

USB MIO-E Design Reference

Revision 1.0

Reference Documents

Document	Location

Introduction

- This document is the design reference for designing a MIOe module with USB feature to work with Advantech MIO single board.

- Contents:
 - Function Selection Table
 - PCB Layout Considerations
 - Reference Schematic
 - Component List

This document is only for MIOe design reference purpose only. Although the information is intended to be accurate, Advantech makes no claims, promises, or guarantees about the quality or reliability of a MIOe board that designed by any user who is outside of Advantech Corp.

FUNCTION SELECTION TABLE

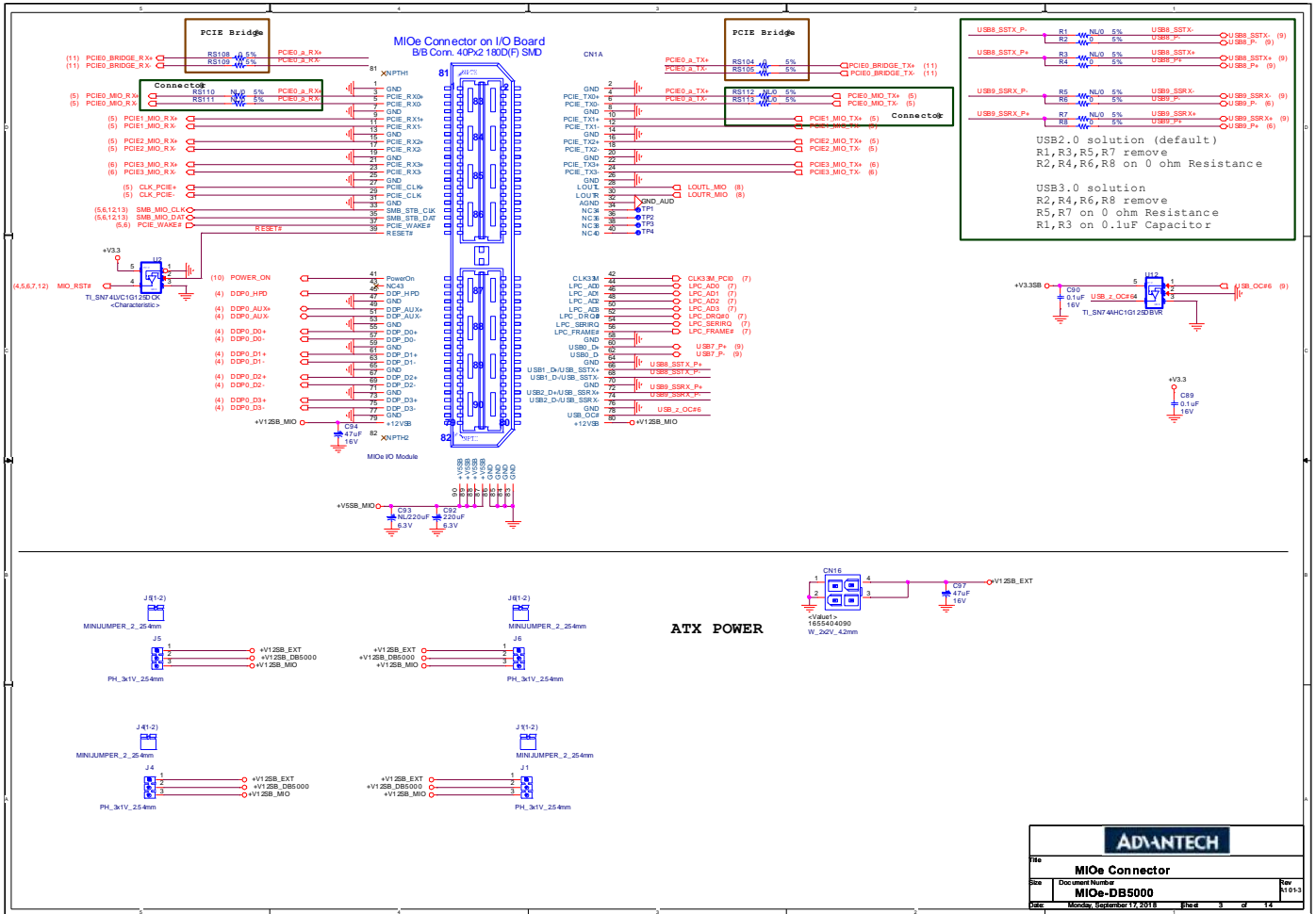
USB 3.0

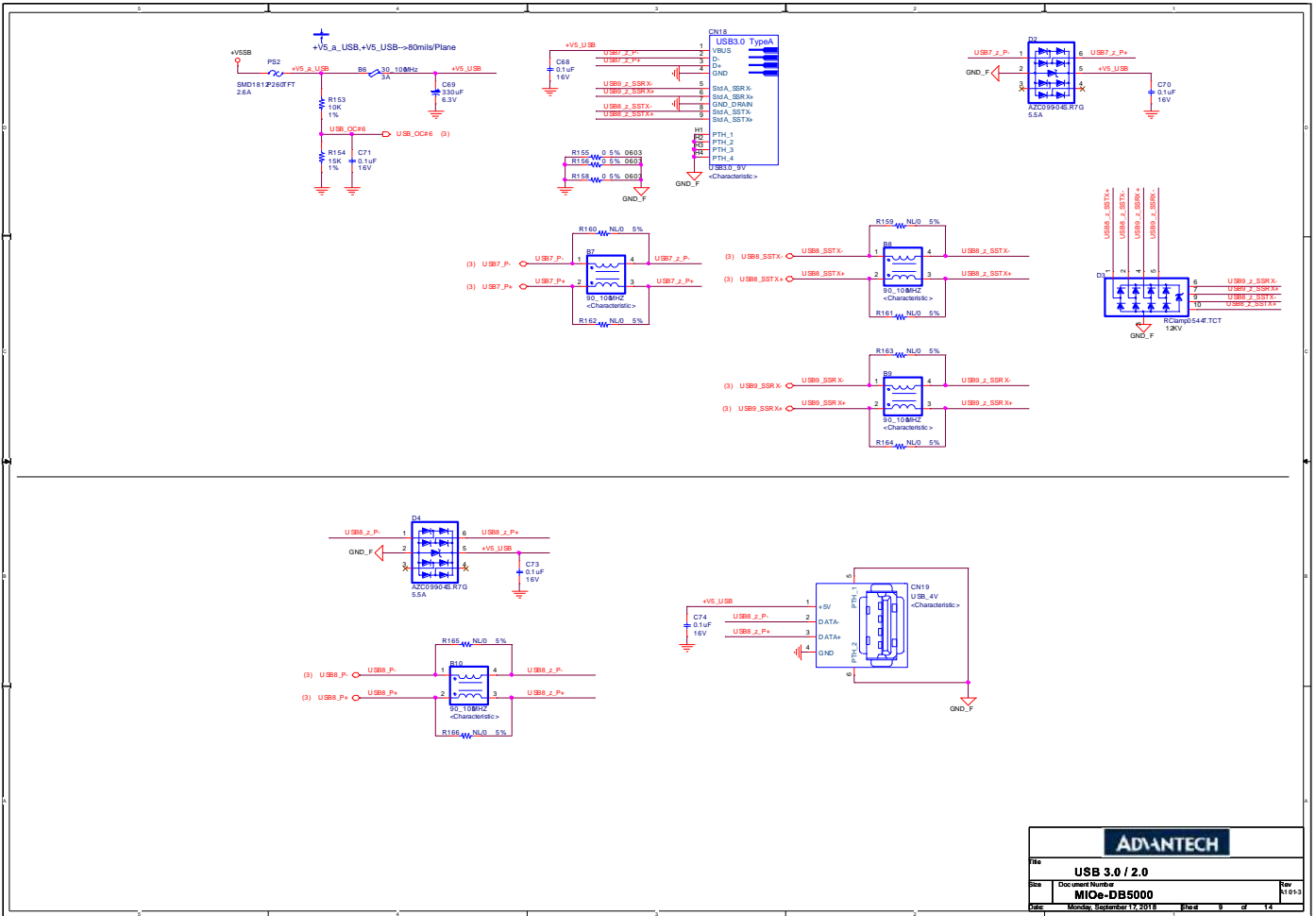
Configuration	Function
1. Stuff R1, R3, R5 and R7 with 0 ohm resistors. 2. Remove R2, R4, R6 and R8	USB 3.0
1. Remove R1, R3, R5 and R7 2. Stuff R2, R4, R6 and R8 with 0 ohm resistors.	USB 2.0

PCB Layout Considerations

Please notice that PCB Layout will be vary depends on design. For layout considerations, please refer to MIOe Design Guide.

Reference Schematic





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Component List

QTY	Description	Reference	Manufacture Part Number	Manufacture
1	CR 15K 1% 1/16W SMD 0402	R154	0402WGF1502TCE	大毅科技股份有限公司 (Ta-I Technology Co., Ltd.)
2	SC 47uF 20% 16V SMD 7.3x4.3x1.9mm 16TQC47M	C94	16TQC47M	東三積體電子股份有限公司
		C97		
2	SC 220uF 20% 6.3V SMD 7.3x4.3x1.8mm 6TPE220M	C92	6TPE220M	三洋電機株式會社 (Sanyo Electric Co Ltd.)
		C93		
7	MLCC X7R 0.1uF 10% 16V SMD 0402	C68	0402B104K160CT	國巨股份有限公司 (Yageo Co.,Ltd.)
		C70		
		C71		
		C73		
		C74		
		C89		
		C90		
1	SC 330uF 20% 6.3V SMD 7.3x4.3x1.8mm 6TPE330MAP	C69	6TPE330MAP	三洋電機株式會社 (Sanyo Electric Co Ltd.)
1	Bead 30ohm 25% 3A SMD 0805 BLM21PG300SN1D	B6	BLM21PG300SN1D	台灣村田股份有限公司 (Taiwan Murata Electronics Co., Ltd.)
4	Inductor Common-MODE FILTER ACM2012-900-2P SMD	B7	ACM2012-900 -2P-T002	台灣東電化股份有限公司 (TDK Taiwan Corporation)
		B8		
		B9		
		B10		
1	Polyswitch 2.6A 8V SMD 1812 SMD1812P260TFT	PS2	SMD1812P260TFT	聚鼎科技股份有限公司 (Polytronics Technology Corporation)
2	DIODE AZC099-04S.R7G 6V SMD SOT23-6L	D2	AZC099-04S.R7G	晶焱科技股份有限公司 (Amazing)
		D4		
1	TVS RClamp0544T.TCT 5A 12KV 75W SMD SLP2010P8T	D3	RClamp0544T.TCT	瑞士商陸特股份有限公司 (Semtech International Ag)
1	CR 10K 1% 1/16W SMD 0402	R153	0402WGF1002TCE	厚聲電子工業有限公司 (Uniroyal Electronics Industry Co.,Ltd.)

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24	CR 0 5% 1/16W SMD 0402	R1	0402WGJ0000TCE	厚聲電子工業有限公司 (Uniroyal Electronics Industry Co.,Ltd.)
		R2		
		R3		
		R4		
		R5		
		R6		
		R7		
		R8		
		R159		
		R160		
		R161		
		R162		
		R163		
		R164		
		R165		
		R166		
3	CR 0 5% 1/10W SMD 0603	R155	0603WAJ0000T5E	厚聲電子工業有限公司 (Uniroyal Electronics Industry Co.,Ltd.)
		R156		
		R158		
1	IC SN74LVC1G125DCKR SMD SC-70 5P	U2	SN74LVC1G125 DCKJ	德州儀器工業股份有限公司 (Texas Instruments Incorporated)
1	IC SMD SN74AHC1G125DBVR SOT-23 5P 3.05*1.75*1.3	U12	SN74AHC1G125 DBVR	德州儀器工業股份有限公司 (Texas Instruments Incorporated)
4	PIN HEADER 3x1P 2.54mm 180D(M) DIP 205-1x3GS	J1	21N12564- 03S10B-01G-6/3	何迪企業股份有限公司 (Ho-Base Technology Co.,Ltd.)
		J4		
		J5		
		J6		

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1	USB CONN. 4P 2.0mm 180D(F) DIP UB0112C-4FK1-4	CN19	UB0112C-4FK1-4F	鴻海精密工業股份有限公司 (Foxconn Electronics Inc.)
1	USB CONN. 9P 2.0mm 180D(F) DIP UEA0112C-4FH1-4F	CN18	UEA0112C-4FH1-4F	鴻海精密工業股份有限公司 (Foxconn Electronics Inc.)
1	ATX PWR CONN. 2x2P 4.2mm 180D(M) DIP 24W4310-04S	CN16	24W4310-04S10-01T	致威電子公司 (Jih Vei Electronics Co., Ltd.)
1	MIOE Connector	CN1	QTE-040-05-L-D-A	Samtec U.S.A.

Other Remarks

This document provides a reference on hardware design only. For other support or resource such as Firmware or other utilities, please contact your local agent.