USB CAN Tool

Interface to four CAN networks via USB

Features

- 4 CAN networks up to 1Mbps each
- Configurable bit rate
- USB interface to PC

Applications

- Driverless car research
- Advanced Driver Assist (ADAS) research

Description

The Dataspeed Inc. USB CAN Tool interface enabled sending and receiving industry standard CAN messages on four networks. Configurable bit rates for each network.

Contents

DISCLAIMER:

This product is intended for research purposes only. Steps have been taken to ensure function on power or communication loss. However, in no event shall Dataspeed Inc. be liable for any direct, indirect, punitive, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of its products.

1   Connector Pin Description

1.1   DB9 Connector

The DB9 connector (male) is used for power and CAN3. Power and ignition are required.

Table 1: DB9 connector pin description.

Pin	Symbol	Description
1	CD	Connector Detect
2	CAN3L	CAN3 Low
3	GND	Ground
4	IGNITION	Ignition (12V)
5	NC	No Connect
6	CD	Connector Detect
7	CAN3H	CAN3 High
8	GND	Ground
9	POWER	Power (12V)

1.2   DB15 Connector

The DB15 connector (female) is used for CAN1, CAN2, and CAN4.

Table 2: DB15 connector pin description.

Pin	Symbol	Description
1	NC	No Connect
2	CAN1H	CAN1 High
3	RES	Reserved
4	GND	Ground
5	CAN2L	CAN2 Low
6	NC	No Connect
7	CAN4H	CAN4 High
8	NC	No Connect
9	GND	Ground
10	CAN1L	CAN1 Low
11	NC	No Connect
12	CAN2H	CAN2 High
13	RES	Reserved
14	GND	Ground
15	CAN4L	CAN4 Low

1.3 USB Connector

USB Type B mini. The USB connector is used for firmware upgrade and communication with a PC. The USB connector is not used for power. Power must be provided on the DB9 connector.

2 Electrical Characteristics

Table 3: Electrical Characteristics.

Characteristic	Min	Typ	Max	Units	Conditions
$V_{IGNITION}$ ON	9	12	16	V	
$V_{IGNITION}$ OFF	-0.3	0	2	V	
V_{POWER}	9	12	16	V	
I_{POWER}		200		mA	V_{POWER}=12V, $V_{IGNITION}$>9V, (older devices)
I_{POWER}		90		mA	V_{POWER}=12V, $V_{IGNITION}$>9V
I_{POWER}			0.1	mA	V_{POWER}=12V, $V_{IGNITION}$<2V
Temperature	-40		+85	°C	

3 CAN Buses

Table 4: CAN Buses.

BUS	Conn	CANL	CANH	GND	Term	Shorted[1]
CAN1	DB15	10	2	9	No	X
CAN2	DB15	5	12	4	120Ω	X
CAN3	DB9	2	7	3	120Ω	
CAN4	DB15	15	7	14	No	

Note 1: On some older devices, CAN1 and CAN2 are shorted together when power is off. No channels are shorted when power is on.

APPENDIX A: REVISION HISTORY

Revision A-01 (August 2016)
Modifications:

1. Initial release of this document.