

ISLAVSEVAL1Z

USB to AVSBus™ Adapter User Guide

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The Intersil USB to AVSBus Adapter (often referred to as a “dongle”) is used to connect a demonstration board with a AVSBus interface to a PC. The USB to AVSBus adapter is powered from the USB output of the host PC. The USB interface utilizes the USB Mini format, and the output uses a standard 2 row, 6-pin header on 0.100 inch centers. The AVSBus command set is accessed by using the PowerNavigator™ evaluation software from a PC running Microsoft Windows. The PowerNavigator software is downloaded from the Intersil website using the following link: <http://www.intersil.com/powernavigator.html>

The USB to AVSBus adapter can be used to communicate with Intersil’s AVSBus enabled devices at clock rates from 5MHz to 50MHz and at VDDIO voltage levels from 1V to 3.3V. The VDDIO voltage is generated within the USB to AVSBus adapter. The USB to AVSBus adapter can also store up to 100 instructions for continuous multi-command testing purposes.

Ordering Information

PART NUMBER	DESCRIPTION
ISLAVSEVAL1Z	USB to AVSBus adapter and cable

USB to AVSBus Adapter Quick Start Guide

- Connect the USB Mini provided between the host computer and the USB to AVSBus adapter
- Connect USB to AVSBus adapter to demonstration board to test or evaluate
- Apply input power to the demonstration board
- Configure the demonstration board for AVSBus operation using the USB to PMBus adapter and PowerNavigator™
- Navigate to the AVSBus control page in PowerNavigator™ and evaluate the AVSBus functionality

Technical Details

A typical application set-up is shown in [Figure 1](#). For those wishing to make discrete connections to an application board, a pictorial diagram of the output pin signals is shown in [Figure 2](#). A schematic of the USB to AVSBus Adapter internal circuitry is provided in [Figure 3](#). The Bill Of Materials (BOM) is detailed on [page 3](#).

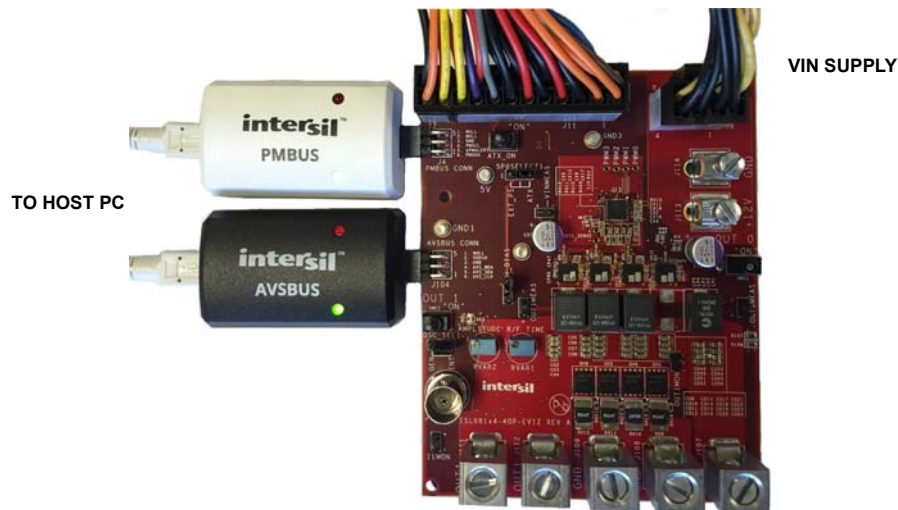


FIGURE 1. USB TO AVSBus TYPICAL SET-UP

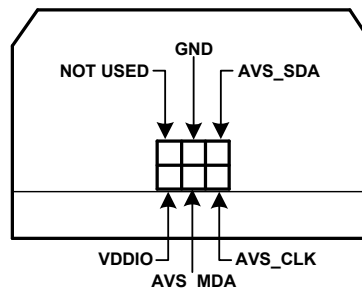


FIGURE 2. PIN CONFIGURATION DIAGRAM

ISLAVSEVAL1Z Schematic

USB, MCU, SPI, AVS CONNECTOR

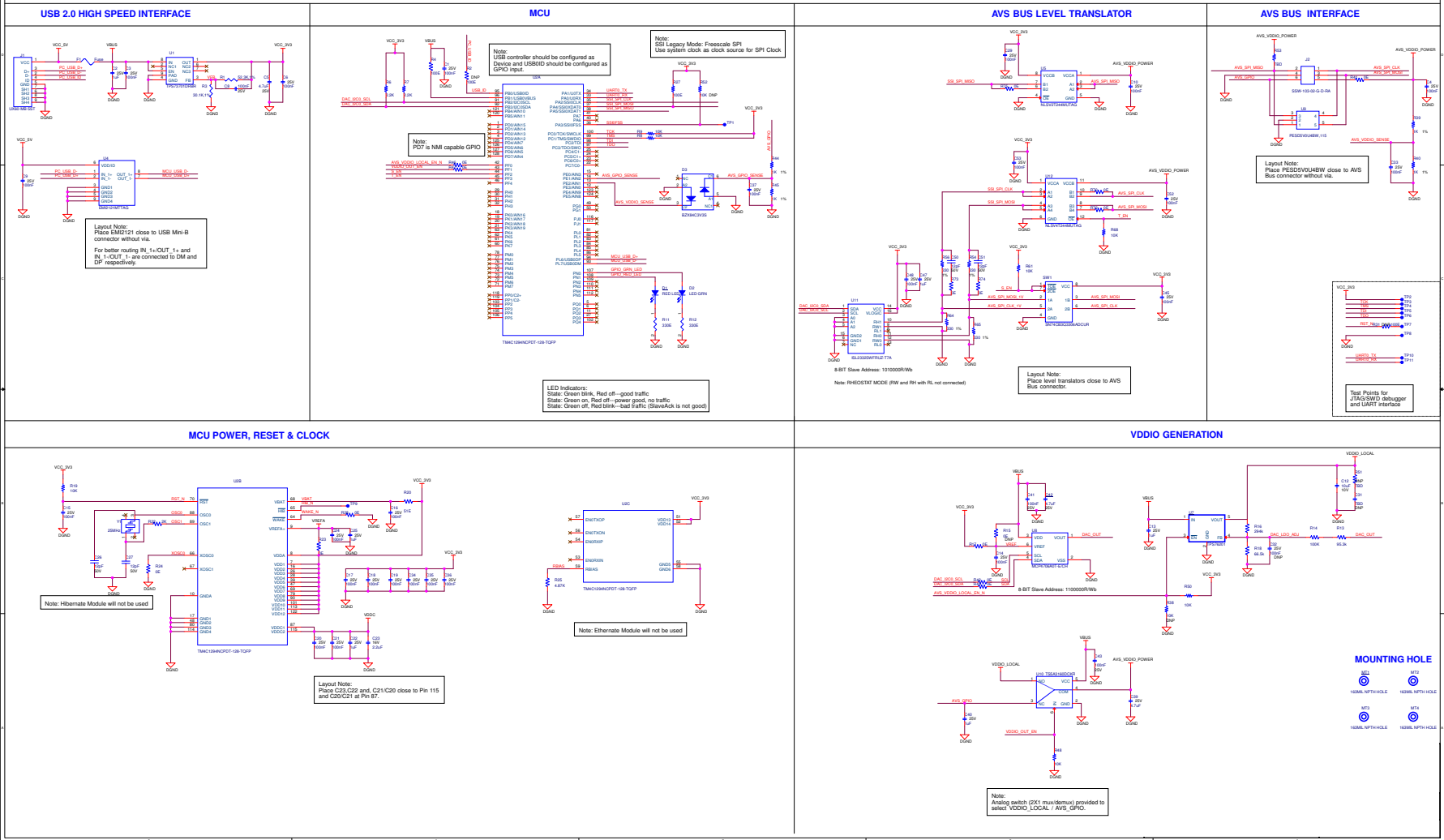


FIGURE 3. USB TO AVSBus ADAPTER SCHEMATIC

Bill of Materials

ITEM	QTY	REFERENCE	MANUFACTURER PART	VALUE	DESCRIPTION	PACKAGE	MANUFACTURER
1	28	C1, C3, C4, C6, C8, C9, C10, C14, C15, C16, C17, C18, C19, C20, C21, C24, C29, C33, C34, C35, C36, C37, C41, C43, C45, C48, C52, C53	C1005X5R1E104K050BC	100nF	CAP CER 0.1 μ F 25V 10% X5R 0402	402	TDK Corporation
2	6	C2, C13, C22, C25, C40, C47	GRM188R61E105KA12D	1 μ F	CAP CER 1 μ F 25V 10% X5R 0603	603	Murata
3	3	C5, C39, C42	CL10A475MA8NQNC	4.7 μ F	CAP CER 4.7 μ F 25V 20% X5R 0603	603	Samsung
4	1	C12	TPSA106K010R0900	10 μ F	CAP TANT 10 μ F 10V 10% 1206	1206	AVX Corporation
5	1	C23	CE EMK107 BJ225KA-T	2.2 μ F	CAP CER 2.2 μ F 16V 10% X5R 0603	603	Taiyo Yuden
6	4	C26, C27, C50, C51	CC0402JRNPO9BN120	12pF	CAP CER 12PF 50V 5% NPO 0402	RC0402	Yageo
7	1	C31	DNP	DNP	DNP	603	TDK Corporation
8	1	C32	C1005X5R1E104K050BC	100nF	CAP CER 0.1 μ F 25V 10% X5R 0402	402	TDK Corporation
9	1	D1	LTL-4221N	RED LED	LED 3mm HI-EFF RED DIFFUSED	Round with Domed Top, 3mm	Lite-On Inc.
10	1	D2	LTL-4231N	LED GRN	LED 3mm GREEN DIFFUSED	Round with Domed Top, 3mm	Lite-On Inc.
11	1	D3	BZX84C3V3S-7-F	BZX84C3V3S	DIODE ZENER ARRAY 3.3V SOT363	SOT-363	Diodes Incorporated
12	1	F1	0603L100SLYR	Fuse	PTC RESETTBLE 6V 1.0A LOW-R 0603	603	Littelfuse Inc.
13	1	J1	UX60-MB-5ST	UX60-MB-5ST	CONN RECEPT MINI USB2.0 5POS	SMT	Hirose
14	1	J2	SSW-103-02-G-D-RA	SSW-103-02-G-D-RA	CONN RCPT 0.100" 6POS DL R/A GOLD	Through-hole	Samtec Inc.
15	4	MT1, MT2, MT3, MT4	NA	163MIL NPTH HOLE		163 MOUNTING HOLE - 250 CLEARANCE	NA

Bill of Materials

ITEM	QTY	REFERENCE	MANUFACTURER PART	VALUE	DESCRIPTION	PACKAGE	MANUFACTURER
16	1	R1	RC1005F5232CS	52.3k, 1%	RES SMD 52.3kΩ 1% 1/16W 0402		Samsung Electro-Mechanics America, Inc.
17	2	R2, R31	ERJ-2RKF1000X	100Ω	RES 100Ω 1/10W 1% 0402 SMD	402	Panasonic
18	1	R3	RC1005F3012CS	30.1k, 1%	RES SMD 30.1kΩ 1% 1/16W 0402		Samsung Electro-Mechanics America, Inc.
19	2	R4, R27	ERJ-2RKF1000X	100Ω	RES 100Ω 1/10W 1% 0402 SMD	402	Panasonic
20	2	R6, R7	RC0402JR-072K2L	2.2k	RES 2.2kΩ 1/16W 5% 0402 SMD	402	Yageo
21	7	R8, R9, R19, R48, R50, R61, R68	ERJ-2RKF1002X	10k	RES 10.0kΩ 1/10W 1% 0402 SMD	402	Panasonic - ECG
22	6	R11, R12, R54, R56, R64, R65	MCR01MZPF3300	330Ω	RES 330Ω 1/16W 1% 0402 SMD	402	Rohm Semiconductor
23	1	R13	ERJ-2RKF9532X	95.3k	RES SMD 95.3kΩ 1% 1/10W 0402	402	Panasonic Electronic Components
24	1	R14	ERJ-2RKF1003X	100k	RES 100kΩ 1/10W 1% 0402 SMD	402	Panasonic
25	1	R15	ERJ-2GE0R00X	0E	RES 0.0Ω 1/10W 0402 SMD	402	Panasonic
26	1	R16	RC1608F2943CS	294k	RES SMD 294kΩ 1% 1/10W 0603	402	Samsung Electro-Mechanics America, Inc
27	14	R17, R23, R24, R28, R41, R42, R43, R46, R47, R70, R72, R73, R74, R75	ERJ-2GE0R00X	0E	RES 0.0Ω 1/10W 0402 SMD	402	Panasonic
28	1	R18	RC1005F6652CS	66.5k	RES SMD 66.5kΩ 1% 1/16W 0402	402	Samsung Electro-Mechanics America, Inc
29	1	R20	RC1005J510CS	51Ω	RES SMD 51Ω 5% 1/16W 0402	402	Samsung Electro-Mechanics America, Inc
30	1	R22	RC1005F202CS	2k	RES SMD 2kΩ 1% 1/16W 0402	402	Samsung Electro-Mechanics America, Inc
31	1	R25	RC1005F4871CS	4.87k	RES SMD 4.87kΩ 1% 1/16W 0402	402	Samsung Electro-Mechanics America, Inc
32	2	R38, R52	ERJ-2RKF1002X	10k	RES 10.0kΩ 1/10W 1% 0402 SMD	402	Panasonic - ECG

Bill of Materials

ITEM	QTY	REFERENCE	MANUFACTURER PART	VALUE	DESCRIPTION	PACKAGE	MANUFACTURER
33	4	R39, R40, R44, R45	ERJ-2RKF1001X	1k	RES 1kΩ 1/10W 1% 0402 SMD	402	Panasonic
34	1	R51	DNP	DNP	DNP	603	DNP
35	1	R53	DNP	DNP	DNP	402	DNP
36	1	SW1	SN74CB3Q3306ADCUR	SN74CB3Q3306ADCUR	IC FET BUS SWITCH DUAL US8	US8	Texas Instruments
37	11	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11	DNP	Test Point	TEST PAD TP-S40	-NA-	-NA-
38	1	U1	TPS73701DRBR	TPS73701DRBR	IC REG LDO ADJ 1A 8SON	8-SON	Texas Instruments
39	1	U2	TM4C1294NCPDTI3	TM4C1294NCPDT-128-TQFP	IC MCU 32BIT 1024KB FLASH 128TQF	128-pin TQFP	Texas Instruments
40	1	U4	EMI2121MTTAG	EMI2121MTTAG	IC FILTER COMMON-MODE ESD 8WDFN	WDFN8	ON Semiconductor
41	1	U5	NLSV2T244MUTAG	NLSV2T244MUTAG	IC XLATOR 2BIT NONINV DUAL 8UDFN	8-UDFN	ON Semiconductor
42	1	U7	TPS76201DBVT	TPS76201	IC REG LDO ADJ 0.1A SOT23-5	SOT-23-5	Texas Instruments
43	1	U8	MCP4706A0T-E/CH	MCP4706A0T-E/CH	IC DAC 8BIT NV EEP I2C SOT23-6	SOT-23-6	Microchip
44	1	U9	PESD5V0U4BW, 115	PESD5V0U4BW, 115	DIODE ARRAY ESD BI-DIR SOT-665	SOT-665	NXP Semiconductor
45	1	U10	TS5A3160DCKR	TS5A3160DCKR	IC SWITCH SPDT SC70-6	SC70	Texas Instruments
46	1	U11	ISL23325WFRUZ-T7A	ISL23325WFRUZ-T7A	IC DGTL POT DUAL 10k 16UTQFN	16-UFQFN	Intersil
47	1	U12	NLSV4T244MUTAG	NLSV4T244MUTAG	IC XLATOR 4BIT DUAL 12-UQFN	12-UQFN	ON Semiconductor
48	1	Y1	NX3225GA-25.000M-STD-CRG-2	25MHz	CRYSTAL 25.0000MHZ 8PF SMD	3.20mmx2.50mm	NDK

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