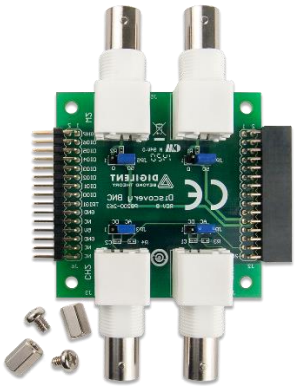
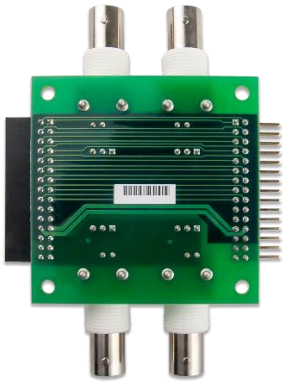
Discovery BNC Adapter Reference Manual

The Discovery BNC adapter board is intended to be used with Digilent's Analog Discovery tool to enable the use of standard BNC terminated test leads and probes. The adapter board enables the user to AC couple or DC couple single-ended signals to the oscilloscope in the Analog Discovery 2.


Download This Reference Manual

- Discovery BNC Adapater

Features

- Standard BNC interface to single-ended BNC terminated test leads and oscilloscope probes.
- Selectable AC and DC coupling to oscilloscope probes.
- Selectable 50-ohm or 0-ohm output impedance on Arbitrary Waveform Generator (AWG) channels.
- Increased oscilloscope bandwidth of up to 50 MHz when used with Digilent BNC probe

Physical Dimensions

The PCB of the BNC Adapter is 6.0 cm (2.36 inches) per side.

Functional Description

The Discovery BNC adapter board has BNC terminations to each of the two oscilloscope channels on the Analog Discovery. Each channel of the oscilloscope can be selected as AC or DC coupled by adjusting the jumper that is located behind that channel's BNC input connector. Note that the negative inputs for both oscilloscope channels are tied to ground, creating single ended inputs with the BNC Adapter board.

The two AWG channels are equipped with BNC terminations for use with BNC style test leads. Each of the two channels can have either the 50Ω or the 0Ω termination selected. This enables the user to match the Analog Discovery's output impedance with either standard 50-ohm test leads or to be directly tied to the lead.

All the remaining signals from the Analog Discovery pass through the adapter to a female header located on the outer edge of the board.

Pinout Diagram

Header J2				**Header J6**			
Pin 1	DIO 7	Pin 2	DIO 15	Pin 1	DIO 7	Pin 2	DIO 15
Pin 3	DIO 6	Pin 4	DIO 14	Pin 3	DIO 6	Pin 4	DIO 14
Pin 5	DIO 5	Pin 6	DIO 13	Pin 5	DIO 5	Pin 6	DIO 13
Pin 7	DIO 4	Pin 8	DIO 12	Pin 7	DIO 4	Pin 8	DIO 12
Pin 9	DIO 3	Pin 10	DIO 11	Pin 9	DIO 3	Pin 10	DIO 11
Pin 11	DIO 2	Pin 12	DIO 10	Pin 11	DIO 2	Pin 12	DIO 10
Pin 13	DIO 1	Pin 14	DIO 9	Pin 13	DIO 1	Pin 14	DIO 9
Pin 15	DIO 0	Pin 16	DIO 8	Pin 15	DIO 0	Pin 16	DIO 8
Pin 17	TRIG_1	Pin 18	TRIG_2	Pin 17	TRIG_1	Pin 18	TRIG_2
Pin 19	WGND	Pin 20	GND	Pin 19	GND	Pin 20	GND
Pin 21	VOUT_AWG1	Pin 22	VOUT_AWG2	Pin 21	NC	Pin 22	NC
Pin 23	VOUT5V0_USR	Pin 24	VOUT-5V0_USR	Pin 23	VOUT5V0_USR	Pin 24	VOUT-5V0_USR
Pin 25	SGND	Pin 26	GND	Pin 25	GND	Pin 26	GND
Pin 27	VIN_SC2_P	Pin 28	SGND	Pin 27	NC	Pin 28	NC
Pin 29	VIN_SC1_P	Pin 30	SGND	Pin 29	NC	Pin 30	NC

J1 (scope 1)		**JP2 (scope 1)**	
Pin 1	VIN_SC1_P	DC coupled	Direct connection from the BNC probe to the Scope input
Pin 2	Ground	AC coupled	Connection from the BNC probe through the high pass filter to the Scope input

J3 (scope 2)		**JP3 (scope 2)**	
Pin 1	VIN_SC2_P	DC coupled	Direct connection from the BNC probe to the Scope input
Pin 2	Ground	AC coupled	Connection from the BNC probe through the high pass filter to the Scope input

J5 (AWG 2)		**JP5 (AWG 2)**	
Pin 1	VOUT_AWG2	0 Ohm	0 Ohm Termination for the AWG
Pin 2	Ground	50 Ohm	50 Ohm Termination for the AWG

J4 (AWG 1)		**JP4 (AWG1)**	
Pin 1	VOUT_AWG1	0 Ohm	0 Ohm Termination for the AWG
Pin 2	Ground	50 Ohm	50 Ohm Termination for the AWG