How to Use DAP (Debug Access Port) Station

1. General Description

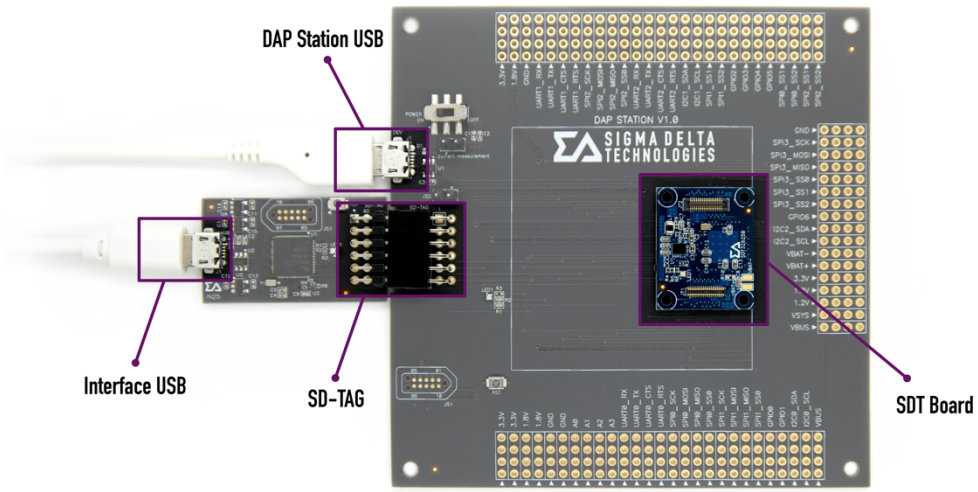
The DAP Station is a development and evaluation board for debugging the SDT Board.

It provides convenient debugging with easy and intuitive interface. In addition, all pins can be connected to the exterior, making it very easy to test all pins. The DAP Station cannot be used independently. It should be connected with SDT Board to measure data values and can be used to debug the SDT Board by connecting with the Interface.

2. Benefits and Features

- Simple connection
- Micro-USB Type-B connection for SDT Board Power Supply.
- Easy debugging and programming SDT Board via Interface.
- Header Connector with 0.100” (2.54mm) pitch for accessing the General Pins.

3. How to connect DAP Station with SDT Board and Interface



- Prepare the Interface suitable for the SDT Board.

Interface	SDT Board
IN25	SDT32620B, SDT32625B
IN11	SDT51822B, SDT52832B, SDT8195B, SDT64B

Table 1. Interface Compatibility

- Connect SDT Board to DAP Station.

- Use SD-TAG of Interface to connect with DAP Station.

Pin 1	SWD_DIO	Pin 2	VCC
Pin 3	SWD_CLK	Pin 4	GND
Pin 5	JTAG_TDO for IN11/NC for IN25	Pin 6	GND
Pin 7	NC	Pin 8	NC
Pin 9	SWD_RST	Pin 10	NC
Pin 11	SWD_TGT_RX	Pin 12	SWD_TGT_TX

Table 2. SD-TAG of Interface

- Connect PC to Interface using Micro B-Type USB.

- Supply power to SDT Board using DAP Station's Micro B-Type USB Connector.

- Use the online compiler on the Arm Mbed homepage or CLI to program and compile.

- Move the compiled file (.bin or .hex) into the DAPLink drive.

    * For efficient connection, the SD-TAG of the DAP Station (Table 3) and the SD-TAG of the Interface (Table 2) are symmetrically positioned.

    * IN11 uses JTAG_TDO pin to serve as SWO.

    * IN11 and IN25 support SWD and UART communication for programming and debugging. They do not support JTAG.

4. Detailed Description of Hardware

This section describes the main features and components of the DAP Station. The primary purpose of the DAP Station is to allow the user to conveniently use full functions of each SDT Board.

1) Micro USB B-Type Connector

The DAP Station has a USB2.0 full-speed interface, which enables data transfer and 5V (VBUS) Power Supply.

2) SD-TAG

The DAP Station has the SD-TAG. You can easily debug by connecting with SDT Interface. Check the Table 1 to use the appropriate Interface for SDT Boards. As mentioned above, the SD-TAG of the DAP Station and the SD-TAG of the Interface (Table 2) are symmetrically positioned.

Pin 1	VCC	Pin 2	SWD_DIO (JTAG_TMS)
Pin 3	GND	Pin 4	SWD_CLK (JTAG_CLK)
Pin 5	GND	Pin 6	JTAG_TDO (SWO)
Pin 7	SWD_TGT_CTS	Pin 8	JTAG_TDI
Pin 9	SWD_TGT_RTS	Pin 10	SWD_RST (JTAG_TRST)
Pin 11	SWD_TGT_TX	Pin 12	SWD_TGT_RX

Table 3. SD-TAG of the DAP Station

3) Current Measurement Jumper (J2)

Using the Jumper, the total power consumption of the DAP Station can be easily measured.

* total current amount of 5V (VBUS)

4) Jumper Cab (JS2)

Jumper Cab is inserted to connect power from the Interface to the SDT Board when using a single power cable.

We however strongly recommend that you remove the Jumper Cab, and connect power cable to both the DAP Station and the Interface to debug Boards. Connecting power to the Interface and maintaining JS2 connection may overheat the Interface, causing irreversible product damage.

5) Switch

The tactile switch is connected to SWD_RST and is used for software reset.

The slide switch is used to turn On/Off the main power.

6) LED

The DAP Station has an RGB LED. LED's RGB signal lines are connected to the SDT Board through high-dense connectors. It can be used as an LED for testing.

7) TC2050

On the DAP Station, there is a TC2050 tag connection for programming. It is designed to allow programming without purchasing additional Interface, if the user already has an appropriate Interface Module from other companies.