAN-LOG, km/h	1	If speed is transmitted from CAN-LOG, the value is an unsigned integer
38	0xC5	C5	CAN8BITR1 or the 2rd byte of prefix S CAN-LOG	1	
39	0xC6	C6	CAN8BITR2 or the 1st byte of prefix S CAN-LOG	1	
40	0xC7	C7	CAN8BITR3 or lower byte of prefix S CAN-LOG	1	
41	0xC8	C8	CAN8BITR4 or the 3rd byte of prefix P CAN-LOG	1	
42	0xC9	C9	CAN8BITR5 or the 2rd byte of prefix P CAN-LOG	1	
43	0xCA	CA	CAN8BITR6 or the 1st byte of prefix P CAN-LOG	1	
44	0xCB	CB	CAN8BITR7 or lower byte of prefix P CAN-LOG	1	
45	0xCC	CC	CAN8BITR8 or the first byte in the procedure for receiving of prefix WA CAN-LOG	1	
46	0xCD	CD	CAN8BITR9 or the second byte in the procedure for receiving of prefix WA CAN-LOG	1	
47	0xCE	CE	CAN8BITR10 or the third byte in the procedure for receiving of prefix WA CAN-LOG	1	
48	0xCF	CF	CAN8BITR11 or the fourth byte in the procedure for receiving of prefix WA CAN-LOG	1	
49	0xD0	D0	CAN8BITR12 or the fifth byte in the procedure for receiving of prefix WA CAN-LOG	1	
50	0xD1	D1	CAN8BITR13 or the sixth byte in the procedure for receiving of prefix WA CAN-LOG	1	
51	0xD2	D2	CAN8BITR14 or the seventh byte in the procedure for receiving of prefix WA CAN-LOG	1	
52	0xD3	D3	The second iButton key identification number	4	
53	0xD4	D4	Total mileage according to GPS/GLONASS units data, m.	4	Unsigned integer
54	0xD5	D5	State of iButton keys, identifiers of which are set by iButton command.	1	Each bit corresponds to one key. Example, received: 05 or 00000101 in binary system. It means that the first and the third keys are connected
55	0xD6	D6	Depending on settings: 1. CAN16BITR0 2. the 1st vehicle's axle load, kg 3. failure code OBD II	2	In case the load is on axle, the value is an unsigned integer; values should be divided by 2
56	0xD7	D7	Depending on settings: 1. CAN16BITR1 2. the 2nd vehicle's axle	2	In case the load is on axle, the value is an unsigned integer; values should be divided by 2

Packet protocol tags

№	Tag		Description	Length, byte	Format
			load, kg 3. failure code OBD II		
57	0xD8	D8	Depending on settings: 1. CAN16BITR2 2. the 3rd vehicle's axle load, kg 3. failure code OBD II	2	In case the load is on axle, the value is an unsigned integer; values should be divided by 2
58	0xD9	D9	Depending on settings: 1. CAN16BITR3 2. the 4th vehicle's axle load, kg 3. failure code OBD II	2	In case the load is on axle, the value is an unsigned integer; values should be divided by 2
59	0xDA	DA	Depending on settings: 1. CAN16BITR4 2. the 5th vehicle's axle load, kg 3. failure code OBD II	2	In case the load is on axle, the value is an unsigned integer; values should be divided by 2
60	0xDB	DB	Depending on settings: 1. CAN32BITR0 2. total time of engine operation, h	4	In case the time of engine operation is transmitted, the value is an unsigned integer; values should be divided by 100
61	0xDC	DC	Depending on settings: 1. CAN32BITR1 2. CAN-LOG, R prefix, fuel level, l	4	In case the fuel level is on CAN-LOG, the value is an unsigned integer; values should be divided by 10
62	0xDD	DD	Depending on settings: 1.CAN32BITR2 2. CAN-LOG, user prefix	4	
63	0xDE	DE	Depending on settings: 1. CAN32BITR3 2. CAN-LOG, user prefix	4	
64	0xDF	DF	Depending on settings: 1.CAN32BITR4 2. CAN-LOG, user prefix	4	
65	0x54	54	Input 4 values. Depending on settings: 1. voltage, mV 2. number of pulses 3. frequency, Hz	2	Unsigned integer
66	0x55	55	Input 5 values. Depending on settings: 1. voltage, mV 2. number of pulses 3. frequency, Hz	2	Unsigned integer
67	0x56	56	Input 6 values. Depending on settings: 1. voltage, mV 2. number of pulses 3. frequency, Hz	2	Unsigned integer
68	0x57	57	Input 7 values. Depending on settings: 1. voltage, mV 2. number of pulses 3. frequency, H	2	Unsigned integer
69	0x80	80	Zero DS1923 sensor Identifier, measured temperature ºC and humidity %	3	Lower byte: unsigned integer, identifier. The second byte: signed integer, temperature. Higher byte: humidity, values should be multiplied by 100 and divided by 255. Example, received: 01 10 20. Identifier: 01

Packet protocol tags

№	Tag		Description	Length, byte	Format
					Temperature: 16ºC. Humidity: 12.54%
70	0x81	81	The 1st DS1923 sensor Identifier, measured temperature °C and humidity %.	3	Analogous to DS1923 zero sensor
71	0x82	82	The 2nd DS232sensor Identifier, measured temperature °C and humidity %	3	Analogous to DS1923 zero sensor
72	0x83	83	The 3rd DS232 sensor Identifier, measured temperature °C and humidity %	3	Analogous to DS1923 zero sensor
73	0x84	84	The 4th DS232 sensor Identifier, measured temperature °C and humidity %	3	Analogous to DS1923 zero sensor
74	0x85	85	The 5th DS232 sensor Identifier, measured temperature °C and humidity %	3	Analogous to DS1923 zero sensor
75	0x86	86	The 6th DS232 sensor Identifier, measured temperature °C and humidity %	3	Analogous to DS1923 zero sensor
76	0x87	87	The 7th DS232 sensor Identifier, measured temperature °C and humidity %	3	Analogous to DS1923 zero sensor
77	0x60	60	RS485 [0]. Fuel level sensor with address 0	2	Unsigned integer
78	0x61	61	RS485 [1]. Fuel level sensor with address 1	2	Unsigned integer
79	0x62	62	RS485 [2]. Fuel level sensor with address 2	2	Unsigned integer
80	0x63	63	RS485 [3]. Fuel level sensor with address 3. Relative fuel level and temperature	3	2 lower bytes: unsigned integer, relative fuel level. Higher byte: signed integer, temperature, °C
81	0x64	64	RS485 [4]. Fuel level sensor with address 4. Relative fuel level and temperature	3	2 lower bytes: unsigned integer, relative fuel level. Higher byte: signed integer, temperature, °C
Tags RS485[5] - RS485[14] (0x65-0x6E) are similar to RS485[4] with numbers 82-91					
92	0x6F	6F	RS485 [15]. Fuel level sensor with address 15. Relative fuel level and temperature.	3	2 lower bytes: unsigned integer, relative fuel level. Higher byte: signed integer, temperature, °C
93	0x88	88	Extended data RS232[0]. Depending on settings: 1. Temperature from fuel level sensors connected to RS232 0, °C 2. Weight, received from weight identifier.	1	Signed integer
94	0x89	89	Expanded data RS232[1]. Depending on the settings: 1. Temperature from fuel level sensors connected	1	Signed integer

Packet protocol tags

№	Tag		Description	Length, byte	Format
			to Rs232[1], °C 2. Weight received from weight identifier		
95	0x8A	8A	Temperature from fuel level sensors connected to RS485 port with address 0, °C	1	Signed integer
96	0x8B	8B	Temperature from fuel level sensors connected to RS485 port with address 1, °C	1	Signed integer
97	0x8C	8C	Temperature from fuel level sensors connected to RS485 port with address 2, °C	1	Signed integer
98	0x78	78	Input 8 value. Depending on the settings, one of the options is the following: 1. voltage, mV; 2. number of pulses; frequency, Hz.	2	Unsigned integer
99	0x79	79	Input 9 value. Depending on the settings, one of the options is the following: 1. voltage, mV; 2. number of pulses; frequency, Hz.	2	Unsigned integer
100	0x7A	7A	Input 10 value. Depending on the settings, one of the options is the following: 1. voltage, mV; 2. number of pulses; frequency, Hz.	2	Unsigned integer
101	0x7B	7B	Input 11 value. Depending on the settings, one of the options is the following: 1. voltage, mV; 2. number of pulses; frequency, Hz.	2	Unsigned integer
102	0x7C	7C	Input 12 value. Depending on the settings, one of the options is the following: 1. voltage, mV; 2. number of pulses; frequency, Hz.	2	Unsigned integer
103	0x7D	7D	Input 13 value. Depending on the settings, one of the options is the following: 1. voltage, mV; 2. number of pulses; frequency, Hz.	2	Unsigned integer
104	0x21	21	Milliseconds	2	Unsigned integer, the number of milliseconds (0 to 999) completes the date and time value
129	0xA0	A0	CAN8BITR15 or the eighth byte in the procedure for receiving of prefix WA CAN-LOG	1	Accessible only by a dynamic archive structure
Tags CAN8BITR16 - CAN8BITR29 (0xA1-0xAE) similar to CAN8BITR16 with numbers 130-143					
144	0xAF	AF	CAN8BITR30	1	Accessible only by the dynamic archive structure
145	0xB0	B0	CAN16BITR5	2	Accessible only by the dynamic archive structure
Tags CAN16BITR6 – CAN16BITR13 (0xB1-0xB8) similar to CAN16BITR5 with numbers 146-153					

Packet protocol tags

№	Tag		Description	Length, byte	Format
154	0xB9	B9	CAN16BITR14	2	Accessible only by the dynamic archive structure
161	0xF0	F0	CAN32BITR5	4	Accessible only by the dynamic archive structure
Tags CAN32BITR6 – CAN32BITR13 (0xF1-0xF8) similar to CAN32BITR5 with numbers 162-169					
170	0xF9	F9	CAN32BITR14	4	Accessible only by the dynamic archive structure
171	0x5A	5A	REP-500 electricity meter readings	4	Unsigned integer
173	0x5B	5B	Refrigeration unit data		See the format below
174	0x47	47	EcoDrive and driving style determination	4	Accessible only by the dynamic archive structure. Unsigned integer. Lower byte: acceleration. The second byte: braking. The third byte: cornering acceleration. The fourth byte: strike on bumps. All accelerations are expressed in standard units, 100 = 1g = 9,8 m/s2
175	0x5C	5C	PressurePro tires pressure monitoring system, 34 sensors	68	Array from 34 structures per 2 bytes. Index in array corresponds to the sensor number. Data structure from sensor: Lower byte: unsigned integer, tire pressure, psi. Higher byte: Bit 0-2: temperature, from -40°C up to 100°C with the 20°C interval. Bit 3:1 – no connection with the sensor, 0 –sensor is connected. Bit 4: identifier of sensor battery low charge. Bit 5-7: the reason of data sending from the sensor. 000 – occassional sending. 001 – pressure decrease by 10% for PressurePro or by 12,5% for TPMS. 010 – pressure decrease by 20% for PressurePro or by 25% for TPMS. 100 – high temperature for TPMS. 101 – rapid pressure decrease for TPMS. 011 – pressure decrease by 50% for TPMS. 110 – the tire is inflated for PressurePro or high pressure for TPMS. 111 - New Magnet for PressurePro
176	0x5D	5D	DBG-S11Ddosimeter data	3	2 lower bytes: ADER, 3V/h, unsigned integer, (xxxxxxyy yyyyyyyy – x-order, y – floating-point coefficient). Higher byte: dosimeter state. Bit 0-2: dose power and its indeterminacy value: 000 –weighted average value is typed out via 2 channels 001 –channel 1 value is typed out 010 – channel 2 value is typed out 101 – false value is typed out (device in testing mode) Bit 3 – channel 1 state: 0 – is off, 1 – is on. Bit 4: channel 1 state: 0 – OK, 1 – failure. Bit 5: channel 2 state: 0 – is off, 1 – is on. Bit 6: channel 2 state: 0 - OK, 1 - failure. Bit 7: economy mode: 0 –is off, 1 – is on.
177	0xE2	E2	User data 0	4	
177	0xE3	E3	User data 1	4	

Packet protocol tags

№	Tag		Description	Length, byte	Format
177	0xE4	E4	User data 2	4	
177	0xE5	E5	User data 3	4	
177	0xE6	E6	User data 4	4	
177	0xE7	E7	User data 5	4	
177	0xE8	E8	User data 6	4	
184	0xE9	E9	User data 7	4	
185	0xEA	EA	UserArray		Lower byte is array length
186			Minimum data set		
188	0x48	48	Expanded status of the device	2	Bit 0 is the connection state to the primary server. 1 is “connected”, 0 is “not connected”. Bit 1 is GPRS session status. 1 is “on”, 0 is “off”. Bit 2 is the sign of GSM jamming. 1 is “GSM jamming detected”, 0 is “no jamming detected”. Bit 3 is the connection state to the additional server. 1 is “connected”, 0 is “not connected”. Bit 4 is the sign of GPS/GLONASS jamming. 1 is “jamming detected”, 0 is “no jamming detected” Bit 5 is sign of connection to cable USB of device USB. 1 is “connected”, 0 is “not connected. Bit 6 – sign of SD car presence in device. 1 – present, 0 – absent.
191	0x49	49	Transmission channel	1	Bits 0 to 3 - transmission channel 0001 GSM 0010 WiFi 0011 BLE Bits 4 to 7 - transmission path 0001 Server 0010 Hub
192	0x11	11	Number of the current record in the archive	4	Unsigned integer
193	0x36	36	PDOP (Position Dilution of Precision). GNSS Positioning Accuracy Metric	1	Unsigned integer, the value should be divided by 10.
	0xFE	FE	Extended tags		Length is determined by the content of the tag