Table 13-1 Digital Display Interface

	Pin Name	Type 6 Pin Number	Type 10 Pin Number	DisplayPort	HDMI/DVI (TMDS Signaling)
DDI 1	DDI1_PAIR0+	D26	B71	DP1_LANE0+	TMDS1_DATA2+
	DDI1_PAIR0-	D27	B72	DP1_LANE0-	TMDS1_DATA2-
	DDI1_PAIR1+	D29	B73	DP1_LANE1+	TMDS1_DATA1+
	DDI1_PAIR1-	D30	B74	DP1_LANE1-	TMDS1_DATA1-
	DDI1_PAIR2+	D32	B75	DP1_LANE2+	TMDS1_DATA0+
	DDI1_PAIR2-	D33	B76	DP1_LANE2-	TMDS1_DATA0-
	DDI1_PAIR3+	D36	B81	DP1_LANE3+	TMDS1_CLK+
	DDI1_PAIR3-	D37	B82	DP1_LANE3-	TMDS1_CLK-
	DDI1_HPD	C24	B89	DP1_HPD	HDMI1_HPD
	DDI1_AUX+	D15(1)	B98(1)	DP1_AUX+	
	DDI1_AUX-	D16(1)	B99(1)	DP1_AUX-	
	DDI1_CTRLCLK	D15(1)	B98(1)		HDMI1_CTRLCLK
	DDI1_CTRLDATA	D16(1)	B99(1)		HDMI1_CTRLDATA
	DDI1_DDC_AUX_SEL	D34(1)	B95(1)	Low(1)	High(1)
DDI 2	DDI2_PAIR0+	D39		DP2_LANE0+	TMDS2_DATA2+
	DDI2_PAIR0-	D40		DP2_LANE0-	TMDS2_DATA2-
	DDI2_PAIR1+	D42		DP2_LANE1+	TMDS2_DATA1+
	DDI2_PAIR1-	D43		DP2_LANE1-	TMDS2_DATA1-
	DDI2_PAIR2+	D46		DP2_LANE2+	TMDS2_DATA0+
	DDI2_PAIR2-	D47		DP2_LANE2-	TMDS2_DATA0-
	DDI2_PAIR3+	D49		DP2_LANE3+	TMDS2_CLK+
	DDI2_PAIR3-	D50		DP2_LANE3-	TMDS2_CLK-
	DDI2_HPD	D44		DP2_HPD	HDMI2_HPD
	DDI2_AUX+	C32(1)		DP2_AUX+	
	DDI2_AUX-	C33(1)		DP2_AUX-	
	DDI2_CTRLCLK	C32(1)			HDMI2_CTRLCLK
	DDI2_CTRLDATA	C33(1)			HDMI2_CTRLDATA
	DDI2_DDC_AUX_SEL	C34(1)		Low(1)	High(1)
DDI 3	DDI3_PAIR0+	C39		DP3_LANE0+	TMDS3_DATA2+
	DDI3_PAIR0-	C40		DP3_LANE0-	TMDS3_DATA2-
	DDI3_PAIR1+	C42		DP3_LANE1+	TMDS3_DATA1+
	DDI3_PAIR1-	C43		DP3_LANE1-	TMDS3_DATA1-
	DDI3_PAIR2+	C46		DP3_LANE2+	TMDS3_DATA0+
	DDI3_PAIR2-	C47		DP3_LANE2-	TMDS3_DATA0-
	DDI3_PAIR3+	C49		DP3_LANE3+	TMDS3_CLK+
	DDI3_PAIR3-	C50		DP3_LANE3-	TMDS3_CLK-
	DDI3_HPD	C44		DP3_HPD	HDMI3_HPD
	DDI3_AUX+	C36(1)		DP3_AUX+	
	DDI3_AUX-	C37(1)		DP3_AUX-	
	DDI3_CTRLCLK	C36(1)			HDMI3_CTRLCLK
	DDI3_CTRLDATA	C37(1)			HDMI3_CTRLDATA
	DDI3_DDC_AUX_SEL	C38(1)		Low(1)	High(1)

Note:

1. DDI[1:3]_DDC_AUX_SEL are the signals that select the function of DDI[1:3]_AUX+/ DDI[1:3]_CTRLCLK and DDI[1:3]_AUX-/ DDI[1:3]_CTRLDATA. These pins have 1M pull down to ground on module. If the DDI_DDC_AUX_SEL pin is floating on baseboard, the AUX pair is used for the DP_AUX+/- signals. For HDMI/DVI application, the DDI_DDC_AUX_SEL pin must pull up 100K to +3.3V.

13.2 DDI – Routing Considerations

Table 13-2 DDI Layout Guidelines

Parameter	Trace Louting
Differential Impedance	85 Ω ±15%
Single-End Impedance	50 Ω ±10%
Signal length	3.2 inches
Spacing between pairs-to-pairs (inter-pair)	Min. 15mils
Spacing between differential pairs and high-speed periodic signals	Min. 15mils
Spacing between differential pairs and low-speed non periodic signals	Min. 15mils
Length matching between differential pairs (intra-pair)	Max. 5mils
Length matching between differential pairs (inter-pair)	Max. 1 inch
Reference plane	GND
Via Usage	Max. 2
AC coupling capacitors	100nF

13.3 DDI – Reference Schematics

13.3.1 DVI/HDMI/DisplayPort Example

Figure 13-1 DVI Schematic (1)

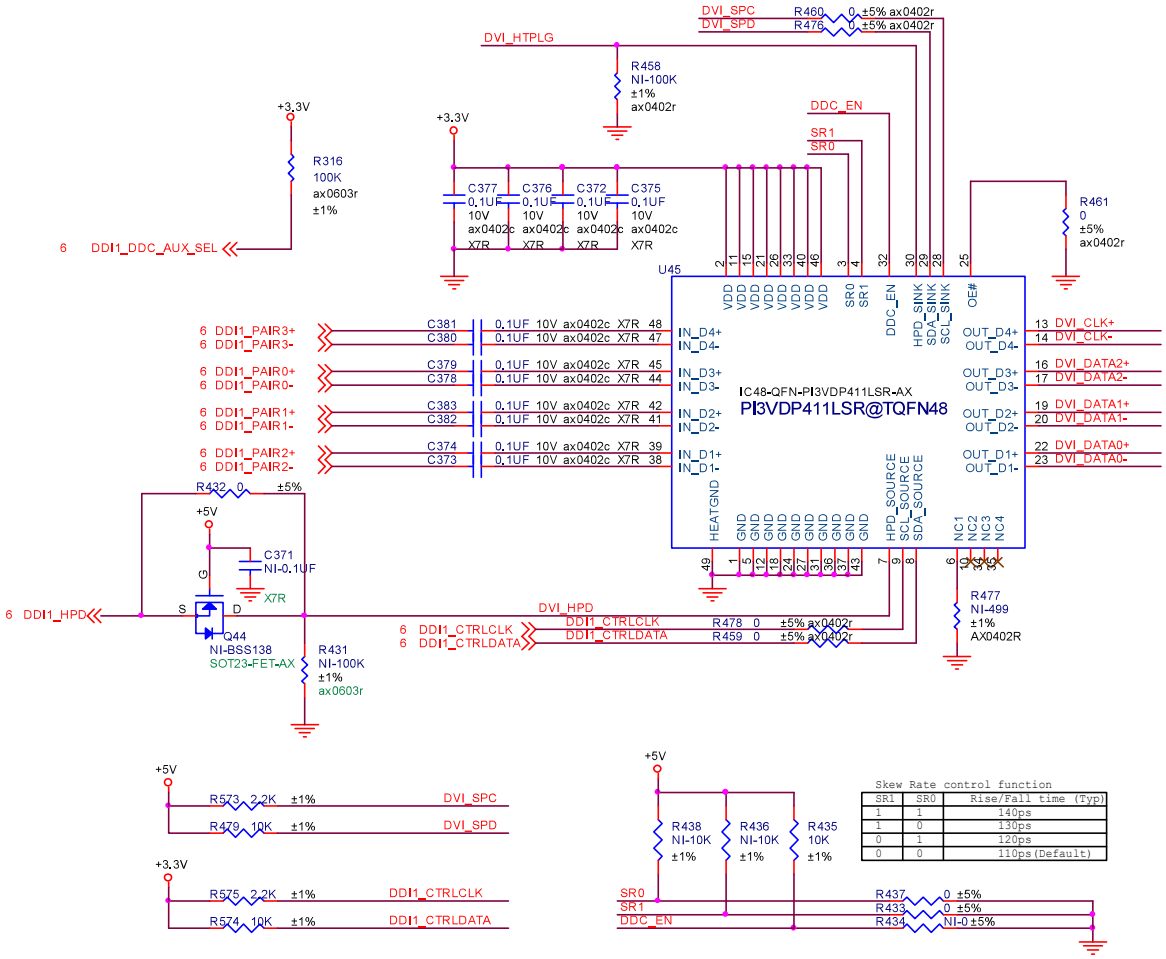

Figure 13-1 DVI Schematic (2)

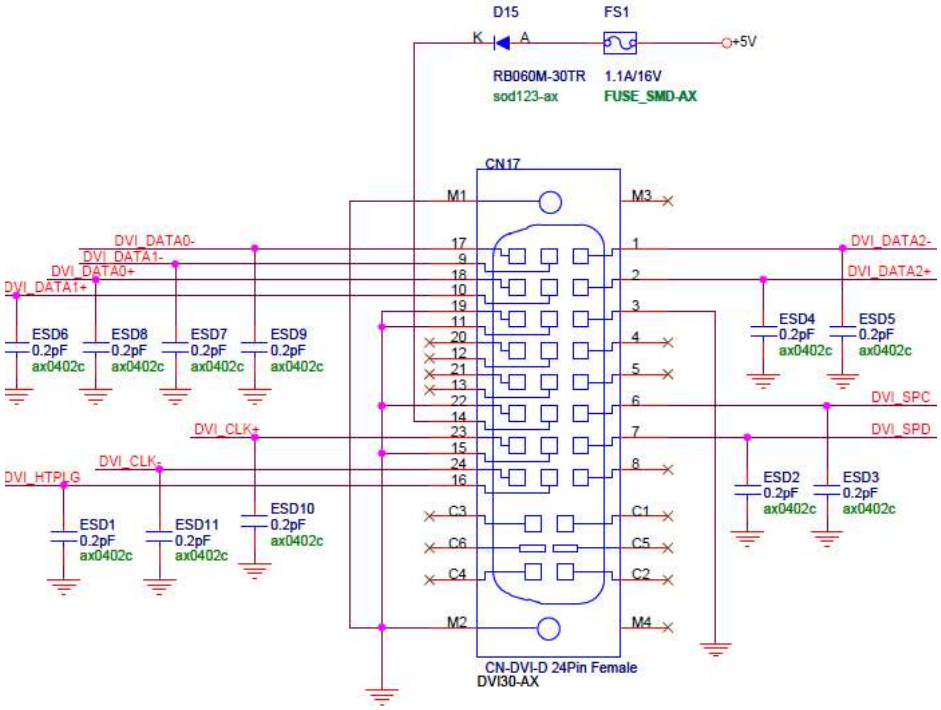

Figure 13-2HDMI Schematic