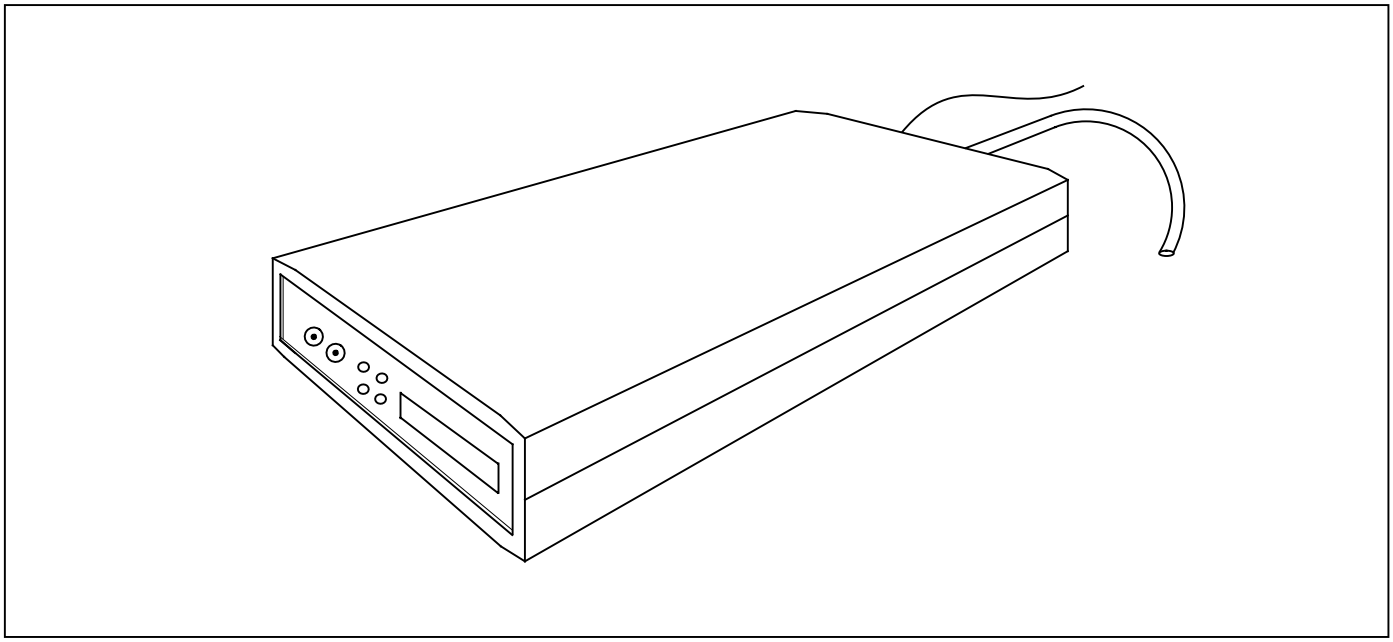
SGS-THOMSON MICROELECTRONICS

ST20-JPI

PC PARALLEL PORT TO JTAG INTERFACE

PRODUCT INFORMATION



FEATURES

- Desktop mounted parallel port to JTAG interface
- Standard 25 way D-type parallel port connection
- Standard 26 way D-type differential OS-Link port for connection to a B300.
- Standard 20 way IDC cable for JTAG connection.
- Plug top power supply
- Supports nibble, byte and EPP mode parallel port standards

DESCRIPTION

The ST20-JPI parallel port to JTAG interface is a host interface to allow connection from a PC parallel port to any JTAG diagnostic controller based ST20 development board. The interface plugs into any standard PC 25 way D-type parallel port. Supported parallel port modes are:

- Nibble mode
- Byte mode
- EPP mode

depending on which mode the host PC can support. Connection to the development target is via a 20 way IDC JTAG connector. Once connected, the development target can be accessed using the MS Windows drivers supplied with the standard ST20 toolset.

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1 Introduction

The ST20-JPI parallel port to JTAG interface is a host interface to allow connection from a PC parallel port to any JTAG based ST20 development board. The interface plugs into any standard PC 25 way D-type parallel port. Supported parallel port modes are:

- Nibble mode
- Byte mode
- EPP mode

depending on which mode the host PC can support. Connection to the development target is via a JTAG connector. Once connected, the development target can be accessed using the MS Windows drivers supplied with the standard ST20 toolset.

2 Installation

2.1 Hardware Installation - PC

The ST20-JPI has six connections: Parallel port; Differential OS-Link, JTAG, TrigIn, TrigOut and Power supply. To install the hardware connecting to a PC, the following steps should be followed:

- Plug the 25-way D-type of the parallel port cable built into the interface, into the parallel port of the PC.
- Plug the target development system into the 20-way IDC connector using a 20 way IDC cable.
- Plug power supply cable into PSU socket of the interface.
- Plug the power supply into the mains socket.
- Switch on the PC.
- Switch on the power supply. The LEDs on the interface should illuminate once the software is running. For a description of the meaning of the LEDs, see the ST20 toolset documentation.

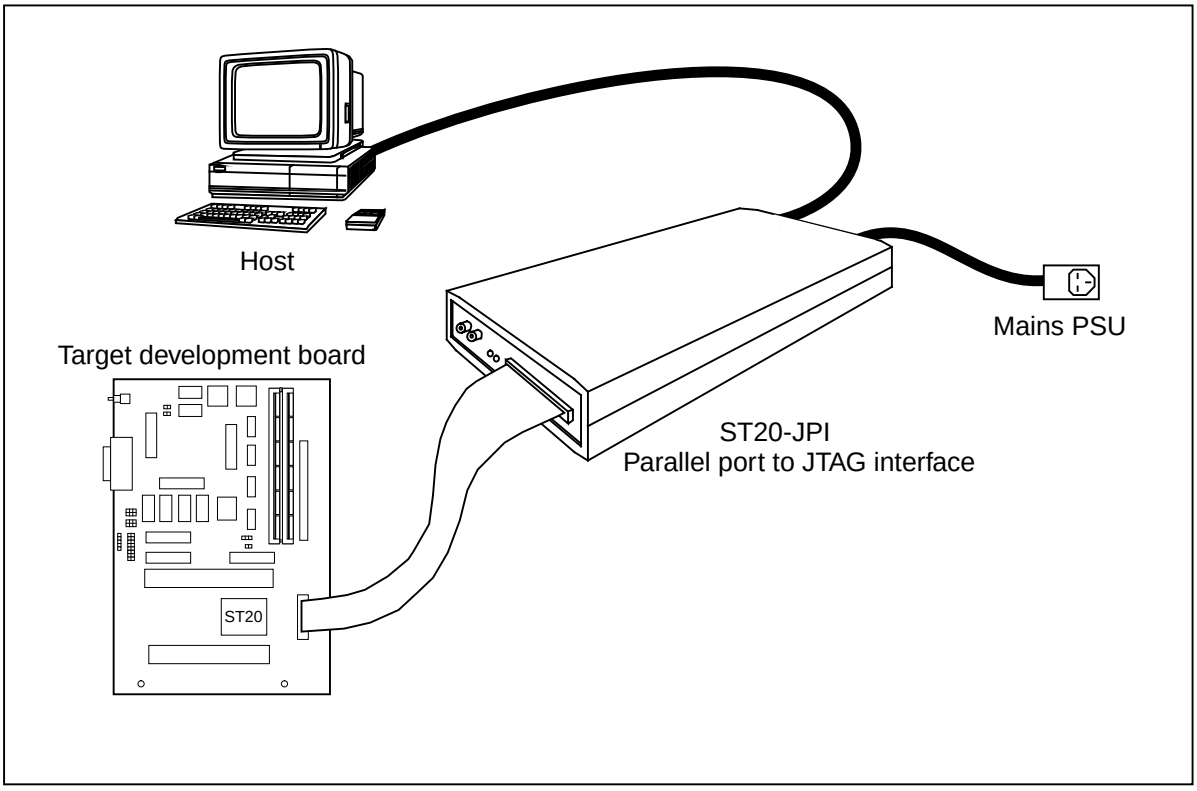


Figure 2.1 ST20-JPI connections basic configuration

2.2 Hardware Installation - B300

The ST20-JPI can also be attached to the Ethernet via a B300. To install the hardware connecting to a B300, the following steps should be followed:

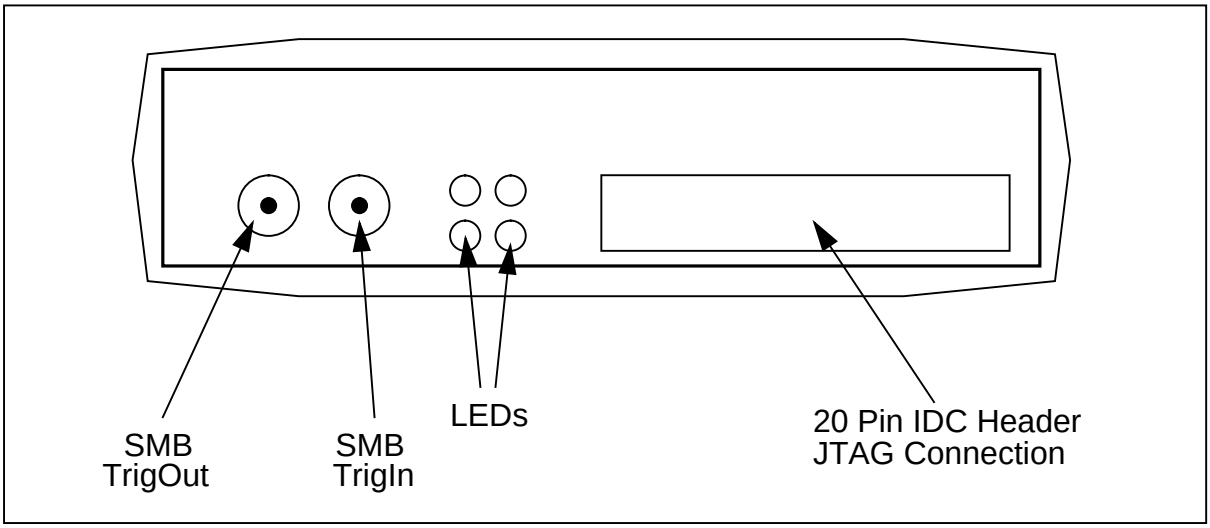
- Connect the B300 to the ST20-JPI using a Differential OS-Link cable supplied with the B300.
- Plug the target development system into the 20-way IDC connector using a 20 way IDC cable.
- Plug power supply cable into PSU socket of the interface.
- Plug the power supply into the mains socket.
- Switch on the B300.
- Switch on the power supply to the ST20-JPI. The LEDs on the interface should illuminate once the software is running. For a description of the meaning of the LEDs, see the ST20 toolset documentation.
- Switch on the Target power supply.

2.3 Software Installation

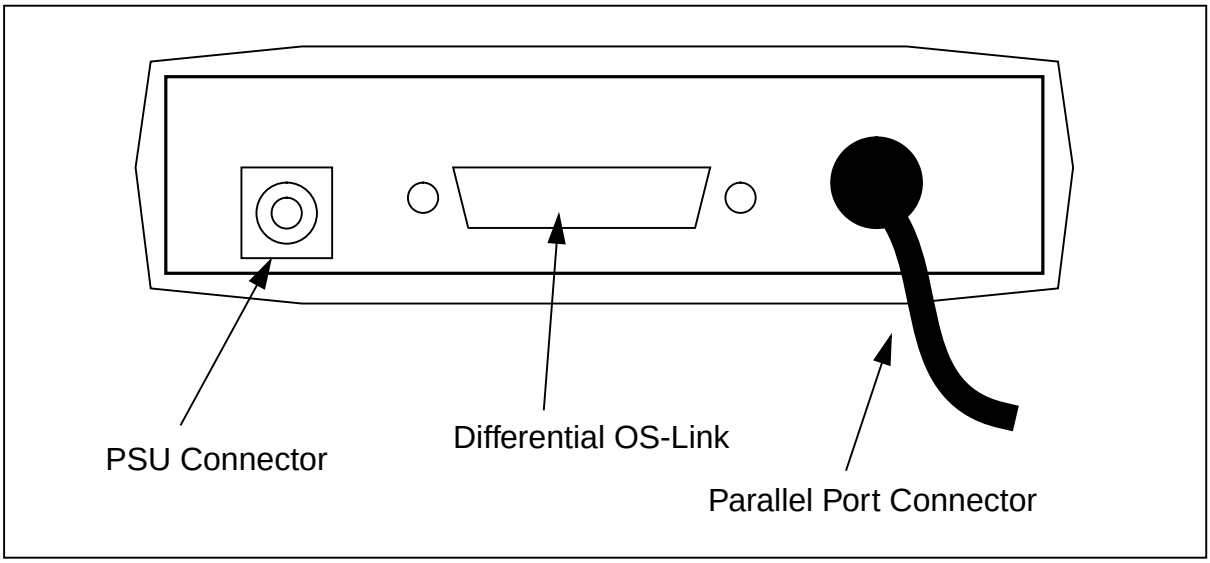
For installation of the DLL and VxD drivers, please refer to the ST20 Toolset software installation documentation.

3 Connectors

3.1 The ST20-JPI front panel



3.2 The ST20-JPI rear panel



3.3 Differential Link Connection

The Differential OS-Link connector is used to connect the ST20-JPI to a B300 instead of a Parallel port.

Pin	Description	Pin	Description
1	**+notSSDownReset**	14	**GND**
2	**+notSSDownAnalyse**	15	**GND**
3	**+notSSDownError**	16	**GND**
4	**+notSSUpReset**	17	**GND**
5	**+notSSUpAnalyse**	18	**GND**
6	**+notSSUpError**	19	**-notSSDownReset**
7	**+LinkOut**	20	**-notSSDownAnalyse**
8	**+LinkIn**	21	**-notSSDownError**
9	**GND**	22	**-notSSUpReset**
10	**GND**	23	**-notSSUpAnalyse**
11	**GND**	24	**-notSSUpError**
12	**GND**	25	**-LinkOut**
13	**GND**	26	**-LinkIn**

Table 3.1 26 way D-type connector

3.4 JTAG Connection

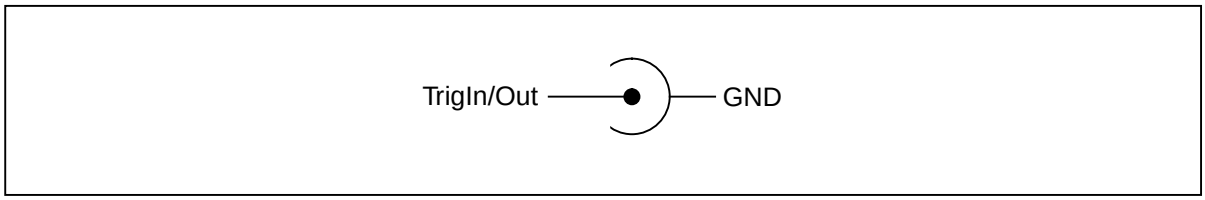
The JTAG connector is a 20 pin male IDC header. The following table shows the pinout of the ST20-JPI and the pinout required for the target board:

Pin Number	Host Connection	Target Connection
Even Numbers	**GROUND**	**GROUND**
1	**Reserved**	**Do Not Wire**
3	**TrigIn**	**TrigOut**
5	**TrigOut**	**TrigIn**
7	**Reserved**	**Do Not Wire**
9	**TMS (Out)**	**TMS (In)**
11	**TCK (Out)**	**TCK (In)**
13	**TDO**	**TDI**
15	**TDI**	**TDO**
17	**notRST (Out)**	**notRST (In)**
19	**notTRST (Out)**	**notTRST (In)**

Table 3.2 JTAG connector pinout

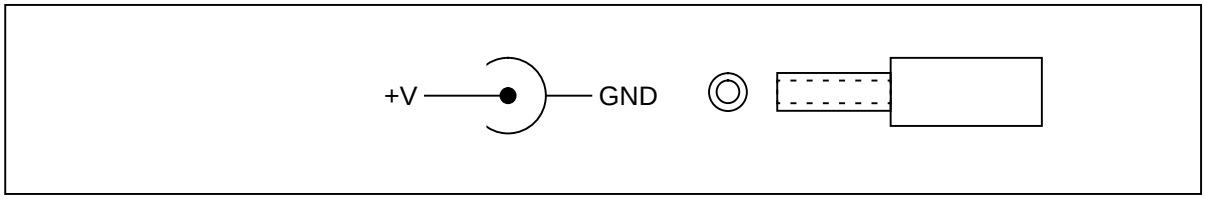
3.5 TrigIn/TrigOut SMB Coaxial Connectors

The two coaxial SMB connectors to the left of the LEDs are used to connect the ST20-JPI to a Logic Analyser. They are used to signal between the Host, Target and Logical Analyser when an event occurs. If, for instance, an event occurs on the Target processor, the TrigOut signal is triggered which could start the Logic Analyser tracing an external event, so aiding software/ hardware debugging.



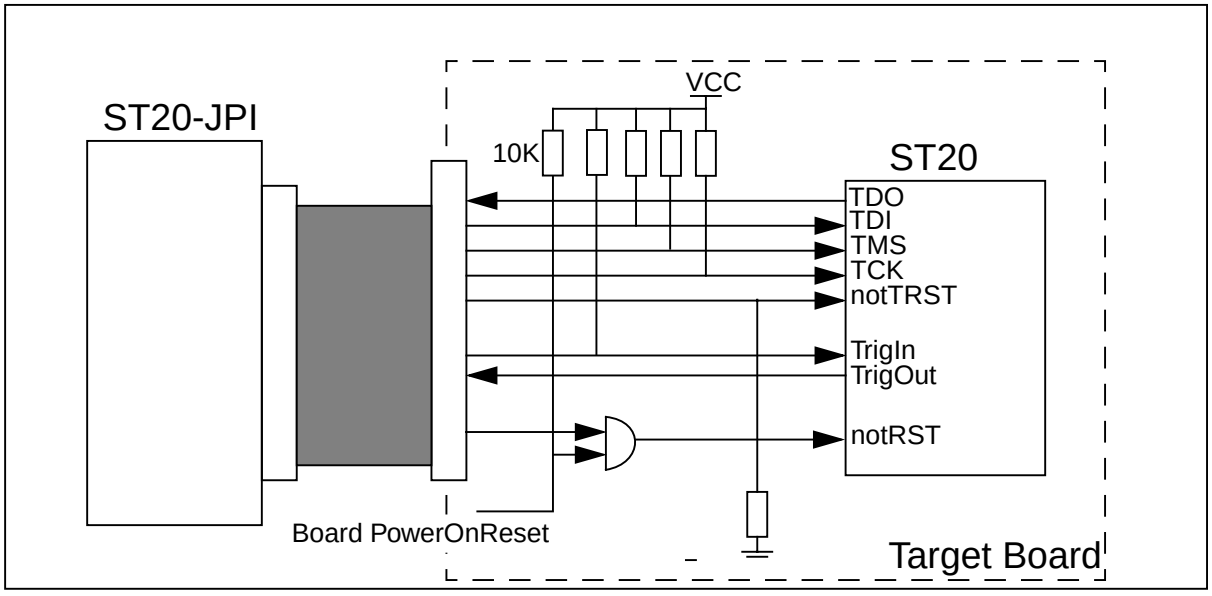
3.6 Power Supply Connector

The ST20-JPI uses a 2.5mm power connector. The voltage range is 8-13V dc.



4 Recommended Target Circuitry

To ensure correct connection to the target processor, the following circuit should be used:



5 Field Support

SGS-THOMSON Microelectronics Limited products are supported worldwide through Sales Offices and authorized distributors.

6 Ordering information

Description	Order Number
ST20-JPI Parallel Port to JTAG Interface (US)	ST20-JPI/110
ST20-JPI Parallel Port to JTAG Interface (European)	ST20-JPI/220
ST20-JPI Parallel Port to JTAG Interface (UK)	ST20-JPI/UK

Table 6.1 Ordering information

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