

AR8MX- Series

Quick Start Guide

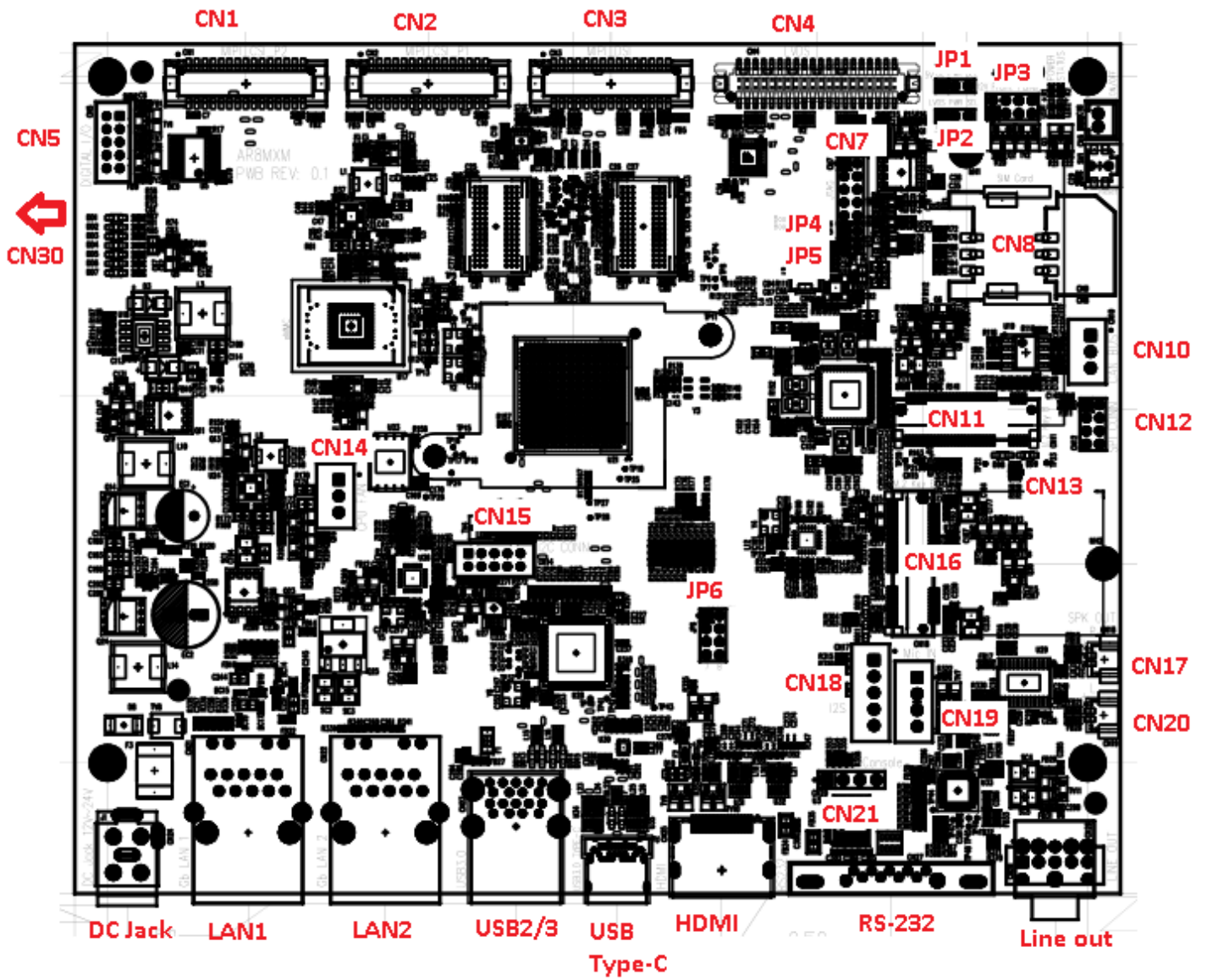
Ver 0.1

This Quick Start Guide is for BCM AR8MXMQ (Quad Core) ARM motherboards based on NXP i.MX8M Cortex® - A53 platform.




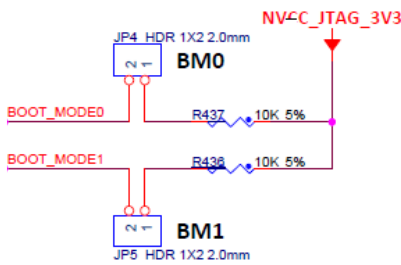






1. Mainboard illustration: Locations of IO ports & Jumper settings definition

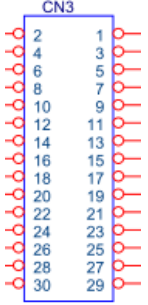
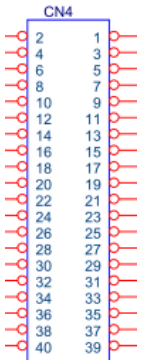
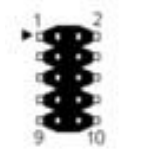
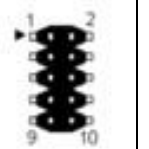
Board Top view :



1.1 Jumper Settings and Pin Definition

<p>1. JP1</p> 	<p>LVDS BL_PWR SEL</p> <p>Connector type : HDR 1x3 2.0mm DIP</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DCDC_5V</td> </tr> <tr> <td>2</td> <td>LBL0_PWR</td> </tr> <tr> <td>3</td> <td>DC12V</td> </tr> </tbody> </table>	Pin	Definition	1	DCDC_5V	2	LBL0_PWR	3	DC12V	<p>2. JP2</p> 	<p>LVDS PWR SEL</p> <p>Connector type : HDR 1x3 2.0mm DIP</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VDD_3V3</td> </tr> <tr> <td>2</td> <td>LCD0_PWR</td> </tr> <tr> <td>3</td> <td>DCDC_5V</td> </tr> </tbody> </table>	Pin	Definition	1	VDD_3V3	2	LCD0_PWR	3	DCDC_5V																				
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<p>3. JP3</p> 	<p>Front Panel Connector</p> <p>Connector type : HDR 2x4 2.0mm DIP</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>F_PWR_LED</td> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>SYS_nRST</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>NC</td> <td>6</td> <td>GND</td> </tr> <tr> <td>7</td> <td>ONOFF</td> <td>8</td> <td>GND</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	F_PWR_LED	2	GND	3	SYS_nRST	4	GND	5	NC	6	GND	7	ONOFF	8	GND	<p>4. JP4/JP5</p>	<p>BOOT Mode</p> <p>Connector type : HDR 1X2 2.0mm</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>JP4</td> <td>BM0</td> </tr> <tr> <td>JP5</td> <td>BM1</td> </tr> </tbody> </table>  <table border="1"> <thead> <tr> <th>BMODE[1:0]</th> <th>BOOT TYPE</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>Boot From Fuses</td> </tr> <tr> <td>01</td> <td>Serial Downloader</td> </tr> <tr> <td>10</td> <td>Internal Boot (Development)</td> </tr> <tr> <td>11</td> <td>Reserved</td> </tr> </tbody> </table> <p># Boot Device: eMMC/MicroSD</p>	Pin	Definition	JP4	BM0	JP5	BM1	BMODE[1:0]	BOOT TYPE	00	Boot From Fuses	01	Serial Downloader	10	Internal Boot (Development)	11	Reserved
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2	LVDS0_CH0_CLK_P	12	GND	22	LVDS0_CH0_TX2_N	32	LVDS0_S_SCL																																																																																			
3	LVDS0_CH1_CLK_N	13	LVDS0_CH1_TX1_P	23	GND	33	LVDS0_TS_INT																																																																																			
4	LVDS0_CH0_CLK_N	14	LVDS0_CH0_TX1_P	24	GND	34	GND																																																																																			
5	GND	15	LVDS0_CH1_TX1_N	25	LVDS0_CH1_TX3_P	35	GND																																																																																			
6	GND	16	LVDS0_CH0_TX1_N	26	LVDS0_CH0_TX3_P	36	LVDS0_BL_PWM																																																																																			
7	LVDS0_CH1_TX0_P	17	GND	27	LVDS0_CH1_TX3_N	37	LBL0_PWR																																																																																			
8	LVDS0_CH0_TX0_P	18	GND	28	LVDS0_CH0_TX3_N	38	LCD0_PWR																																																																																			
9	LVDS0_CH1_TX0_N	19	LVDS0_CH1_TX2_P	29	GND	39	LBL0_PWR																																																																																			
10	LVDS0_CH0_TX0_N	20	LVDS0_CH0_TX2_P	30	GND	40	LCD0_PWR																																																																																			
10.	CN5 : DIGITAL IO Conn	11.	CN7 : JTAG																																																																																							
	<p>Connector type : HDR 2x5 2.0mm DIP</p> <table border="1" data-bbox="365 1602 711 1896"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DIO0</td> <td>6</td> <td>DIO6</td> </tr> <tr> <td>2</td> <td>VDD_3V3</td> <td>7</td> <td>DIO3</td> </tr> <tr> <td>3</td> <td>DIO1</td> <td>8</td> <td>DIO5</td> </tr> <tr> <td>4</td> <td>DIO7</td> <td>9</td> <td>GND</td> </tr> <tr> <td>5</td> <td>DIO2</td> <td>10</td> <td>DIO4</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	DIO0	6	DIO6	2	VDD_3V3	7	DIO3	3	DIO1	8	DIO5	4	DIO7	9	GND	5	DIO2	10	DIO4		<p>Connector type : HDR 2x5 2.0mm DIP</p> <table border="1" data-bbox="1036 1602 1463 1896"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>NVCC_JTAG_3V3</td> <td>6</td> <td>JTAG_TDO</td> </tr> <tr> <td>2</td> <td>JTAG_TMS</td> <td>7</td> <td>NC</td> </tr> <tr> <td>3</td> <td>GND</td> <td>8</td> <td>JTAG_TDI</td> </tr> <tr> <td>4</td> <td>JTAG_TCK</td> <td>9</td> <td>GND</td> </tr> <tr> <td>5</td> <td>GND</td> <td>10</td> <td>POR_B</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	NVCC_JTAG_3V3	6	JTAG_TDO	2	JTAG_TMS	7	NC	3	GND	8	JTAG_TDI	4	JTAG_TCK	9	GND	5	GND	10	POR_B																																							
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<p>12. CN8/9 : SIM Card Slot</p>	<p>13. CN10 : CAN BUS</p>																																
<p>14. CN11 : M.2 Key B Slot</p> <p>M.2 B Key for 3G/4G</p>																																	
<p>15. CN12 : SPI Conn</p> <p>Connector type : HDR 2x4 2.0mm DIP</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SPL_PWR</td> <td>5</td> <td>GND</td> </tr> <tr> <td>2</td> <td>SPL_PWR</td> <td>6</td> <td>GND</td> </tr> <tr> <td>3</td> <td>SPI2_SCLK</td> <td>7</td> <td>SPI2_MOSI</td> </tr> <tr> <td>4</td> <td>SPI2_CS</td> <td>8</td> <td>SPI2_MISO</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	SPL_PWR	5	GND	2	SPL_PWR	6	GND	3	SPI2_SCLK	7	SPI2_MOSI	4	SPI2_CS	8	SPI2_MISO	<p>16. CN13: USB2.0</p>												
Pin	Definition	Pin	Definition																														
1	SPL_PWR	5	GND																														
2	SPL_PWR	6	GND																														
3	SPI2_SCLK	7	SPI2_MOSI																														
4	SPI2_CS	8	SPI2_MISO																														
<p>17. CN14: CPU FAN</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>NC</td> </tr> <tr> <td>2</td> <td>5V</td> </tr> <tr> <td>3</td> <td>GND</td> </tr> </tbody> </table>	Pin	Definition	1	NC	2	5V	3	GND	<p>18. CN15: I2C Conn</p> <p>Connector type : HDR 2x5 2.0mm DIP</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3.3V</td> <td>6</td> <td>5V</td> </tr> <tr> <td>2</td> <td>I2C4_SDA</td> <td>7</td> <td>I2C3_SDA_5V</td> </tr> <tr> <td>3</td> <td>GND</td> <td>8</td> <td>GND</td> </tr> <tr> <td>4</td> <td>I2C4_SCL</td> <td>9</td> <td>I2C3_SCL_5V</td> </tr> <tr> <td>5</td> <td>GND</td> <td>10</td> <td>GND</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	3.3V	6	5V	2	I2C4_SDA	7	I2C3_SDA_5V	3	GND	8	GND	4	I2C4_SCL	9	I2C3_SCL_5V	5	GND	10	GND
Pin	Definition																																
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<p>19. CN16 : M.2 Key E Slot</p> <p>M.2 E Key for Wifi/BT</p>																																	
<p>20. CN17/CN20: SPEAKER OUT</p> <p>Connector type : MOLEX-53261-0271</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>CN17</th> <th>Pin</th> <th>CN20</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>AMP-L+</td> <td>1</td> <td>AMP-R+</td> </tr> <tr> <td>2</td> <td>AMP-L-</td> <td>2</td> <td>AMP-R-</td> </tr> </tbody> </table>	Pin	CN17	Pin	CN20	1	AMP-L+	1	AMP-R+	2	AMP-L-	2	AMP-R-	<p>21. CN18: I2S</p>																				
Pin	CN17	Pin	CN20																														
1	AMP-L+	1	AMP-R+																														
2	AMP-L-	2	AMP-R-																														

22.	CN19: MIC IN Connector type : HDR Wafer 1x4 2.5mm DIP <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>MIC_DET</td> </tr> <tr> <td>2</td> <td>MICBIAS_J</td> </tr> <tr> <td>3</td> <td>MIC_J</td> </tr> <tr> <td>4</td> <td>AD_AGND</td> </tr> </tbody> </table>	Pin	Definition	1	MIC_DET	2	MICBIAS_J	3	MIC_J	4	AD_AGND	23.	CN21: URAT Connector type : Header 1X4 2.54 <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>D3V3</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>UART1_TXD</td> </tr> <tr> <td>4</td> <td>UART1_RXD</td> </tr> </tbody> </table>	Pin	Definition	1	D3V3	2	GND	3	UART1_TXD	4	UART1_RXD																																																				
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24.	CN22: LAN1 Connector type : RTA-164AAK1A <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GE_MDI0+</td> <td>9</td> <td>GE_MDI3+</td> </tr> <tr> <td>2</td> <td>GE_MDI0-</td> <td>10</td> <td>GE_MDI3-</td> </tr> <tr> <td>3</td> <td>GE_MDI1+</td> <td>11</td> <td>LED2</td> </tr> <tr> <td>4</td> <td>GE_MDI1-</td> <td>12</td> <td>D3V3</td> </tr> <tr> <td>5</td> <td>GND</td> <td>13</td> <td>D3V3</td> </tr> <tr> <td>6</td> <td>GND</td> <td>14</td> <td>LED1</td> </tr> <tr> <td>7</td> <td>GE_MDI2+</td> <td>15</td> <td>GND</td> </tr> <tr> <td>8</td> <td>GE_MDI2-</td> <td>16</td> <td>GND</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	GE_MDI0+	9	GE_MDI3+	2	GE_MDI0-	10	GE_MDI3-	3	GE_MDI1+	11	LED2	4	GE_MDI1-	12	D3V3	5	GND	13	D3V3	6	GND	14	LED1	7	GE_MDI2+	15	GND	8	GE_MDI2-	16	GND	25.	CN23: LAN2 Connector type : RTA-164AAK1A <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GE_MDI0+</td> <td>9</td> <td>GE_MDI3+</td> </tr> <tr> <td>2</td> <td>GE_MDI0-</td> <td>10</td> <td>GE_MDI3-</td> </tr> <tr> <td>3</td> <td>GE_MDI1+</td> <td>11</td> <td>LED2</td> </tr> <tr> <td>4</td> <td>GE_MDI1-</td> <td>12</td> <td>D3V3</td> </tr> <tr> <td>5</td> <td>GND</td> <td>13</td> <td>D3V3</td> </tr> <tr> <td>6</td> <td>GND</td> <td>14</td> <td>LED1</td> </tr> <tr> <td>7</td> <td>GE_MDI2+</td> <td>15</td> <td>GND</td> </tr> <tr> <td>8</td> <td>GE_MDI2-</td> <td>16</td> <td>GND</td> </tr> </tbody> </table>	Pin	Definition	Pin	Definition	1	GE_MDI0+	9	GE_MDI3+	2	GE_MDI0-	10	GE_MDI3-	3	GE_MDI1+	11	LED2	4	GE_MDI1-	12	D3V3	5	GND	13	D3V3	6	GND	14	LED1	7	GE_MDI2+	15	GND	8	GE_MDI2-	16	GND
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27.	CN24: USB 3.0 x2 	28.	CN25: DC Jack Connector type : DC-JACK 6.5/2.0mm <table border="1"> <thead> <tr> <th>Pin</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VIN</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>GND</td> </tr> </tbody> </table>	Pin	Definition	1	VIN	2	GND	3	GND																																																																
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29.	CN26: HDMI	30.	CN28: COM RS232 DB9																																																																															
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31.	CN29: LINE OUT	32.	CN30: MicroSD																																																																															