

Telemetry Balkan doo

Open Serial Peripheral

Communication Protocol

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v 0.1.0

Beograd, Serbia
2022-12-20

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Overview

<TBD>

Revision History

<TBD>

Media

RS-232

USB Serial

BLE Serial

Frame Format

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte	0x55	0x77

Messages

Generic

DEV = 0x00

Can be handled by any devices supporting this protocol.

CMD_REQ_DEV_TYPE

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x00	0x01	Reserved	Reserved	Reserved	Reserved	0x55	0x77

No additional parameters. This invokes the response INFO_DEV_TYPE

INFO_DEV_TYPE

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x00	0x11	DEV_TYPE	Reserved	Reserved	Reserved	0x55	0x77

Params

Param name	Type	Description
DEV_TYPE	Unsigned Int 8	ID of the device type. ENUM: 0x00 - INVALID VALUE 0x01 - ARM-1 0x02 - OPB-1 0x03 - 02D-1

ARM-1

Open Arm
DEV = 0x01

ARM1_CMD_SET_ANGLE

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x01	0x02	JOINT	A_LSB	A_MSB	Reserved	0x55	0x77

Set the desired angle for the actuator. Parameters:

Name	Date Type	Description
Joint	Unsigned Int 8	Index of the joint to apply the angle for
Angle	Unsigned Int16	

OBP-1

Open Battery Pack

DEV = 0x02

OBP_CMD_REQ_SOC

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x01	Reserved	Reserved	Reserved	Reserved	0x55	0x77

OBP_CMD_REQ_VOLTAGE

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x02	Reserved	Reserved	Reserved	Reserved	0x55	0x77

OBP_CMD_REQ_CURRENT

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x03	Reserved	Reserved	Reserved	Reserved	0x55	0x77

OBP_CMD_REQ_STATUS

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x04	Reserved	Reserved	Reserved	Reserved	0x55	0x77

OBP_INFO_SOC

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x11	SOC_LSB	SOC_MSB	Reserved	Reserved	0x55	0x77

Params

Name	Data Type	Description
SOC	Unsigned Int 16	State of charge. 0 corresponds to 0% 65535 corresponds to 100%

OBP_INFO_VOLTAGE

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x12	V_LSB	V_MSB	Reserved	Reserved	0x55	0x77

Params:

Name	Data Type	Description
V (V_MSB, V_LSB)	Signed Int 16	Voltage in volts * 100 -32768 corresponds to -327.28 volts 32767 corresponds to 327.67 volts

OBP_INFO_CURRENT

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x13	A_LSB	A_MSB	Reserved	Reserved	0x55	0x77

Params:

Name	Data Type	Description
A (A_MSB, A_LSB)	Signed Int 16	Current in mA -32768 corresponds to -32.728 A

		32767 corresponds to 32.767 A
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OBP_INFO_STATUS

ST1	ST2	DEV	CMD	P1	P2	P3	P4	EN1	EN2
0xFF	0xAA	0x02	0x13	STATUS	FLAGS	Reserved	Reserved	0x55	0x77

Params:

Name	Type	Description
STATUS	Unsigned int 8	0x00 - UNKNOWN 0x01 - IDLE (no load, no charge) 0x02 - DISCHARGING 0x03 - CHARGING 0x04 - FULLY CHARGED
FLAGS	Unsigned int 8	0000 0000 Bits 0 - LOW VOLTAGE 1 - HIGH VOLTAGE 2 - OVERHEAT 3 - SHORT CIRCUIT 4..7 - RESERVED

O2D-1

DEV = 0x03

Open Differential Drive