

1. Module Pinning Description

AI: Analog Input

I: Input

O: Output

I/O: Input or Output

P: Power

REF: Analog Reference Voltage

Following table shows the configuration of the module pins and the usage at the base board A9M2410DEV.

X1	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
1	P	-	-	GND		GND
2	I	-	No	RSTIN#	Reset Input, i.e. Push Button on the module this signal is the input to a reset controller Pull-up 10k to +3.3V already on module	Push Button with 10k pull-up
3	I/O	-	No	PWRGOOD	Output of the reset controller push pull with 470R current limiting resistor	
4	O	RSTOUT#	No	RSTOUT#/ GPA21	Output of CPU, Softw. + WDT + RSTIN#	
5	I	-	No	TCK	JTAG, Pull-up 10k to +3.3V on module	
6	I	-	No	TMS	JTAG, Pull-up 10k to +3.3V on module	
7	I	-	No	TDI	JTAG, Pull-up 10k to +3.3V on module	
8	O	-	No	TDO	JTAG, Pull-up 10k to +3.3V on module	
9	I	-	No	TRST#	JTAG, Pull-up 10k to +3.3V on module	
10	I	-	No	CONF0/ DEBUGEN#	Debug Enable, Pull-up 10k to +3.3V on module 0 = Debug enabled, TRST# isolated from PWRGOOD	Connected to DIP-switch S2.1 ON: connected to GND
11	I	-	No	CONF1/ NAND_FWP#	NAND Flash Write Protect, Pull-up 10k to +3.3V on module 0 = NAND Flash write protected	Connected to DIP-switch S2.2 ON: connected to GND
12	I	-	No	CONF2/	Reserved, do not connect; Pull-up 10k to +3.3V on module	Connected to DIP-switch S2.3 ON: connected to GND
13	I	-	No	CONF3/	Reserved, do not connect, Pull-up 10k to +3.3V on module	Connected to DIP-switch S2.4 ON: connected to GND
14	I/O	I	No	CONF4/ GPF2/EINT2	Pull-up 10k to +3.3V on module	Connected to DIP-switch S2.5 ON: connected to GND
15	I/O	I	No	CONF5/ GPF3/EINT3	Pull-up 10k to +3.3V on module	Connected to DIP-switch S2.6 ON: connected to GND
16	I/O	I	No	CONF6/ GPF4/EINT4	Pull-up 10k to +3.3V on module	Connected to DIP-switch S2.7 ON: connected to GND
17	I/O	I	No	CONF7/ GPF5/EINT5	Pull-up 10k to +3.3V on module	Connected to DIP-switch S2.8 ON: connected to GND
18	I/O	TxD0	No	TxD0/ GPH2	Configured to TxD0	Connected via RS232 driver to COMA, X12
19	I/O	RxD0	No	RxD0/ GPH3	Configured to RxD0	Connected via RS232 driver to COMA, X12
20	I/O	RTS0#	No	RTS0#/ GPH1	Configured to RTS0#	Connected via RS232 driver to COMA, X12
21	I/O	CTS0#	No	CTS0#/ GPH0	Configured to CTS0#	Connected via RS232 driver to COMA, X12
22	I/O	CAMPCLK	No	CAMPCLK	Pixel Clock, driven by the Camera processor, input with pull-up enabled	Connected to X28
23	I/O	CAM_HREF	No	CAM_HREF	Horizontal Sync, driven by the Camera processor, input with pull-up enabled	Connected to X28

X1	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
24	I/O	TxD1	No	TxD1/ GPH4	Configured to TxD1	Connected via RS232 driver to COMB, X13
25	I/O	RxD1	No	RxD1/ GPH5	Configured to RxD1	Connected via RS232 driver to COMB, X13
26	I/O	RTS1#	No	RTS1#/ GPH6/TxD2	Configured to RTS1#, Could also be used as TxD2	RTS1# connected via RS232 driver to COMB, X13; TxD2 connected to COMC, X8
27	I/O	CTS1#	No	CTS1#/ GPH7/RxD2	Configured to CTS1#, Could also be used as RxD2	CTS1# connected via RS232 driver to COMB, X13; RxD2 connected to COMC, X8
28	I/O	CAMVSYNC	No	CAMVSYNC	Frame Sync, driven by the Camera processor, input with pull-up enabled	Connected to X28
29	I/O	CAMDAT A0	No	CAMDAT A0	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
30	I/O	CAMDAT A1	No	CAMDAT A1	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
31	I/O	CAMDAT A2	No	CAMDAT A2	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
32	I/O	CAMDAT A3	No	CAMDAT A3	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
33	I/O	CAMDAT A4	No	CAMDAT A4	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
34	I/O	CAMDAT A5	No	CAMDAT A5	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
35	I/O	CAMDAT A6	No	CAMDAT A6	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
36	I/O	CAMDAT A7	No	CAMDAT A7	Pixel Data driven by the Camera processor, input with pull-up enabled	Connected to X28
37	I/O	I	No	VD0/ GPC8	Configured as input, pull-up enabled	Not used
38	I/O	I	No	VD1/ GPC9	Configured as input, pull-up enabled	Not used
39	P	P	-	GND		GND
40	I/O	VD2	No	VD2/ GPC10	Configured as output, pull-up enabled	Connected to LCD adapter X26
41	I/O	VD3	No	VD3/ GPC11	Configured as output, pull-up enabled	Connected to LCD adapter X26
42	I/O	VD4	No	VD4/ GPC12	Configured as output, pull-up enabled	Connected to LCD adapter X26
43	I/O	VD5	No	VD5/ GPC13	Configured as output, pull-up enabled	Connected to LCD adapter X26
44	I/O	VD6	No	VD6/ GPC14	Configured as output, pull-up enabled	Connected to LCD adapter X26
45	I/O	VD7	No	VD7/ GPC15	Configured as output, pull-up enabled	Connected to LCD adapter X26
46	I/O	I	No	VD8/ GPD0	Configured as input, pull-up enabled	Not used
47	I/O	I	No	VD9/ GPD1	Configured as input, pull-up enabled	Not used
48	I/O	VD10	No	VD10/ GPD2	Configured as output, pull-up enabled	Connected to LCD adapter X26
49	I/O	VD11	No	VD11/ GPD3	Configured as output, pull-up enabled	Connected to LCD adapter X26
50	I/O	VD12	No	VD12/ GPD4	Configured as output, pull-up enabled	Connected to LCD adapter X26
51	I/O	VD13	No	VD13/ GPD5	Configured as output, pull-up enabled	Connected to LCD adapter X26
52	I/O	VD14	No	VD14/ GPD6	Configured as output, pull-up enabled	Connected to LCD adapter X26
53	I/O	VD15	No	VD15/ GPD7	Configured as output, pull-up enabled	Connected to LCD adapter X26
54	I/O	I	No	VD16/ GPD8	Configured as input, pull-up enabled	Not used

X1	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
55	I/O	I	No	VD17/ GPD9	Configured as input, pull-up enabled	Not used
56	I/O	VD18	No	VD18/ GPD10	Configured as output, pull-up enabled	Connected to LCD adapter X26
57	I/O	VD19	No	VD19/ GPD11	Configured as output, pull-up enabled	Connected to LCD adapter X26
58	I/O	VD20	No	VD20/ GPD12	Configured as output, pull-up enabled	Connected to LCD adapter X26
59	I/O	VD21	No	VD21/ GPD13	Configured as output, pull-up enabled	Connected to LCD adapter X26
60	I/O	VD22	No	VD22/ GPD14/SS1#	Configured as output, pull-up enabled	Connected to LCD adapter X26
61	I/O	VD23	No	VD23/ GPD15/SS0#	Configured as output, pull-up enabled	Connected to LCD adapter X26
62	I/O	LCD_PW REN	No	LCD_PWREN/ GPG4/EINT12	Configured as output, pull-up disabled	Connected to LCD adapter X26
63	I/O	V DEN	No	VM/I2SSDI GPC4	Configured as output, pull-up disabled	Connected to LCD adapter X26
64	I/O	V SYNC	No	VFRAME/ GPC3	Configured as output, pull-up disabled	Connected to LCD adapter X26
65	I/O	H SYNC	No	VLINE/ GPC2	Configured as output, pull-up disabled	Connected to LCD adapter X26
66	I/O	LCD_HCL K	No	VCLK/ GPC1	Configured as output, pull-up disabled	Connected to LCD adapter X26
67	I/O	I	No	LEND/ GPC0	Configured as input, pull-up enabled	Not used
68	I/O	LCD_PC OE	No	LCD_PCOE/ GPC5	Configured as output, pull-up disabled	Connected to LCD adapter X26
69	I/O	LCD_LPC REV	No	LCD_LPCREV/ GPC6	Configured as output, pull-up disabled	Connected to LCD adapter X26
70	I/O	LCD_LPC REVB	No	LCD_LPCREVB/ GPC7	Configured as output, pull-up disabled	Connected to LCD adapter X26
71	I/O	I	No	TOUT0/ GPB0	10k pull-up to 3.3V	Connected to CPLD
72	I/O	I	No	TOUT1/ GPB1	10k pull-up to 3.3V	Connected to CPLD
73	I/O	O	No	TOUT2/ GPB2	Configured as output, 10k pull-up to 3.3V	connected to Audio Codec as L3MODE
74	I/O	I	No	TOUT3/ GPB3	Configured as input, pull-up enabled	connected to Audio Codec as L3DATA
75	I/O	SDCLK	No	SDCLK/ GPE5	SD-Interface, pull-up disabled	Connected to SD connector X29
76	I/O	SDCMD	No	SDCMD/ GPE6	10k pull-up on base board	Connected to SD connector X29
77	I/O	SDDATA0	No	SDDATA0/ GPE7	10k pull-up on base board	Connected to SD connector X29
78	I/O	SDDATA1	No	SDDATA1/ GPE8	10k pull-up on base board	Connected to SD connector X29
79	P	-	-	GND		GND
80	I/O	SDDATA2	No	SDDATA2/ GPE9	10k pull-up on base board	Connected to SD connector X29
81	I/O	SDDATA3	No	SDDATA3/ GPE10	10k pull-up on base board	Connected to SD connector X29
82	I/O	I	No	EINT0/ GPF0	Configured as input, pull-up disabled	Connected to User Key1
83	-	-	-	NC		Not connected
84	I/O	O	No	EINT6/ GPF6	DEBUG LED	DEBUG LED
85	I/O	I	No	EINT11/ GPG3/SS1#	Configured as input, pull-up disabled	Connected to User Key2
86	I/O	EINT13	No	EINT13/ GPG5/SPIMISO1	External Interrupt, pull-up enabled	Connected to CPLD
87	I/O	EINT14	No	EINT14/ GPG6/SPIMOSI1	External Interrupt, pull-up enabled	Connected to CPLD
88	I/O	EINT15	No	EINT15/ GPG7/SPICLK1	External Interrupt, pull-up enabled	Connected to CPLD

X1	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
89	I/O	SD_WP#	Yes	EINT17/ GPG9	Configured as input, pull-up disabled Write protect	Connected to SD connector X29
90	I/O	SD_CD#	Yes	EINT18/ GPG10	Configured as input, pull-up disabled Card detect	Connected to SD connector X29
91	-	-	-	NC		Not connected
92	O	-		OE#		Connected to CPLD
93	O	-		WE#	22R series resistor on module	Connected to CPLD
94	I	-	No	WAIT#	Pullup 5k to +3.3V on module	Connected to CPLD
95	I/O	CS1#	No	CS1#/ GPA12	Chip select, not used on module, 22R series resistor on module, Defaults to Ouput/High at reset, can be redefined as I/O pin.	Connected to CPLD
96	I/O	CS2#	No	CS2#/ GPA13	Chip select, not used on module, 22R series resistor on module, Defaults to Ouput/High at reset, can be redefined as I/O pin.	Connected to CPLD
97	I/O	CS3#	No	CS3#/ GPA14	Chip select, not used on module, 22R series resistor on module, Defaults to Ouput/High at reset, can be redefined as I/O pin.	Connected to CPLD
98	I/O	CS4#	No	CS4#/ GPA15	Chip select, not used on module, 22R series resistor on module, Defaults to Ouput/High at reset, can be redefined as I/O pin.	Connected to CPLD
99	O	-	No	PWREN	1.3V power control signal 0 = Power for unneeded parts is switched off Must be left unconnected if not used.	Connected to CPLD
100	I	-	No	BATT_FLT#	Battery Fault Pullup 10k to +3.3V on module, can be left unconnected	Not used
101	I/O	CAMCLK OUT	-	CAMCLKOUT	Master Clock to the Camera processor output with pull-up enabled	Connected to X28
102	I/O	CAMRES ET	-	CAMRESET	Software Reset or Power down to the Camera processor output with pull-up enabled	Connected to X28
103	O	-	No	DQM0	Upper Byte/Lower Byte Enable	Connected to CPLD
104	O	-	No	DQM1		Connected to CPLD
105	O	-	No	DQM2		Not used
106	O	-	No	DQM3		Not used
107	I/O	SS0#	No	SS0# GPG2/EINT10	SPI0, pull-up enabled	Not used
108	I/O	SPIMISO 0	No	SPIMISO0 GPE11	Pull-up enabled	Not used
109	I/O	SPIMOSI 0	No	SPIMOSI0 GPE12	Pull-up enabled	Not used
110	I/O	SPICKL0	No	SPICKL0 GPE13	Pull-up disabled	Not used
111	I/O	IICSCSCL	No	IICSCSCL GPE14	I ² C clock, Pullup 4k7 to 3.3V on module	used on module,
112	I/O	IICSDA	No	IICSDA GPE15	I ² C data, Pullup 4k7 to 3.3V on module	used on module
113	I/O	O	No	USB_DT/PW GPG0/EINT8	USB Detect/PowerEnable, by default set to output, pull-up enabled	output to switch on 1k5 pull- up resistor for USB device
114	I/O	USBP	YES	USBP	USB device, 22R series resistor has to be mounted on base board	USB device data line +, connected to X15
115	I/O	USBN	YES	USBN	USB device, 22R series resistor has to be mounted on base board	USB device data line -, connected to X15
116	P	-	-	VRTC	Backup Battery for RTC, for 3V cell, power-switch-over is on the module, Can be left floating, if RTC backup not needed.	3V battery connected
117	P	-	-	GND		GND
118	P	-	-	+3.3V		+3.3V
119	P	-	-	VLIO	Mobile: Power from Li-Ion Battery Non-Mobile: connected to 3.3V	Delivers either power from Li- Ion battery or 3.3V
120	P	-	-	+3.3V		+3.3V

X2	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
1	I/O	USBP0	Yes	USBP0	USB host0, 22R series resistor has to be mounted on base board	USB host data line +, connected to X14
2	P	-	-	GND		GND
3	I/O	USBN0	Yes	USBN0	USB host0, 22R series resistor has to be mounted on base board	USB host data line -, connected to X14
4	O	A0	No	A0/GPA0	used as address of ETH-Contr. on module, should not be used as I/O pin for compatibility	Connected to CPLD
5	O	-	No	A1		Connected to CPLD
6	O	-	No	A2		Connected to CPLD
7	O	-	No	A3		Connected to CPLD
8	O	-	No	A4		Connected to CPLD
9	O	-	No	A5		Connected to CPLD
10	O	-	No	A6		Connected to CPLD
11	O	-	No	A7		Connected to CPLD
12	O	-	No	A8		Connected to CPLD
13	O	-	No	A9		Connected to CPLD
14	O	-	No	A10		Connected to CPLD
15	O	-	No	A11		Connected to CPLD
16	O	-	No	A12		Connected to CPLD
17	O	-	No	A13		Not used
18	O	-	No	A14		Not used
19	O	-	No	A15		Not used
20	O	A16	No	A16/GPA1	used as address of ETH-Contr. on module, should not be used as I/O pin for compatibility	Not used
21	O	A17	No	A17/GPA2	used as address of ETH-Contr. on module, should not be used as I/O pin for compatibility	Not used
22	O	A18	No	A18/GPA3	used as address of ETH-Contr. on module, should not be used as I/O pin for compatibility	Not used
23	O	A19	No	A19/GPA4	used as address of ETH-Contr. on module, should not be used as I/O pin for compatibility	Not used
24	O	A20	No	A20/GPA5	should not be used as I/O pin for compatibility	Not used
25	O	A21	No	A21/GPA6	should not be used as I/O pin for compatibility	Not used
26	O	A22	No	A22/GPA7	should not be used as I/O pin for compatibility	Not used
27	O	A23	No	A23/GPA8	should not be used as I/O pin for compatibility	Connected to CPLD
28	O	A24	No	A24/GPA9	should not be used as I/O pin for compatibility	Not used
29	O	A25	No	A25/GPA10	should not be used as I/O pin for compatibility	Not used
30	O	A26	No	A26/GPA11	should not be used as I/O pin for compatibility	Not used
31	-	-	-	Reserved	(A27)	Not connected
32	-	-	-	Reserved	(A28)	Not connected
33	-	-	-	Reserved	(A29)	Not connected
34	-	-	-	Reserved	(A30)	Not connected
35	-	-	-	Reserved	(A31)	Not connected
36	I/O	I	No	XDREQ0#/ GPB10	Configured as input, pull-up enabled	Not used
37	I/O	I	No	XDREQ1#/ GPB8	Configured as input, pull-up enabled	Not used
38	I/O	I	No	XDACK0#/ GPB9	Configured as input, pull-up enabled	Not used
39	I/O	I	No	XDACK1#/ GPB7	Configured as input, pull-up enabled	Not used
40	P	-	-	GND		GND

X2	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
41	-	-	-	NC	-	Not connected
42	-	-	-	NC	-	Not connected
43	AI	-	No	AIN0	Analog in, unused analog inputs should be connected to AGND over a 10k series resistor to avoid cross over.	Not used
44	AI	-	No	AIN1		Not used
45	AI	-	No	AIN2		Not used
46	AI	-	No	AIN3		Not used
47	AI	-	No	AIN4	Used for touch screen TSYM	Connected to Touch screen connector X27
48	AI	-	No	AIN5	Used for touch screen TSYP	Connected to Touch screen connector X27
49	AI	-	No	AIN6	Used for touch screen TSXM	Connected to Touch screen connector X27
50	AI	-	No	AIN7	Used for touch screen TSXP	Connected to Touch screen connector X27
51	REF	-	No	AVCC	Analog VCC, Is the extra filtered +3.3V, connected with the AVCC ball of the CPU Can be used as an analog reference, do not connect to any other power source.	Not used
52	REF	-	No	AGND	Analog GND, Is the extra filtered GND, connected with the AGND ball of the CPU, Can be used as an analog reference, do not connect to any other power source.	Connected to Touch screen connector X27
53	-	-	-	NC	-	Not connected
54	-	-	-	NC	-	Not connected
55	-	-	-	NC	-	Not connected
56	-	-	-	NC	-	Not connected
57	I/O	I	No	XBREQ#/ GPB6	Configured as input, pull-up enabled	Not used
58	I/O	I	No	XBACK#/ GPB5	Configured as input, pull-up enabled	Not used
59	I/O	I	Yes	USBH0PEN/ GPG8/EINT16	USB host0 Power Enable	USB host: input to recognize current limit from connected device
60	-	-	NC			Not connected
61	I/O	I2SSDO	No	I2SSDO/ GPE4/I2SSDI	I2S-Interface, pull-up disabled	Connected to Audio Codec
62	I/O	I2SSDI	No	I2SSDI/ GPE3/SS0#	pull-up disabled	Connected to Audio Codec
63	I/O	CDCLK	No	CDCLK/ GPE2	pull-up disabled	Connected to Audio Codec
64	I/O	I2SSCLK	No	I2SSCLK/ GPE1	pull-up disabled	Connected to Audio Codec
65	I/O	I2SLRCK	No	I2SLRCK/ GPE0	pull-up disabled	Connected to Audio Codec
66	I	-	No	TPIN	Ethernet 0 Input-, 100R differential termination on module	Connected to RJ45 with integrated magnetics
67	O	-	No	LEDLNK	Ethernet 0 Line/Activity LED High, when link ok Low, while active.	Connected to Link/Activity LED
68	I	-	No	TPIP	Ethernet 0 Input+, 100R differential termination on module	Connected to RJ45 with integrated magnetics
69	O	-	No	not used	reserved for high speed LED	Not connected
70	O	-	No	TPON	Ethernet 0 Output-, 100R differential termination on module	Connected to RJ45 with integrated magnetics
71	I	-	No	not used		Not connected
72	O	-	No	TPOP	Ethernet 0 Output+, 100R differential termination on module	Connected to RJ45 with integrated magnetics
73	P	-		Not used		Not connected
74	-	-	-	Reserved		Not connected
75	-	-	-	Reserved		Not connected
76	-	-	-	Reserved		Not connected
77	-	-	-	Reserved		Not connected

X2	Type	U-Boot	5V tol.	A9M2440 Name	A9M2440 Description	Application A9M2410DEV
78	-	-	-	Reserved		Not connected
79	-	-	-	Reserved		Not connected
80	P	-	-	GND		GND
81	I/O	-	No	D0	Data Bus	Connected to CPLD
82	I/O	-	No	D1		Connected to CPLD
83	I/O	-	No	D2		Connected to CPLD
84	I/O	-	No	D3		Connected to CPLD
85	I/O	-	No	D4		Connected to CPLD
86	I/O	-	No	D5		Connected to CPLD
87	I/O	-	No	D6		Connected to CPLD
88	I/O	-	No	D7		Connected to CPLD
89	I/O	-	No	D8		Connected to CPLD
90	I/O	-	No	D9		Connected to CPLD
91	I/O	-	No	D10		Connected to CPLD
92	I/O	-	No	D11		Connected to CPLD
93	I/O	-	No	D12		Connected to CPLD
94	I/O	-	No	D13		Connected to CPLD
95	I/O	-	No	D14		Connected to CPLD
96	I/O	-	No	D15		Connected to CPLD
97	I/O	-	No	D16		Not used
98	I/O	-	No	D17		Not used
99	I/O	-	No	D18		Not used
100	I/O	-	No	D19		Not used
101	I/O	-	No	D20		Not used
102	I/O	-	No	D21		Not used
103	I/O	-	No	D22		Not used
104	I/O	-	No	D23		Not used
105	I/O	-	No	D24		Not used
106	I/O	-	No	D25		Not used
107	I/O	-	No	D26		Not used
108	I/O	-	No	D27		Not used
109	I/O	-	No	D28		Not used
110	I/O	-	No	D29		Not used
111	I/O	-	No	D30		Not used
112	I/O	-	No	D31		Not used
113	I/O	O	No	TCLK0/ GPB4	Configured as output, pull-up enabled	connected to Audio Codec as L3CLOCK
114	I/O	I	No	TCLK1/ GPG11/EINT19	Configured as input, pull-up enabled	Not used
115	-	-	-	NC	-	Not connected
116	O	CLKOUT1	No	CLKOUT1/ GPH10	Clock output, unbuffered CLKOUT1 signal, 22R series resistor on module	Connected to CPLD via 0R but 0R resistor not equipped
117	-	-	-	NC	-	Connected to CAN driver
118	-	-	-	NC	-	Connected to CAN driver
119	O	CLKOUT0	No	BCLKOUT0/ GPH9	Clock output, buffered CLKOUT0 signal	Connected to CPLD
120	P	-	-	GND	-	GND