DFL168A Module V1.00

Features:

- One UART/RS232 port accesses Heavy-Duty Vehicle, Spreader Device, GPS Device, One-wire I button, and I/O
- Supports both RS232 and 3.3V/5V TTL logic UART
- Contain RS485 and CAN BUS transceiver.
- Vehicle Speed PWM output and Forwad/Backward output, It can used for spreader controller as speed input or It will make GPS DR function easier.
- Support Self-Diagnose function, that makes troubleshoot easier
- Support non-intrude command which makes IC not to intrude any signals into Truck Data Bus
- Single +5V regulated power supply needed
- Mechanical size is the same as standard PDIP 32 Package
- Quick solution for OEM Fleet management applications

Description:

The DFL168A Module uses DFL168A IC, which can access SAE J1939, SAE J1708 protocols, and lots of spreader or GPS serial device or one-wire device or inputs and output by an interface UART port. It will be perfect for fleet management system. We know lots of AVL (Automatic Vehicle Locator) in the market, which only has one RS232 interface. However, As for an fleet management system, we need to monitor not only GPS location, but also vehicle and equipment parameters on the vehicle such as spreader. DFL168A provides a good solution. You only need one RS232 or UART, and you can monitor vehicle and spreader status and i-button or other discrete/Analog inputs.

We strongly recommend customer to read DFL168A data sheet before reading this data sheet.

Pinout:

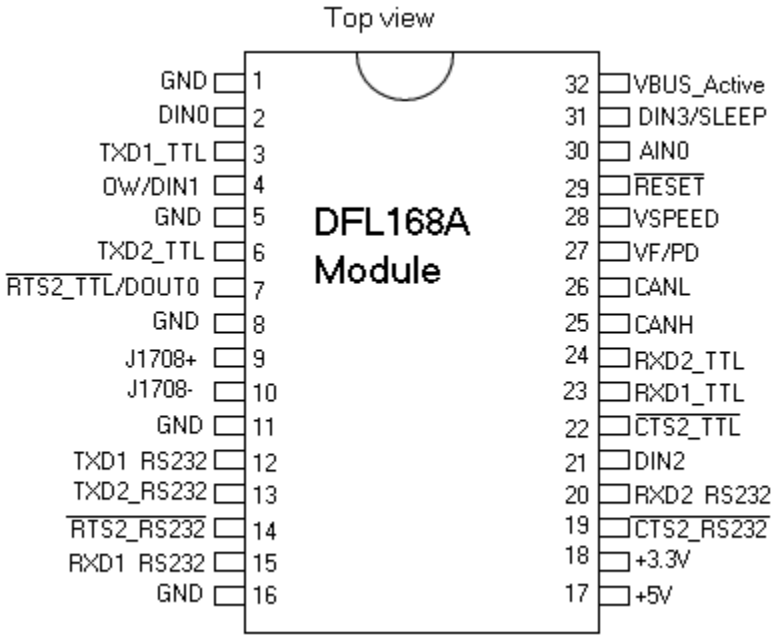


Fig.1 DFL168A Module Pin footprint

Pin 1	GND	Pin 17	+5V
Pin 2	DIN0	Pin 18	+3.3V
Pin 3	TXD1_TTL	Pin 19	CTS2_RS232
Pin 4	OW/DIN1	Pin 20	RXD2_RS232
Pin 5	GND	Pin 21	DIN2
Pin 6	TXD2_TTL	Pin 22	CTS2_TTL
Pin 7	RTS2_TTL/DOUT0	Pin 23	RXD1_TTL
Pin 8	GND	Pin 24	RXD2_TTL
Pin 9	J1708+	Pin 25	CANH
Pin 10	J1708-	Pin 26	CANL
Pin 11	GND	Pin 27	VF/PD
Pin 12	TXD1_RS232	Pin 28	VSPEED
Pin 13	TXD2_RS232	Pin 29	RESET
Pin 14	RTS2_RS232	Pin 30	AIN0
Pin 15	RXD1_RS232	Pin 31	DIN3
Pin 16	GND	Pin 32	VBUS_Active

DIN0: Discrete input 0 (Input Pin). 3.3V TTL logic, Logic 0: 0.0 to 0.6V, Logic 1: 2.31 to 3.3V

TXD1_TTL: TXD1 of UART1 (output pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V. UART1 is for interface. If you use TTL UART1, You can't use RS232 (Pin 12).

OW/DIN1: One -wire bidirectional pin or Discrete input 1 (Input Pin). This pin is open-drain. You have to connect a pull-up resistor (1K to 2.2K). It's 3.3V TTL logic. For input, Logic 0: 0.0 to 0.6V, Logic 1: 2.31 to 5V. For output, Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V.

TXD2_TTL: TXD2 of UART2 (output pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V. UART2 is for connecting device 1. If you use TTL UART2, You can't use RS232 (Pin 13).

RTS2_TTL/DOUT0: RTS2 of UART2 or Discrete output 0 (output pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V. RTS2_TTL is active low. Output Current source and sink: 4mA If you use TTL UART2, You can't use RS232 (Pin 14).

J1708+ and J1708-: J1708 BUS Signals (differential signals, bidirectional) . Directly connect the outside J1708 bus.

TXD1_RS232: TXD1 of UART1 (output pin).This is RS232 level. If you use RS232, You can't use TTL UART1 (Pin 3).

TXD2_RS232: TXD2 of UART2 (output pin).This is RS232 level. If you use RS232, You can't use TTL UART2 (Pin 6).

RTS2_RS232: RTS2 of UART2 (output pin).This is RS232 level. Logic 0 is active. If you use RS232, You can't use TTL UART2 (Pin 7) and DOUT0 (Pin 7)

RXD1_RS232: RXD1 of UART1 (input pin).This is RS232 level. If you use RS232, You can't use TTL UART1 (Pin 23).

CTS2_RS232: CTS2 of UART2 (input pin).This is RS232 level. Logic 0 is active. If you use RS232, You can't use TTL UART2 (Pin 22) and DIN2 (Pin 21).

RXD2_RS232: RXD2 of UART2 (input pin).This is RS232 level. If you use RS232, You can't use TTL UART2 (Pin 24).

DIN2: Discrete input 2 (Input Pin). Proximity sensor input (NPN type), Logic 0: 0.0 to 0.3V, Logic 1: 2.1 to 65V. Although Din2 pin is in different position with CTS2 (TTL and RS232), you can't use both DIN2 and CTS2 at the same time.

CTS2_TTL: CTS2 of UART2 (Input pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.3V, Logic 1: 2.1 to 5V. UART2 is for connecting device 1. CTS2_TTL is active Logic 0. If you use TTL UART2, You can't use RS232 (Pin 19) and DIN2 (Pin 21).

RXD1_TTL: RXD1 of UART1 (Input pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.3V, Logic 1: 2.1 to 5V. UART1 is for interface. If you use TTL UART1, You can't use RS232 (Pin 15).

RXD2_TTL: RXD2 of UART2 (Input pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.3V, Logic 1: 2.1 to 5V. UART2 is for connecting device 1. If you use TTL UART2, You can't use RS232 (Pin 20).

CANH and CANL: J1939 BUS Signals (differential signals, bidirectional) . Directly connect the outside CAN

BUS.

VF/PD: Vehicle Forward and Power down (output pin). This is 3.3V TTL level. Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V. Output Current source and sink: 4mA

VSPEED: Vehicle Speed pulse (output pin). Duty cycle is 50%. This is 3.3V TTL level. Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V. Output Current source and sink: 4mA

RESET: Reset Pin (Input Pin). It is active low, low pulse with 2us or more will reset IC. 3.3V TTL logic, Logic 0: 0.0 to 0.6V, Logic 1: 2.31 to 3.3V

AIN0: Analog input pin. voltage range is 0.0 to 3.3V.

DIN3: Discrete input 3 (Input Pin). 3.3V TTL logic, Logic 0: 0.0 to 0.6V, Logic 1: 2.31 to 3.3V

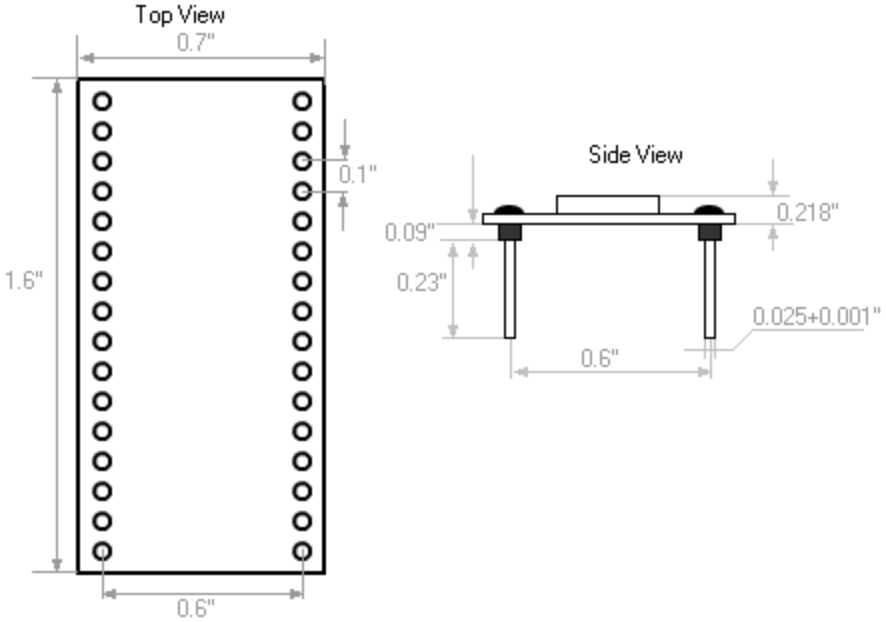
VBUS_Active: Vehicle Bus Activated output. This is 3.3V TTL level. Logic 0: 0.0 to 0.4V, Logic 1: 2.4 to 3.3V. Output Current source and sink: 4mA.

+5V: Power pin (Input) . Connect to the positive side of DC power supply which is from 4.5 to 5.5 VDC (Must be regulated), Max current will be 65mA

Gnd: Power pin. Connect to the negative side of DC power supply

+3.3V: Power pin (Output) . Maximum of output current is 220mA if +5V power pin can provide max 300mA.

Mechanical Dimension:



Notes: *1 You can't use PDIP32 Socket for the DFL168A module because the pin is a little bigger than the pin of PDIP32 socket although package is the same as PDIP32*

2 Suggested mating female connector:Samtec P/N. #SSW-116-21-G-S

3 There is a pin number label in the module.Wrong polarity will damage the module.

Electrical Specification

Standard operating Temperature: -40℃ to 85℃

Storage Temperature: -55℃ to 125℃

Supply Current: maximum at +5V pin: 65mA, typical: 51mA (All are the situation without Pin 3.3V load)

+5V power supply : 4.5VDC to 5.5VDC regulated

IMPORTANT NOTICE

The information in this manual is subject to change without notice.

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