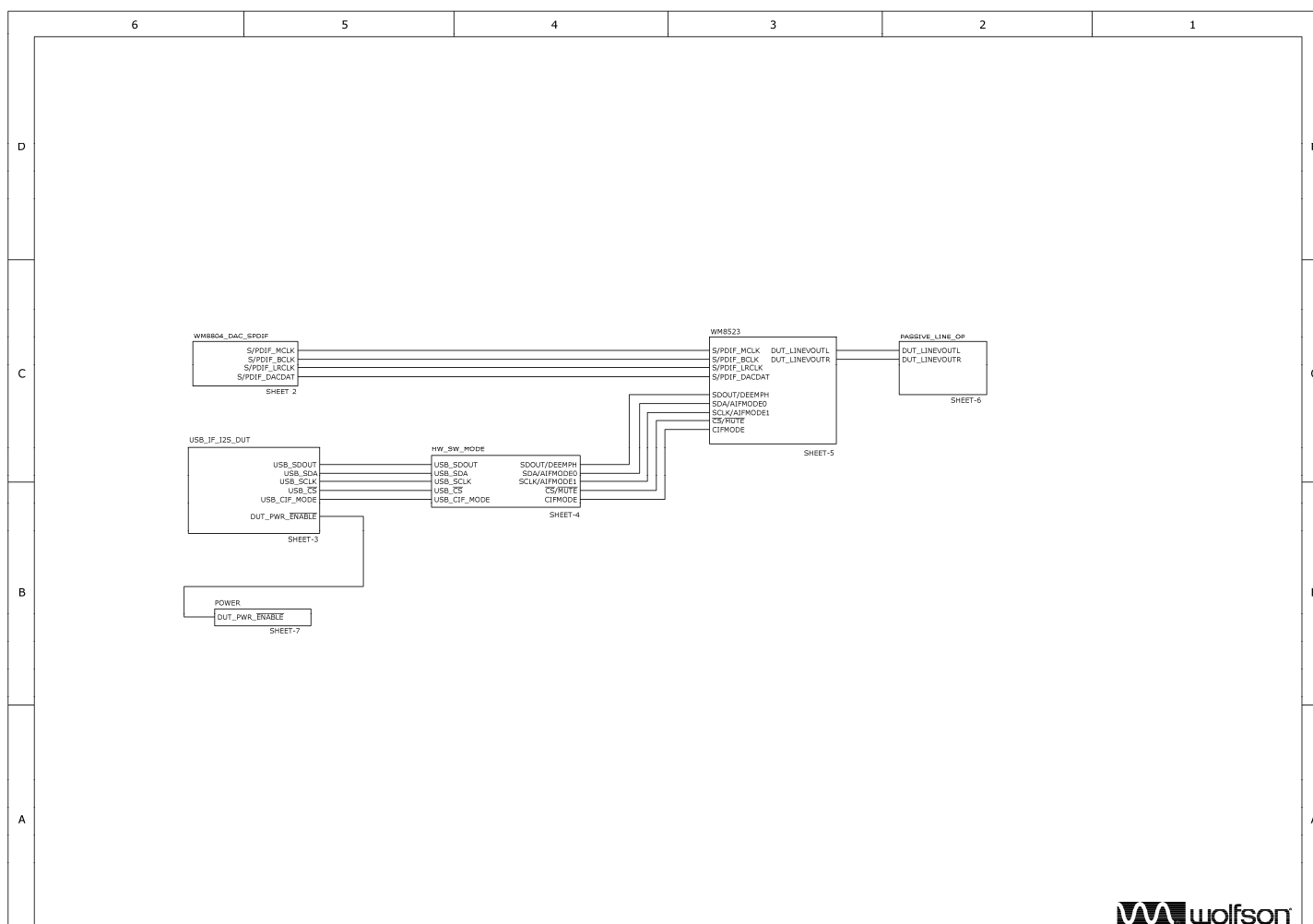


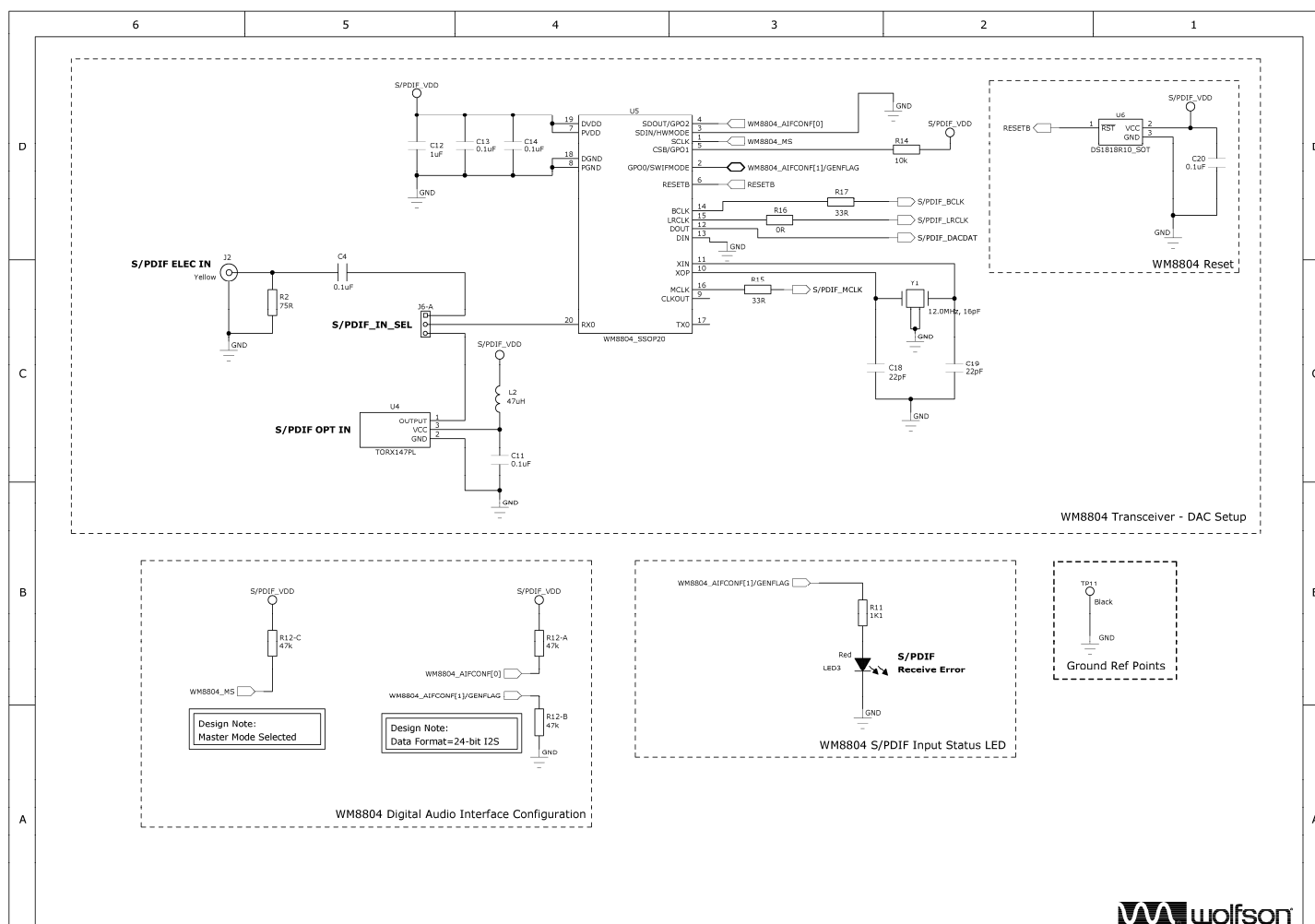
DOC TYPE:	SCHEMATIC AND LAYOUT
BOARD REFERENCE:	WM8523-6228-DT20-EV1
BOARD TYPE:	Customer Standalone Board
WOLFSON DEVICE(S):	WM8523
DATE:	September 2009
DOC REVISION:	Rev 1.0

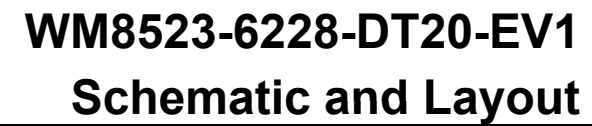
SCHEMATIC

Sheet 1: Main Schematic

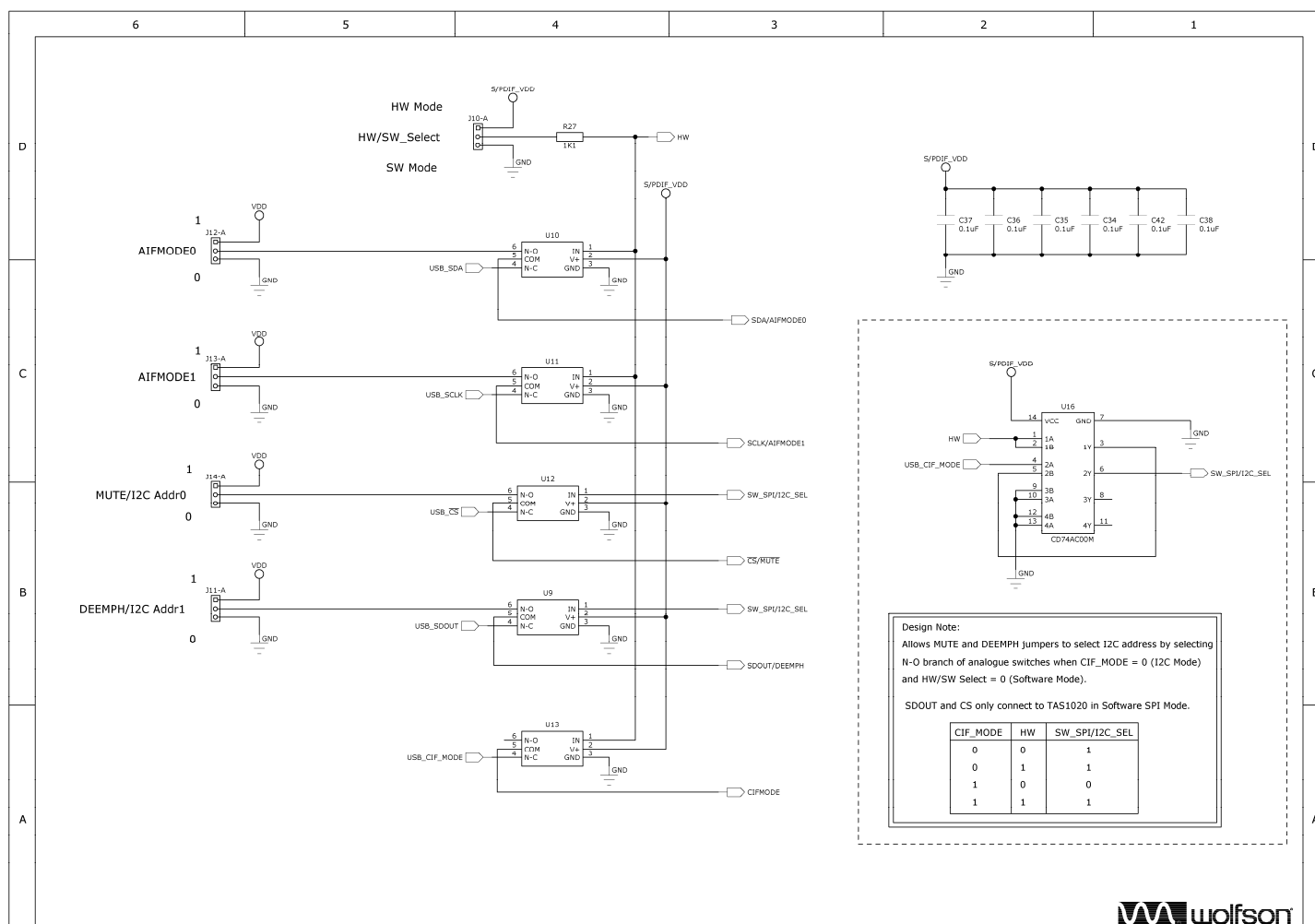


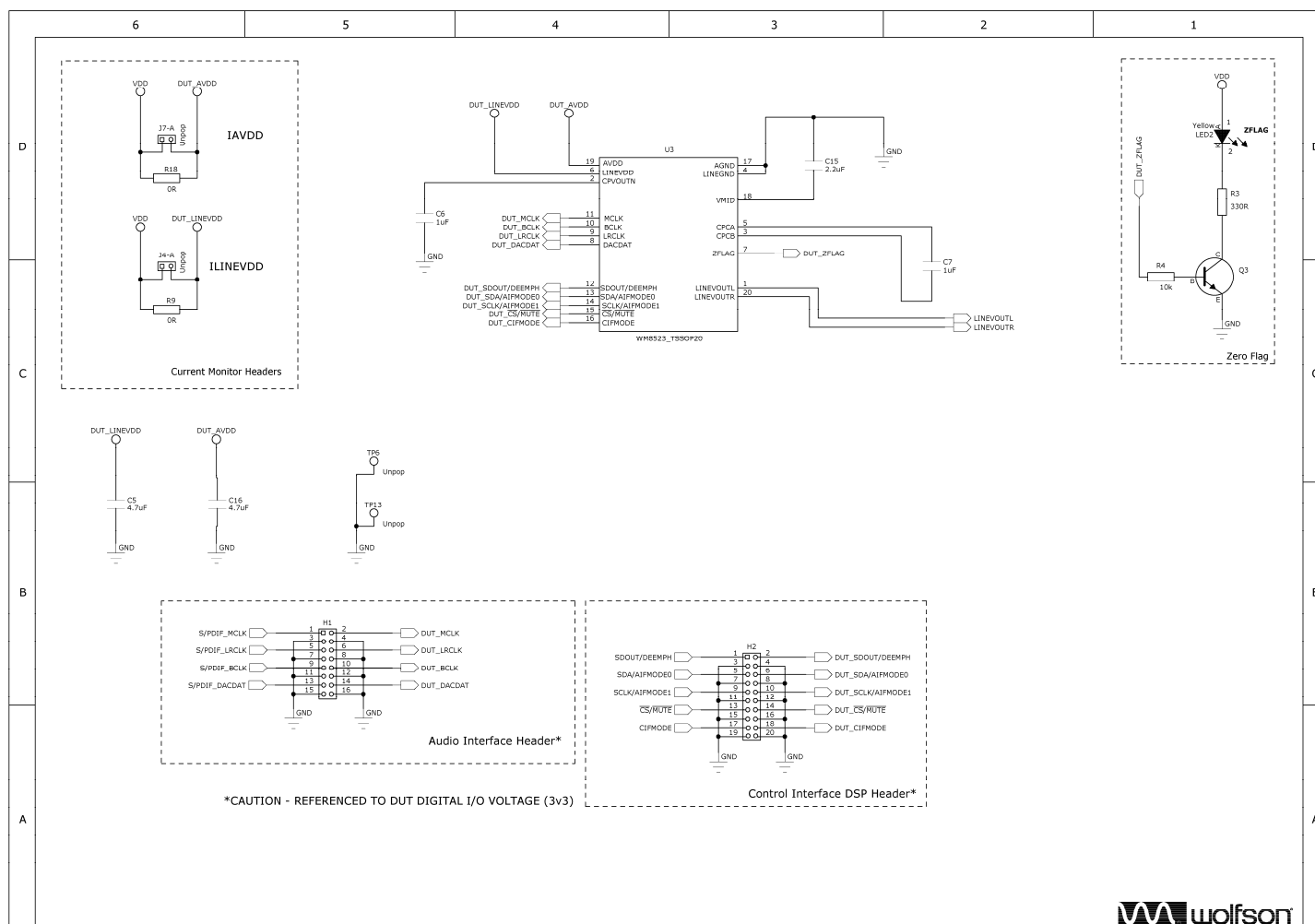
Sheet 2: S/PDIF Interface

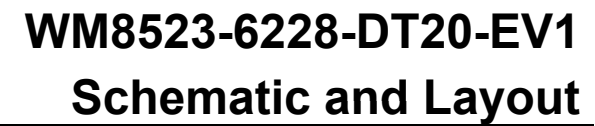


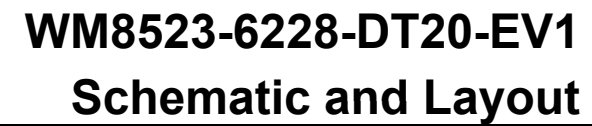
[illegible]

Sheet 4: Hardware / Software Select





[illegible]

[illegible]

Sheet 8: Jumper Settings

	6	5	4	3	2	1													
D	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Short 1-2</th> <th style="width: 33%;">Short 2-3</th> </tr> <tr> <td>J3-B EXT</td> <td>USB</td> </tr> <tr> <td colspan="2">PCB Ref: +5V_SEL</td> </tr> </table>		Short 1-2	Short 2-3	J3-B EXT	USB	PCB Ref: +5V_SEL		LNK_J3 RED Fit to J3:2-3		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Short 1-2</th> <th style="width: 33%;">Short 2-3</th> </tr> <tr> <td>J10-B HW Mode</td> <td>SW Mode</td> </tr> <tr> <td colspan="2">PCB Ref: HW/SW_Select</td> </tr> </table>		Short 1-2	Short 2-3	J10-B HW Mode	SW Mode	PCB Ref: HW/SW_Select		LNK_J10 YELLOW Fit to J10:1-2
Short 1-2	Short 2-3																		
J3-B EXT	USB																		
PCB Ref: +5V_SEL																			
Short 1-2	Short 2-3																		
J10-B HW Mode	SW Mode																		
PCB Ref: HW/SW_Select																			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Short 1-2</th> <th style="width: 33%;">Short 2-3</th> </tr> <tr> <td>J6-B Electrical Input</td> <td>Optical Input</td> </tr> <tr> <td colspan="2">PCB Ref: S/POIF_IN_SEL</td> </tr> </table>		Short 1-2	Short 2-3	J6-B Electrical Input	Optical Input	PCB Ref: S/POIF_IN_SEL		LNK_J6 YELLOW Fit to J6:1-2		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Short 1-2</th> <th style="width: 33%;">Short 2-3</th> </tr> <tr> <td>J12-B 1</td> <td>0</td> </tr> <tr> <td colspan="2">PCB Ref: AIFMODE0</td> </tr> </table>		Short 1-2	Short 2-3	J12-B 1	0	PCB Ref: AIFMODE0		LNK_J12 YELLOW Fit to J12:1-2
Short 1-2	Short 2-3																		
J6-B Electrical Input	Optical Input																		
PCB Ref: S/POIF_IN_SEL																			
Short 1-2	Short 2-3																		
J12-B 1	0																		
PCB Ref: AIFMODE0																			
C			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Short 1-2</th> <th style="width: 33%;">Short 2-3</th> </tr> <tr> <td>J13-B 1</td> <td>0</td> </tr> <tr> <td colspan="2">PCB Ref: AIFMODE1</td> </tr> </table>		Short 1-2	Short 2-3	J13-B 1	0	PCB Ref: AIFMODE1		LNK_J13 YELLOW Fit to J13:2-3		LNK_J14 YELLOW Fit to J14:1-2						
Short 1-2	Short 2-3																		
J13-B 1	0																		
PCB Ref: AIFMODE1																			
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Short 1-2</th> <th style="width: 33%;">Short 2-3</th> </tr> <tr> <td>J14-B 1</td> <td>0</td> </tr> <tr> <td colspan="2">PCB Ref: MUTE/I2C Addr0</td> </tr> </table>		Short 1-2	Short 2-3	J14-B 1	0	PCB Ref: MUTE/I2C Addr0		LNK_J11 YELLOW Fit to J11:2-3								
Short 1-2	Short 2-3																		
J14-B 1	0																		
PCB Ref: MUTE/I2C Addr0																			
B	Default: USB Power, DUT Slave, Electrical S/POIF, HW Mode, I2S Format, NO DEEMPH, NO MUTE, Filtered Output : When HW/SW_Select = SW Mode, default I2C address = 36																		
A																			

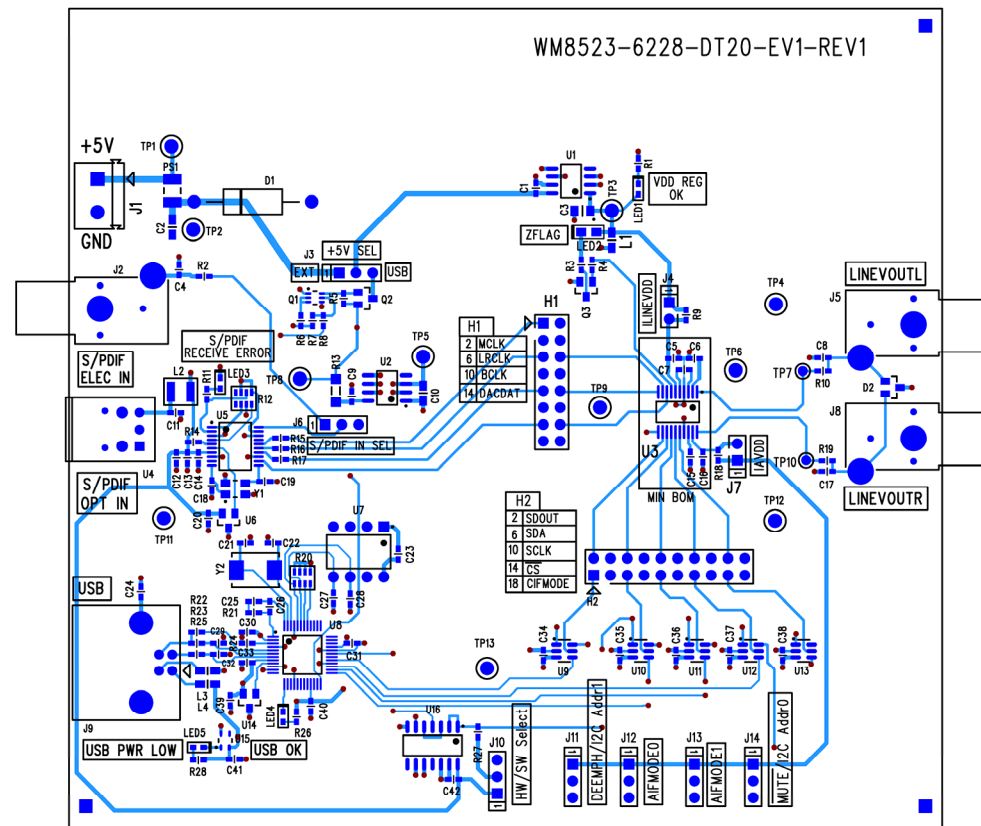
BILL OF MATERIALS (BOM)

<i>Item</i>	<i>RefDes</i>	<i>Description</i>	<i>Manufacturer</i>	<i>Manufacturer's Part Number</i>
1	U8	USB Streaming Controller	Texas Instruments	TAS1020BPFB
2	C15	2.2uF 0603 SMD Ceramic Capacitor 10V X5R	MuRata	GRM188R61A225KE34D
3	C10	10uF 0805 SMD Ceramic Capacitor 6.3V X5R	MuRata	GRM21BR60J106KE19L
4	C5 C16	4.7uF 0603 SMD Ceramic Capacitor 6.3V X5R	MuRata	GRM188R60J475KE19D
5	C21 C22	27pF 0603 SMD Ceramic Capacitor 50V NPO	Panasonic	ECJ-1VC1H270J
6	J2	Phono Socket PCB mount YELLOW	Dragon City	RS109 - Yellow
7	J8	Phono Socket PCB mount RED	Dragon City	RS-109 Red
8	J5	Phono Socket PCB mount WHITE	Dragon City	RS-109 White
9	MISC2	Lead-free label, 15mm round	Brady	Y436425
10	H1	2x8 2.54mm pitch PCB Pin Header VERTICAL	Harwin	M20-9980845
11	H2	2x10 2.54mm pitch PCB Pin Header VERTICAL	Harwin	M20-9981045
12	J3 J6 J10 J11 J12 J13 J14	1x3 2.54mm Header Vertical	Harwin	M20-9990345
13	Q1	BC847BS NPN Dual Bipolar Transistor SOT363	Philips	BC847BS
14	J9	USB receptacle Type B	FCI	61729-0010BLF
15	U16	Quad 2 I/P NAND Gate	Texas Instruments	CD74AC00M
16	MECH1	IC Socket DIL 8 WAY	Multicomp	2227MC-08-03-F1
17	MECH2	Feet black 12.7sq self-adhesive 40 pack - qty 4	3M	SJ5018BLACK
18	J1	PCB mount 1X2 terminal block for 2.5mm wire guage	LUMBERG	KRM 02
19	L1 L3 L4	300R 0805 BMB2A Ferrite Bead	Meggitt	BMB2A0300AN1
20	L2	47uH 1210 Surface Mount Inductor 'PA series'	Panasonic	ELJPA470KF
21	U4	TORX147PL Digital Audio Fiber Optic Receiver	Toshiba	TORX147PL
22	PS1	0.75A Poly Switch 1210	Raychem	MICROSMD075F-2
23	U9 U10 U11 U12 U13	Low Voltage Single Supply Analog Switch	Analog Devices	ADG719BRTZ-500RL7
24	C6 C7	1uF 0603 SMD Ceramic Capacitor 16V X7R	Phycomp	225524615663
25	C8 C17	15nF 0603 SMD Ceramic Capacitor 25V NPO	Kemet	C0603C153J3GAC 7867
26	C3	220uF 4V SMD Tantalum Capacitor case P	Vishay	298D227X0004P2T
27	R13	1R50 1206 SMD chip resistor 5% 0.25W	Vishay	2312 1551 1508
28	C1 C4 C9 C11 C13 C14 C20 C23 C30 C31 C33 C34 C35 C36 C37 C38 C39 C40 C41 C42	0.1uF 0603 SMD Ceramic Capacitor 16V X7R	Phycomp	2238 786 15649
29	C29 C32	47pF 0603 SMD Ceramic Capacitor 50V NPO	AVX	06035A470JAT2A

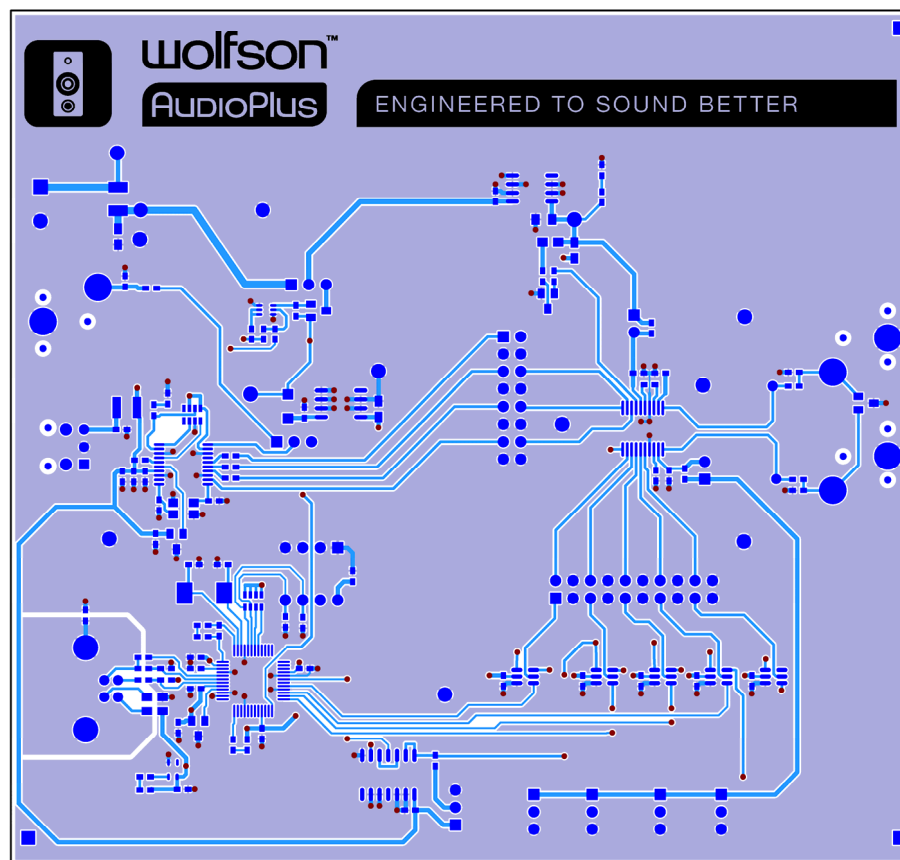
<i>Item</i>	<i>RefDes</i>	<i>Description</i>	<i>Manufacturer</i>	<i>Manufacturer's Part Number</i>
30	C27 C28	220pF 0603 SMD Ceramic Capacitor 50V NPO	AVX	06035A221JAT2A
31	C18 C19	22pF 0603 SMD Ceramic Capacitor 50V NPO	Phycomp	2238 867 15229
32	C24	0.01uF 0603 SMD Ceramic Capacitor 50V X7R	Phycomp	2238 586 15636
33	LED1 LED4	KP-1608MGC 0603 SMD Chip LED GREEN	Kingbright	KP-1608MGC
34	LED3 LED5	KP-1608SURC 0603 SMD Chip LED RED	Kingbright	KP-1608SURC
35	TP4 TP5 TP9 TP11 TP12	1.32mm PCB Test Terminal BLACK	Vero	20-2136
36	TP3 TP8	1.32mm PCB Test Terminal RED	Vero	20-313141
37	C2	4.7uF 0805 SMD Ceramic Capacitor 16V X5R	Kemet	C0805C475K4PAC
38	R20	10K 1206 SMD chip 4 resistor array 5% 0.063W	Phycomp	2350 03510 103
39	R12	47k 1206 SMD chip 4 resistor array 5% 0.063W	Phycomp	2350 035 10473
40	R4 R6 R8 R14	10k 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 10K
41	R5 R7	100K 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 100K
42	R10 R19	110R 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 110R
43	R1 R11 R26 R27	1K1 0603 SMD chip resistor 1% 0.1W	Multicomp	MC 0.063W 0603 1% 1K1
44	R22	1k5 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 1K5
45	R28	2K4 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 2K4
46	R23 R25	27R 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 27R
47	R21	3K0 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 3K
48	R3	330R 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 330R
49	R15 R17	33R 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 33R
50	R24	47K 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 47K
51	R2	75R 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 1% 75R
52	R9 R16 R18	0R 0603 SMD chip resistor 1% 0.063W	Multicomp	MC 0.063W 0603 0R
53	C26	100pF 0603 SMD Ceramic Capacitor 50V NPO	Multicomp	U0603C101JCT
54	C25	1000pF 0603 SMD Ceramic Capacitor 50V NPO	Multicomp	U0603C102JCT
55	Q2	P-Channel MOSFET 60v, Rds(on) = 0.17R - SOT23	Vishay	SI2309DS
56	D1	1N5341B 6.2V 5W Zener Diode PTH	ON Semiconductor	1N5341BG
57	Q3	BC849B NPN Bipolar Transistor SOT23	ON Semiconductor	BC849BLT1G
58	U6 U14	DS1818 3.3V active-low Power-On-Reset chip SOT	Dallas Semiconductor	DS1818R-10+

<i>Item</i>	<i>RefDes</i>	<i>Description</i>	<i>Manufacturer</i>	<i>Manufacturer's Part Number</i>
59	U1 U2	KF33BD Very Low Drop +3.3V Voltage Regulator SO	ST Microelectronics	KF33BD
60	U7	EEPROM 8x8 i2c interface - with Wolfson "Standard" code	Microchip Technology	24LC64-I/P
61	Y1	XTAL 12MHz 16pF SM GSX-433 Series	Golledge	GSX-433/111DF 12MHz
62	Y2	6.0MHz GSX-752A/351JF SM Crystal 30pF	Golledge	GSX-752A/351JF 6.0MHz
63	LNK_J3	0.1" OPEN JUMPER LINK RED	Protech	22-3565
64	LNK_H2-5 LNK_H2-4 LNK_H1-4 LNK_H1-3 LNK_H2-3 LNK_H1-2 LNK_H2-2 LNK_H1-1 LNK_H2-1 LNK_J6 LNK_J10 LNK_J11 LNK_J12 LNK_J13 LNK_J14	0.1" OPEN JUMPER LINK YELLOW	Protech	22-3570
65	LED2	KP-2012SYC 0805 SMD Chip LED YELLOW	Kingbright	KP-2012SYC
66	C12	1uF 0603 SMD Ceramic Capacitor 6.3V X5R	MuRata	GRM188R60J105KA01D
67	U15	XC61C Low Power Consumption Voltage Detector	Torex	XC61CN4402NRN
68	U3	WM8523 Stereo DAC with integral Charge pump	Wolfson Microelectronics	WM8523
69	PCB1	PCB	Kelan Circuits Ltd	WM8523-6228-DT20-EV1-REV1
70	U5	WM8804 1:1 Digital Interface Transceiver with PLL	Wolfson Microelectronics	WM8804GEDS
Unpop				
71	TP7 TP10	1.0mm PCB Hole test point		
72	J4 J7	1x2 PCB Pin Header 0.1" VERTICAL	Harwin	M20-9990245
73	D2	TVS Diode PESD5V0S2BT V _{wm} =5V dual ESD Protection SOT23	Philips	PESD5V0S2BT
74	TP1 TP2 TP6 TP13	1.32mm off-board connection point	N/A	N/A

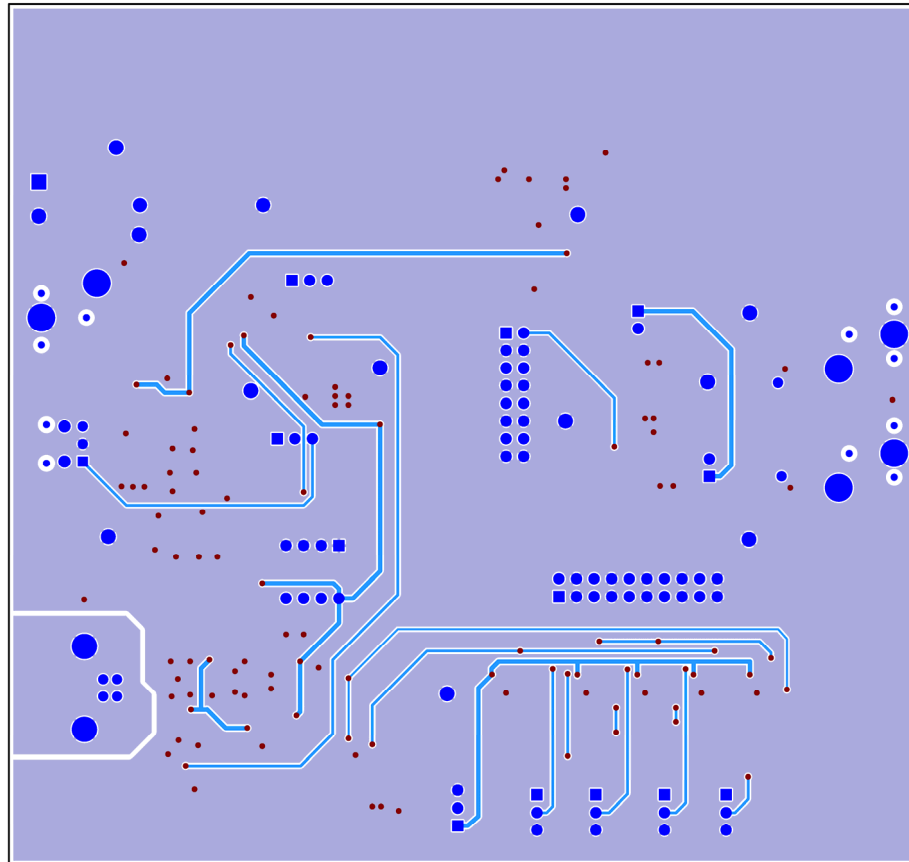
September 2009, Rev 1.0



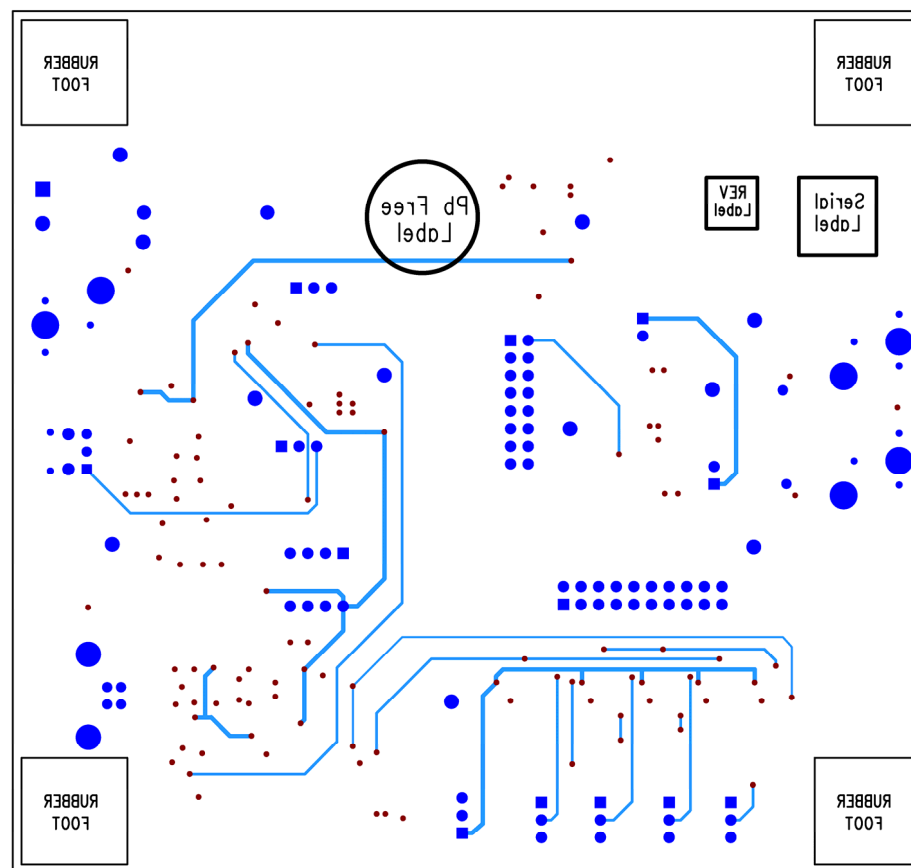
Top Layer: Silkscreen + Copper



Top Layer: Copper



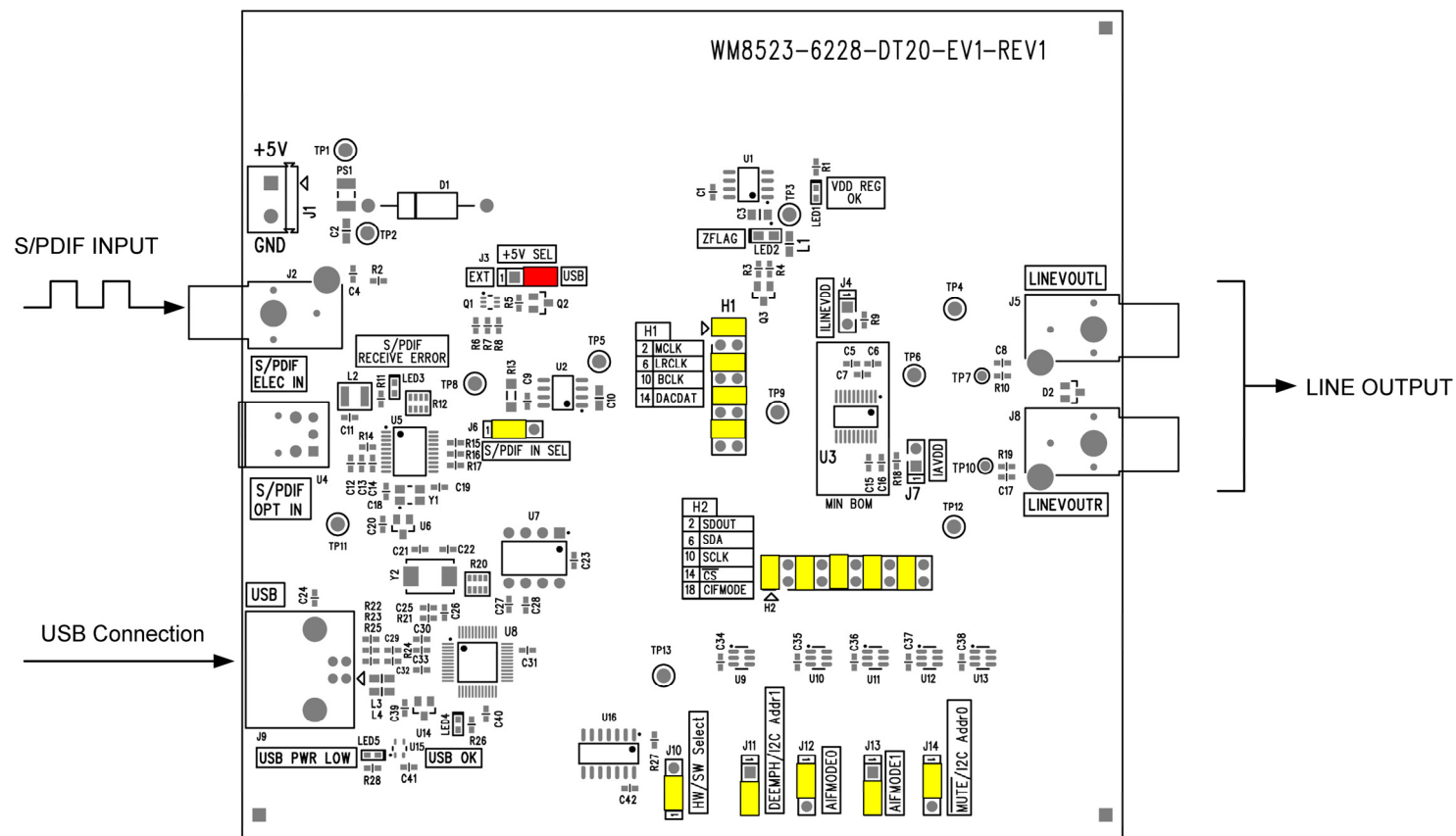
Bottom Layer: Copper



Bottom Layer: Silkscreen + Copper

DEFAULT BOARD CONFIGURATION

USB Power, Electrical S/PDIF, Hardware mode, I2S Format, No DEEMPH, No MUTE



APPLICATION SUPPORT

If you require more information or require technical support, please contact the Wolfson Microelectronics Applications group through the following channels:

Email: apps@wolfsonmicro.com
Telephone Apps: +44 (0) 131 272 7070
Fax: +44 (0) 131 272 7001
Mail: Applications Engineering at the address on the last page

or contact your local Wolfson representative.

Additional information may be made available on our web site at: <http://www.wolfsonmicro.com>

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