PICMG® COM.0
COM Express™ Type 7 Preview

Purpose

The information in this document provides a preview of the upcoming PICMG® COM.0 COM Express® Type 7 pinout. The pinout will officially launch with R3.0 of the specification later in 2016. The goal of this document is to provide COM Express module and carrier designers with information on the soon to be released Type 7 pinout so that potential users have the necessary design information.

Note: The information provided is preliminary and subject to change.

Why Type 7?

The current revision of the COM.0 specification was released 4 years ago. The interfaces provided in the existing specification reflect the commonly used chipset interfaces at that time. In the last year there has been an increased interest in higher bandwidth as well as additional Ethernet interfaces. The primary motivation for Type 7 was to add support for two or four 10GbE interfaces.

Type 7

Type 7 is focused on data center applications where high bandwidth Ethernet interfaces are required. Ideally the pins required for the new 10G signals would come from a pool of reserved pins. Unfortunately, the COM.0 pinouts did not have the necessary number of pins available. Since most data center applications are headless, the COM.0 subcommittee made the decision to repurpose the video pins for 10GbE pins. The Type 7 pinout is based on Type 6 with the following changes:

- Removed LVDS, DDI, and VGA graphics interfaces. The pins now provide the 10G signals.
- Removed audio support. These pins are now reserved.
- Removed ExpressCard support. Some of these pins are now reserved.
- Reduced the number of SATA channels from 4 to 2 to gain 2 additional PCIe lanes.
- Reduced the number of USB 2.0 ports from 8 to 4 to gain 4 additional PCIe lanes. Note that all 4 USB ports support USB 3.0.
- Added 8 PCIe lanes for a total of up to 32.
- Added two or four 10GbE interfaces with management sideband signals.
- Added NC-SI interface.
- Added support for IEEE1588.
- Added eSPI interface multiplexed over LPC.

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Module 10GB Ethernet

Gigabit Ethernet	Pin Type	Pwr Rail / Tolerance	Description	PU/PD	Pin Availability
10G_KR_TX[0:3]+ 10G_KR_TX[0:3]-	O KR	AC coupled on Carrier	10GBASE-KR ports, Transmit Output differential pairs		T7
10G_KR_RX[0:3]+ 10G_KR_RX[0:3]-	I KR	AC coupled on Module	10GBASE-KR ports, Receive Input differential pairs		T7
10G_PHY_MDIO_SDA[0:3]	O	3.3V Suspend / 3.3V	**MDIO Mode** Management Data I/O Interface mode data signal for serial data transfers between the MAC and an external PHY		T7
	I/O OD	3.3V Suspend / 3.3V	**I²C Mode** I²C Data signal, of the 2-wire management interface used for serial data transfers between the MAC and an external PHY	PU 2K2	T7
10G_PHY_MDC_SCL[0:3]	O	3.3V Suspend / 3.3V	**MDIO Mode** Management Data I/O Interface mode clock signal for serial data transfers between the MAC and an external PHY		T7
	I/O OD	3.3V Suspend / 3.3V	**I²C Mode** I²C Clock signal, of the 2-wire management interface used for serial data transfers between the MAC and an external PHY	PU 2K2	T7
10G_SFP_SDA[0:3]	I/O OD	3.3V Suspend / 3.3V	I2C data signal of the 2-wire management interface used by the 10GbE controller to access the management registers of an external Optical SFP module.	PU 2K2	T7
10G_SFP_SCL[0:3]	I/O OD	3.3V Suspend / 3.3V	I2C clock signal of the 2-wire management interface used by the 10GbE controller to access the management registers of an external Optical SFP module	PU 2K2	T7
10G_LED_SDA	I/O OD	3.3V Suspend / 3.3V	I2C Data,of the 2-wire interface that transfers all LED signals and additional Strapping Signal for I2C or MDIO mode of the Optical PHY	PU 2K2	T7
10G_LED_SCL	I/O OD	3.3V Suspend / 3.3V	I2C Clock,of the 2-wire interface that transfers all LED signals and additional Strapping Signal for I2C or MDIO mode of the Optical PHY	PU 2K2	T7
10G_INT[0:3]	I	3.3V Suspend / 3.3V	Interrupt pin from Copper PHY or Optical SFP module to the 10GbE Controller	PU 2K2	T7
10G_SDP[0:3]	I/O	3.3V Suspend / 3.3V	Software-Definable Pins. Can also be used for IEEE1588 support such as 1pps signal		T7
10G_PHY_SEL_01	I	3.3V Suspend / 3.3V	Input signal that declares if the carrier board is equipped with a Copper or Optical PHY on port 0 and port1. Default state is MDIO mode. For I2C mode pull down with 1K on carrier	PU 10K	T7
10G_PHY_SEL_23	I	3.3V Suspend / 3.3V	Input signal that declares if the carrier board is equipped with a Copper or Optical PHY on port 2 and port 3. Default state is MDIO mode. For I2C mode pull down with 1K on carrier	PU 10K	T7
10G_PHY_RST_01	O	3.3V Suspend / 3.3V	Output signal that resets an Optical PHY on port 0 and port1 (with Copper PHY this signal is not used)		T7
10G_PHY_RST_23	O	3.3V Suspend / 3.3V	Output signal that resets an Optical PHY on port 2 and port 3 (with Copper PHY this signal is not used)		T7

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Gigabit Ethernet	Pin Type	Pwr Rail / Tolerance	Description	PU/PD	Pin Availability
NCSI_CLK_IN	I	3.3V Suspend / 3.3V	Clock reference for receive, transmit, and control interface (PD 10K on carrier when NC-SI is not used on carrier)		T7
NCSI_RXD[0:1]	O	3.3V Suspend / 3.3V	Receive Data (from NC to BMC)		T7
NCSI_TXD[0:1]	I	3.3V Suspend / 3.3V	Transmit Data (from BMC to NC) (PD 10K on carrier when NC-SI is not used on carrier)		T7
NCSI_CRS_DV	O	3.3V Suspend / 3.3V	Carrier Sense/Receive Data Valid to NC, indicating that the transmitted data from NC to BMC is valid		T7
NCSI_TX_EN	I	3.3V Suspend / 3.3V	Transmit enable (PD 10K on carrier when NC-SI is not used on carrier)		T7
NCSI_RX_ER	O	3.3V Suspend / 3.3V	Receive error		T7
NCSI_ARB_IN	I	3.3V Suspend / 3.3V	Network Controller hardware arbitration Input		T7
NCSI_ARB_OUT	O	3.3V Suspend / 3.3V	Network Controller hardware arbitration output		T7

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Proposed Type 7 Pin-Out

Pin	Row A	Row B	Row C	Row D
1	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
2	GBE0_MDI3-	GBE0_ACT#	GND	GND
3	GBE0_MDI3+	LPC_FRAME# / ESPI_CS0#	USB_SSRX0-	USB_SSTX0-
4	GBE0_LINK100#	LPC_AD0 / ESPI_IO_0	USB_SSRX0+	USB_SSTX0+
5	GBE0_LINK1000#	LPC_AD1 / ESPI_IO_1	GND	GND
6	GBE0_MDI2-	LPC_AD2 / ESPI_IO_2	USB_SSRX1-	USB_SSTX1-
7	GBE0_MDI2+	LPC_AD3 / ESPI_IO_3	USB_SSRX1+	USB_SSTX1+
8	GBE0_LINK#	LPC_DRQ0# / ESPI_ALERT0#	GND	GND
9	GBE0_MDI1-	LPC_DRQ1# / ESPI_ALERT1#	USB_SSRX2-	USB_SSTX2-
10	GBE0_MDI1+	LPC_CLK / ESPI_CK	USB_SSRX2+	USB_SSTX2+
11	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
12	GBE0_MDI0-	PWRBTN#	USB_SSRX3-	USB_SSTX3-
13	GBE0_MDI0+	SMB_CK	USB_SSRX3+	USB_SSTX3+
14	GBE0_CTREF	SMB_DAT	GND	GND
15	SUS_S3#	SMB_ALERT#	10G_PHY_MDC_SCL3	10G_PHY_MDIO_SDA3
16	SATA0_TX+	SATA1_TX+	10G_PHY_MDC_SCL2	10G_PHY_MDIO_SDA2
17	SATA0_TX-	SATA1_TX-	10G_SDP2	10G_SDP3
18	SUS_S4#	SUS_STAT# / ESPI_RESET#	GND	GND
19	SATA0_RX+	SATA1_RX+	PCIE_RX6+	PCIE_TX6+
20	SATA0_RX-	SATA1_RX-	PCIE_RX6-	PCIE_TX6-
21	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
22	PCIE_TX15+	PCIE_RX15+	PCIE_RX7+	PCIE_TX7+
23	PCIE_TX15-	PCIE_RX15-	PCIE_RX7-	PCIE_TX7-
24	SUS_S5#	PWR_OK	10G_INT2	10G_INT3
25	PCIE_TX14+	PCIE_RX14+	GND	GND
26	PCIE_TX14-	PCIE_RX14-	10G_KR_RX3+	10G_KR_TX3+
27	BATLOW#	WDT	10G_KR_RX3-	10G_KR_TX3-
28	(S)ATA_ACT#	RSVD	GND	GND
29	RSVD	RSVD	10G_KR_RX2+	10G_KR_TX2+
30	RSVD	RSVD	10G_KR_RX2-	10G_KR_TX2-
31	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
32	RSVD	SPKR	10G_SFP_SDA3	10G_SFP_SCL3
33	RSVD	I2C_CK	10G_SFP_SDA2	10G_SFP_SCL2
34	BIOS_DIS0# / ESPI_SAFS	I2C_DAT	10G_PHY_RST_23	10G_PHY_SEL_23
35	THRMTRIP#	THRM#	10G_PHY_RST_01	10G_PHY_SEL_01
36	PCIE_TX13+	PCIE_RX13+	10G_LED_SDA	RSVD

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Pin	Row A	Row B	Row C	Row D
37	PCIE_TX13-	PCIE_RX13-	10G_LED_SCL	RSVD
38	GND	GND	10G_SFP_SDA1	10G_SFP_SCL1
39	PCIE_TX12+	PCIE_RX12+	10G_SFP_SDA0	10G_SFP_SCL0
40	PCIE_TX12-	PCIE_RX12-	10G_SDP0	10G_SDP1
41	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
42	USB2-	USB3-	10G_KR_RX1+	10G_KR_TX1+
43	USB2+	USB3+	10G_KR_RX1-	10G_KR_TX1-
44	USB_2_3_OC#	USB_0_1_OC#	GND	GND
45	USB0-	USB1-	10G_PHY_MDC_SCL1	10G_PHY_MDIO_SDA1
46	USB0+	USB1+	10G_PHY_MDC_SCL0	10G_PHY_MDIO_SDA0
47	VCC_RTC	ESPI_EN	10G_INT0	10G_INT1
48	RSVD	RSVD	GND	GND
49	RSVD	SYS_RESET#	10G_KR_RX0+	10G_KR_TX0+
50	LPC_SERIRQ / ESPI_CS1#	CB_RESET#	10G_KR_RX0-	10G_KR_TX0-
51	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
52	PCIE_TX5+	PCIE_RX5+	PCIE_RX16+	PCIE_TX16+
53	PCIE_TX5-	PCIE_RX5-	PCIE_RX16-	PCIE_TX16-
54	GPI0	GPO1	TYPE0#	RSVD
55	PCIE_TX4+	PCIE_RX4+	PCIE_RX17+	PCIE_TX17+
56	PCIE_TX4-	PCIE_RX4-	PCIE_RX17-	PCIE_TX17-
57	GND	GPO2	TYPE1#	TYPE2#
58	PCIE_TX3+	PCIE_RX3+	PCIE_RX18+	PCIE_TX18+
59	PCIE_TX3-	PCIE_RX3-	PCIE_RX18-	PCIE_TX18-
60	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
61	PCIE_TX2+	PCIE_RX2+	PCIE_RX19+	PCIE_TX19+
62	PCIE_TX2-	PCIE_RX2-	PCIE_RX19-	PCIE_TX19-
63	GPI1	GPO3	RSVD	RSVD
64	PCIE_TX1+	PCIE_RX1+	RSVD	RSVD
65	PCIE_TX1-	PCIE_RX1-	PCIE_RX20+	PCIE_TX20+
66	GND	WAKE0#	PCIE_RX20-	PCIE_TX20-
67	GPI2	WAKE1#	RSVD	GND
68	PCIE_TX0+	PCIE_RX0+	PCIE_RX21+	PCIE_TX21+
69	PCIE_TX0-	PCIE_RX0-	PCIE_RX21-	PCIE_TX21-
70	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
71	PCIE_TX8+	PCIE_RX8+	PCIE_RX22+	PCIE_TX22+
72	PCIE_TX8-	PCIE_RX8-	PCIE_RX22-	PCIE_TX22-
73	GND	GND	GND	GND
74	PCIE_TX9+	PCIE_RX9+	PCIE_RX23+	PCIE_TX23+
75	PCIE_TX9-	PCIE_RX9-	PCIE_RX23-	PCIE_TX23-

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Pin	Row A	Row B	Row C	Row D
76	GND	GND	GND	GND
77	PCIE_TX10+	PCIE_RX10+	RSVD	RSVD
78	PCIE_TX10-	PCIE_RX10-	PCIE_RX24+	PCIE_TX24+
79	GND	GND	PCIE_RX24-	PCIE_TX24-
80	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
81	PCIE_TX11+	PCIE_RX11+	PCIE_RX25+	PCIE_TX25+
82	PCIE_TX11-	PCIE_RX11-	PCIE_RX25-	PCIE_TX25-
83	GND	GND	RSVD	RSVD
84	NCSI_TX_EN	VCC_5V_SBY	GND	GND
85	GPI3	VCC_5V_SBY	PCIE_RX26+	PCIE_TX26+
86	RSVD	VCC_5V_SBY	PCIE_RX26-	PCIE_TX26-
87	RSVD	VCC_5V_SBY	GND	GND
88	PCIE_CK_REF+	BIOS_DIS1# / ESPI_BBS	PCIE_RX27+	PCIE_TX27+
89	PCIE_CK_REF-	NCSI_RX_ER	PCIE_RX27-	PCIE_TX27-
90	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
91	SPI_POWER	NCSI_CLK_IN	PCIE_RX28+	PCIE_TX28+
92	SPI_MISO	NCSI_RXD1	PCIE_RX28-	PCIE_TX28-
93	GPO0	NCSI_RXD0	GND	GND
94	SPI_CLK	NCSI_CRS_DV	PCIE_RX29+	PCIE_TX29+
95	SPI_MOSI	NCSI_TXD1	PCIE_RX29-	PCIE_TX29-
96	TPM_PP	NCSI_TXD0	GND	GND
97	TYPE10#	SPI_CS#	RSVD	RSVD
98	SER0_TX	NCSI_ARB_IN	PCIE_RX30+	PCIE_TX30+
99	SER0_RX	NCSI_ARB_OUT	PCIE_RX30-	PCIE_TX30-
100	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)
101	CAN0/SER1_TX	FAN_PWMOUT	PCIE_RX31+	PCIE_TX31+
102	CAN0/SER1_RX	FAN_TACHIN	PCIE_RX31-	PCIE_TX31-
103	LID#	SLEEP#	GND	GND
104	VCC_12V	VCC_12V	VCC_12V	VCC_12V
105	VCC_12V	VCC_12V	VCC_12V	VCC_12V
106	VCC_12V	VCC_12V	VCC_12V	VCC_12V
107	VCC_12V	VCC_12V	VCC_12V	VCC_12V
108	VCC_12V	VCC_12V	VCC_12V	VCC_12V
109	VCC_12V	VCC_12V	VCC_12V	VCC_12V
110	GND(FIXED)	GND(FIXED)	GND(FIXED)	GND(FIXED)

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Comparison – Type 6 (Rev. 2.1) to Proposed Type 7 – AB Connector

Type 7 differences from Type 6 are flagged by yellow background

Pin	Type 6 Row A	Type 6 Row B		Type 7 Row A	Type 7 Row B
1	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
2	GBE0_MDI3-	GBE0_ACT#		GBE0_MDI3-	GBE0_ACT#
3	GBE0_MDI3+	LPC_FRAME#		GBE0_MDI3+	**LPC_FRAME# / ESPI_CS0#**
4	GBE0_LINK100#	LPC_AD0		GBE0_LINK100#	**LPC_AD0 / ESPI_IO_0**
5	GBE0_LINK1000#	LPC_AD1		GBE0_LINK1000#	**LPC_AD1 / ESPI_IO_1**
6	GBE0_MDI2-	LPC_AD2		GBE0_MDI2-	**LPC_AD2 / ESPI_IO_2**
7	GBE0_MDI2+	LPC_AD3		GBE0_MDI2+	**LPC_AD3 / ESPI_IO_3**
8	GBE0_LINK#	LPC_DRQ0#		GBE0_LINK#	**LPC_DRQ0# / ESPI_ALERT0#**
9	GBE0_MDI1-	LPC_DRQ1#		GBE0_MDI1-	**LPC_DRQ1# / ESPI_ALERT1#**
10	GBE0_MDI1+	LPC_CLK		GBE0_MDI1+	**LPC_CLK / ESPI_CK**
11	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
12	GBE0_MDI0-	PWRBTN#		GBE0_MDI0-	PWRBTN#
13	GBE0_MDI0+	SMB_CK		GBE0_MDI0+	SMB_CK
14	GBE0_CTREF	SMB_DAT		GBE0_CTREF	SMB_DAT
15	SUS_S3#	SMB_ALERT#		SUS_S3#	SMB_ALERT#
16	SATA0_TX+	SATA1_TX+		SATA0_TX+	SATA1_TX+
17	SATA0_TX-	SATA1_TX-		SATA0_TX-	SATA1_TX-
18	SUS_S4#	SUS_STAT#		SUS_S4#	**SUS_STAT# / ESPI_RESET#**
19	SATA0_RX+	SATA1_RX+		SATA0_RX+	SATA1_RX+
20	SATA0_RX-	SATA1_RX-		SATA0_RX-	SATA1_RX-
21	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
22	SATA2_TX+	SATA3_TX+		**PCIE_TX15+**	**PCIE_RX15+**
23	SATA2_TX-	SATA3_TX-		**PCIE_TX15-**	**PCIE_RX15-**
24	SUS_S5#	PWR_OK		SUS_S5#	PWR_OK
25	SATA2_RX+	SATA3_RX+		**PCIE_TX14+**	**PCIE_RX14+**
26	SATA2_RX-	SATA3_RX-		**PCIE_TX14-**	**PCIE_RX14-**
27	BATLOW#	WDT		BATLOW#	WDT
28	(S)ATA_ACT#	AC/HDA_SDIN2		(S)ATA_ACT#	**RSVD**
29	AC/HDA_SYNC	AC/HDA_SDIN1		**RSVD**	**RSVD**
30	AC/HDA_RST#	AC/HDA_SDIN0		**RSVD**	**RSVD**
31	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
32	AC/HDA_BITCLK	SPKR		**RSVD**	SPKR
33	AC/HDA_SDOUT	I2C_CK		**RSVD**	I2C_CK
34	BIOS_DIS0#	I2C_DAT		**BIOS_DIS0# / ESPI_SAFS**	I2C_DAT
35	THRMTRIP#	THRM#		THRMTRIP#	THRM#
36	USB6-	USB7-		**PCIE_TX13+**	**PCIE_RX13+**
37	USB6+	USB7+		**PCIE_TX13-**	**PCIE_RX13-**
38	USB_6_7_OC#	USB_4_5_OC#		**GND**	**GND**
39	USB4-	USB5-		**PCIE_TX12+**	**PCIE_RX12+**
40	USB4+	USB5+		**PCIE_TX12-**	**PCIE_RX12-**

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Pin	Type 6 Row A	Type 6 Row B		Type 7 Row A	Type 7 Row B
41	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
42	USB2-	USB3-		USB2-	USB3-
43	USB2+	USB3+		USB2+	USB3+
44	USB_2_3_OC#	USB_0_1_OC#		USB_2_3_OC#	USB_0_1_OC#
45	USB0-	USB1-		USB0-	USB1-
46	USB0+	USB1+		USB0+	USB1+
47	VCC_RTC	EXCD1_PERST#		VCC_RTC	**ESPI_EN**
48	EXCD0_PERST#	EXCD1_CPPE#		**RSVD**	**RSVD**
49	EXCD0_CPPE#	SYS_RESET#		**RSVD**	SYS_RESET#
50	LPC_SERIRQ	CB_RESET#		**LPC_SERIRQ / ESPI_CS1#**	CB_RESET#
51	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
52	PCIE_TX5+	PCIE_RX5+		PCIE_TX5+	PCIE_RX5+
53	PCIE_TX5-	PCIE_RX5-		PCIE_TX5-	PCIE_RX5-
54	GPI0	GPO1		GPI0	GPO1
55	PCIE_TX4+	PCIE_RX4+		PCIE_TX4+	PCIE_RX4+
56	PCIE_TX4-	PCIE_RX4-		PCIE_TX4-	PCIE_RX4-
57	GND	GPO2		GND	GPO2
58	PCIE_TX3+	PCIE_RX3+		PCIE_TX3+	PCIE_RX3+
59	PCIE_TX3-	PCIE_RX3-		PCIE_TX3-	PCIE_RX3-
60	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
61	PCIE_TX2+	PCIE_RX2+		PCIE_TX2+	PCIE_RX2+
62	PCIE_TX2-	PCIE_RX2-		PCIE_TX2-	PCIE_RX2-
63	GPI1	GPO3		GPI1	GPO3
64	PCIE_TX1+	PCIE_RX1+		PCIE_TX1+	PCIE_RX1+
65	PCIE_TX1-	PCIE_RX1-		PCIE_TX1-	PCIE_RX1-
66	GND	WAKE0#		GND	WAKE0#
67	GPI2	WAKE1#		GPI2	WAKE1#
68	PCIE_TX0+	PCIE_RX0+		PCIE_TX0+	PCIE_RX0+
69	PCIE_TX0-	PCIE_RX0-		PCIE_TX0-	PCIE_RX0-
70	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
71	eDP_TX2+/LVDS_A0+	LVDS_B0+		**PCIE_TX8+**	**PCIE_RX8+**
72	eDP_TX2-/LVDS_A0-	LVDS_B0-		**PCIE_TX8-**	**PCIE_RX8-**
73	eDP_TX1+/LVDS_A1+	LVDS_B1+		**GND**	**GND**
74	eDP_TX1-/LVDS_A1-	LVDS_B1-		**PCIE_TX9+**	**PCIE_RX9+**
75	eDP_TX0+/LVDS_A2+	LVDS_B2+		**PCIE_TX9-**	**PCIE_RX9-**
76	eDP_TX0-/LVDS_A2-	LVDS_B2-		**GND**	**GND**
77	eDP/LVDS_VDD_EN	LVDS_B3+		**PCIE_TX10+**	**PCIE_RX10+**
78	LVDS_A3+	LVDS_B3-		**PCIE_TX10-**	**PCIE_RX10-**
79	LVDS_A3-	eDP/LVDS_BKLT_EN		**GND**	**GND**
80	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
81	eDP_TX3+/LVDS_A_CK+	LVDS_B_CK+		**PCIE_TX11+**	**PCIE_RX11+**
82	eDP_TX3-/LVDS_A_CK-	LVDS_B_CK-		**PCIE_TX11-**	**PCIE_RX11-**
83	eDP_AUX+/LVDS_I2C_CK	eDP/LVDS_BKLT_CTRL		**GND**	**GND**

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Pin	Type 6 Row A	Type 6 Row B		Type 7 Row A	Type 7 Row B
84	eDP_AUX-/LVDS_I2C_DAT	VCC_5V_SBY		**NCSI_TX_EN**	VCC_5V_SBY
85	GPI3	VCC_5V_SBY		GPI3	VCC_5V_SBY
86	RSVD	VCC_5V_SBY		RSVD	VCC_5V_SBY
87	eDP_HPD	VCC_5V_SBY		**RSVD**	VCC_5V_SBY
88	PCIE_CK_REF+	BIOS_DIS1#		PCIE_CK_REF+	**BIOS_DIS1# / ESPI_BBS**
89	PCIE_CK_REF-	VGA_RED		PCIE_CK_REF-	**NCSI_TRI_EN**
90	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
91	SPI_POWER	VGA_GRN		SPI_POWER	**NCSI_CLK_IN**
92	SPI_MISO	VGA_BLU		SPI_MISO	**NCSI_RXD1**
93	GPO0	VGA_HSYNC		GPO0	**NCSI_RXD0**
94	SPI_CLK	VGA_VSYNC		SPI_CLK	**NCSI_CRS_DV**
95	SPI_MOSI	VGA_I2C_CK		SPI_MOSI	**NCSI_TXD1**
96	TPM_PP	VGA_I2C_DAT		TPM_PP	**NCSI_TXD0**
97	TYPE10#	SPI_CS#		TYPE10#	SPI_CS#
98	SER0_TX	RSVD		SER0_TX	**NCSI_ARB_IN**
99	SER0_RX	RSVD		SER0_RX	**NCSI_ARB_OUT**
100	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
101	CAN0/SER1_TX	FAN_PWMOUT		CAN0/SER1_TX	FAN_PWMOUT
102	CAN0/SER1_RX	FAN_TACHIN		CAN0/SER1_RX	FAN_TACHIN
103	LID#	SLEEP#		LID#	SLEEP#
104	VCC_12V	VCC_12V		VCC_12V	VCC_12V
105	VCC_12V	VCC_12V		VCC_12V	VCC_12V
106	VCC_12V	VCC_12V		VCC_12V	VCC_12V
107	VCC_12V	VCC_12V		VCC_12V	VCC_12V
108	VCC_12V	VCC_12V		VCC_12V	VCC_12V
109	VCC_12V	VCC_12V		VCC_12V	VCC_12V
110	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)

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Comparison – Type 6 (Rev. 2.1) to Proposed Type 7 – CD Connector

Type 7 differences from Type 6 are flagged by yellow background

Pin	Type 6 Row C	Type 6 Row D		Type 7 Row C	Type 7 Row D
1	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
2	GND	GND		GND	GND
3	USB_SSRX0-	USB_SSTX0-		USB_SSRX0-	USB_SSTX0-
4	USB_SSRX0+	USB_SSTX0+		USB_SSRX0+	USB_SSTX0+
5	GND	GND		GND	GND
6	USB_SSRX1-	USB_SSTX1-		USB_SSRX1-	USB_SSTX1-
7	USB_SSRX1+	USB_SSTX1+		USB_SSRX1+	USB_SSTX1+
8	GND	GND		GND	GND
9	USB_SSRX2-	USB_SSTX2-		USB_SSRX2-	USB_SSTX2-
10	USB_SSRX2+	USB_SSTX2+		USB_SSRX2+	USB_SSTX2+
11	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
12	USB_SSRX3-	USB_SSTX3-		USB_SSRX3-	USB_SSTX3-
13	USB_SSRX3+	USB_SSTX3+		USB_SSRX3+	USB_SSTX3+
14	GND	GND		GND	GND
15	DDI1_PAIR6+	DDI1_AUX+_CTRLCLK		**10G_PHY_MDC_SCL3**	**10G_PHY_MDIO_SDA3**
16	DDI1_PAIR6-	DDI1_AUX-_CTRLDATA		**10G_PHY_MDC_SCL2**	**10G_PHY_MDIO_SDA2**
17	RSVD	RSVD		**10G_SDP2**	**10G_SDP3**
18	RSVD	RSVD		**GND**	**GND**
19	PCIE_RX6+	PCIE_TX6+		PCIE_RX6+	PCIE_TX6+
20	PCIE_RX6-	PCIE_TX6-		PCIE_RX6-	PCIE_TX6-
21	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
22	PCIE_RX7+	PCIE_TX7+		PCIE_RX7+	PCIE_TX7+
23	PCIE_RX7-	PCIE_TX7-		PCIE_RX7-	PCIE_TX7-
24	DDI1_HPD	RSVD		**10G_INT2**	**10G_INT3**
25	DDI1_PAIR4 +	RSVD		**GND**	**GND**
26	DDI1_PAIR4-	DDI1_PAIR0+		**10G_KR_RX3+**	**10G_KR_TX3+**
27	RSVD	DDI1_PAIR0-		**10G_KR_RX3-**	**10G_KR_TX3-**
28	RSVD	RSVD		**GND**	**GND**
29	DDI1_PAIR5+	DDI1_PAIR1+		**10G_KR_RX2+**	**10G_KR_TX2+**
30	DDI1_PAIR5-	DDI1_PAIR1-		**10G_KR_RX2-**	**10G_KR_TX2-**
31	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
32	DDI2_AUX+_CTRLCLK	DDI1_PAIR2+		**10G_SFP_SDA3**	**10G_SFP_SCL3**
33	DDI2_AUX-_CTRLDATA	DDI1_PAIR2-		**10G_SFP_SDA2**	**10G_SFP_SCL2**
34	DDI2_DDC_AUX_SEL	DDI1_DDC_AUX_SEL		**10G_PHY_RST_23**	**10G_PHY_SEL_23**
35	RSVD	RSVD		**10G_PHY_RST_01**	**10G_PHY_SEL_01**
36	DDI3_AUX+_CTRLCLK	DDI1_PAIR3+		**10G_LED_SDA**	**RSVD**
37	DDI3_AUX-_CTRLDATA	DDI1_PAIR3-		**10G_LED_SCL**	**RSVD**
38	DDI3_DDC_AUX_SEL	RSVD		**10G_SFP_SDA1**	**10G_SFP_SCL1**
39	DDI3_PAIR0+	DDI2_PAIR0+		**10G_SFP_SDA0**	**10G_SFP_SCL0**
40	DDI3_PAIR0-	DDI2_PAIR0-		**10G_SDP0**	**10G_SDP1**

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Pin	Type 6 Row C	Type 6 Row D		Type 7 Row C	Type 7 Row D
41	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
42	DDI3_PAIR1+	DDI2_PAIR1+		**10G_KR_RX1+**	**10G_KR_TX1+**
43	DDI3_PAIR1-	DDI2_PAIR1-		**10G_KR_RX1-**	**10G_KR_TX1-**
44	DDI3_HPD	DDI2_HPD		**GND**	**GND**
45	RSVD	RSVD		**10G_PHY_MDC_SCL1**	**10G_PHY_MDIO_SDA1**
46	DDI3_PAIR2+	DDI2_PAIR2+		**10G_PHY_MDC_SCL0**	**10G_PHY_MDIO_SDA0**
47	DDI3_PAIR2-	DDI2_PAIR2-		**10G_INT0**	**10G_INT1**
48	RSVD	RSVD		**GND**	**GND**
49	DDI3_PAIR3+	DDI2_PAIR3+		**10G_KR_RX0+**	**10G_KR_TX0+**
50	DDI3_PAIR3-	DDI2_PAIR3-		**10G_KR_RX0-**	**10G_KR_TX0-**
51	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
52	PEG_RX0+	PEG_TX0+		**PCIE_RX16+**	**PCIE_TX16+**
53	PEG_RX0-	PEG_TX0-		**PCIE_RX16-**	**PCIE_TX16-**
54	TYPE0#	PEG_LANE_RV#		TYPE0#	**RSVD**
55	PEG_RX1+	PEG_TX1+		**PCIE_RX17+**	**PCIE_TX17+**
56	PEG_RX1-	PEG_TX1-		**PCIE_RX17-**	**PCIE_TX17-**
57	TYPE1#	TYPE2#		TYPE1#	TYPE2#
58	PEG_RX2+	PEG_TX2+		**PCIE_RX18+**	**PCIE_TX18+**
59	PEG_RX2-	PEG_TX2-		**PCIE_RX18-**	**PCIE_TX18-**
60	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
61	PEG_RX3+	PEG_TX3+		**PCIE_RX19+**	**PCIE_TX19+**
62	PEG_RX3-	PEG_TX3-		**PCIE_RX19-**	**PCIE_TX19-**
63	RSVD	RSVD		RSVD	RSVD
64	RSVD	RSVD		RSVD	RSVD
65	PEG_RX4+	PEG_TX4+		**PCIE_RX20+**	**PCIE_TX20+**
66	PEG_RX4-	PEG_TX4-		**PCIE_RX20-**	**PCIE_TX20-**
67	RSVD	GND		RSVD	GND
68	PEG_RX5+	PEG_TX5+		**PCIE_RX21+**	**PCIE_TX21+**
69	PEG_RX5-	PEG_TX5-		**PCIE_RX21-**	**PCIE_TX21-**
70	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
71	PEG_RX6+	PEG_TX6+		**PCIE_RX22+**	**PCIE_TX22+**
72	PEG_RX6-	PEG_TX6-		**PCIE_RX22-**	**PCIE_TX22-**
73	GND	GND		GND	GND
74	PEG_RX7+	PEG_TX7+		**PCIE_RX23+**	**PCIE_TX23+**
75	PEG_RX7-	PEG_TX7-		**PCIE_RX23-**	**PCIE_TX23-**
76	GND	GND		GND	GND
77	RSVD	RSVD		RSVD	RSVD
78	PEG_RX8+	PEG_TX8+		**PCIE_RX24+**	**PCIE_TX24+**
79	PEG_RX8-	PEG_TX8-		**PCIE_RX24-**	**PCIE_TX24-**
80	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
81	PEG_RX9+	PEG_TX9+		**PCIE_RX25+**	**PCIE_TX25+**
82	PEG_RX9-	PEG_TX9-		**PCIE_RX25-**	**PCIE_TX25-**
83	RSVD	RSVD		RSVD	RSVD

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Pin	Type 6 Row C	Type 6 Row D		Type 7 Row C	Type 7 Row D
84	GND	GND		GND	GND
85	PEG_RX10+	PEG_TX10+		**PCIE_RX26+**	**PCIE_TX26+**
86	PEG_RX10-	PEG_TX10-		**PCIE_RX26-**	**PCIE_TX26-**
87	GND	GND		GND	GND
88	PEG_RX11+	PEG_TX11+		**PCIE_RX27+**	**PCIE_TX27+**
89	PEG_RX11-	PEG_TX11-		**PCIE_RX27-**	**PCIE_TX27-**
90	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
91	PEG_RX12+	PEG_TX12+		**PCIE_RX28+**	**PCIE_TX28+**
92	PEG_RX12-	PEG_TX12-		**PCIE_RX28-**	**PCIE_TX28-**
93	GND	GND		GND	GND
94	PEG_RX13+	PEG_TX13+		**PCIE_RX29+**	**PCIE_TX29+**
95	PEG_RX13-	PEG_TX13-		**PCIE_RX29-**	**PCIE_TX29-**
96	GND	GND		GND	GND
97	RSVD	RSVD		RSVD	RSVD
98	PEG_RX14+	PEG_TX14+		**PCIE_RX30+**	**PCIE_TX30+**
99	PEG_RX14-	PEG_TX14-		**PCIE_RX30-**	**PCIE_TX30-**
100	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)
101	PEG_RX15+	PEG_TX15+		**PCIE_RX31+**	**PCIE_TX31+**
102	PEG_RX15-	PEG_TX15-		**PCIE_RX31-**	**PCIE_TX31-**
103	GND	GND		GND	GND
104	VCC_12V	VCC_12V		VCC_12V	VCC_12V
105	VCC_12V	VCC_12V		VCC_12V	VCC_12V
106	VCC_12V	VCC_12V		VCC_12V	VCC_12V
107	VCC_12V	VCC_12V		VCC_12V	VCC_12V
108	VCC_12V	VCC_12V		VCC_12V	VCC_12V
109	VCC_12V	VCC_12V		VCC_12V	VCC_12V
110	GND(FIXED)	GND(FIXED)		GND(FIXED)	GND(FIXED)

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