

1. Operating Conditions

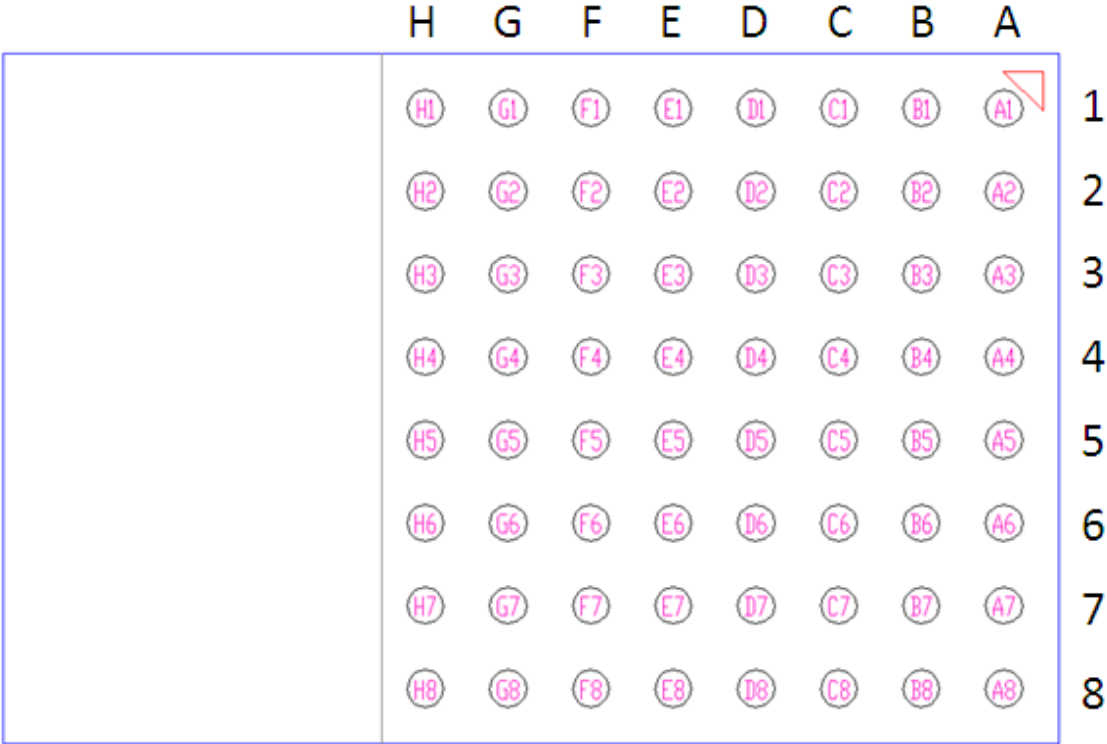
Features	Description
Operating Conditions	
Voltage	3.3V +-5%
Operating Temperature	-30 °C~ 85°C
Operating Humidity	less than 85% R.H.
Storage Temperature	-40 °C~ +85 °C
Storage Humidity	less than 60% R.H.

ESD Protection	
Human Body Model	+ -2KV
Changed Device Model	+ -500V

2. Pin Definition

2.1 Pin Map

AW-CU300 V2 pin out drawing (top view).



TOP VIEW

2.2 Pin Table

2.2.1 Power

Pin No	Definition	Basic Description	Type	Level
B7	B_3V3	3.3V Power input	PWR	3.3V
A7	M_3V3	3.3V Power input	PWR	3.3V

2.2.2 GPIO

Pin No	Definition	Function 0	Function 1	Function 2	Function 3	Function 4	Function 5	Type	Level
E1	GPIO_0	GPIO_0	GPT0_CH0	UART0_CTS	SSP0_CLK			I/O	3.3V
E2	GPIO_1	GPIO_1	GPT0_CH1	UART0_RTS	SSP0_FRM			I/O	3.3V
F1	GPIO_2	GPIO_2	GPT0_CH2	UART0_TXD	SSP0_TXD			I/O	3.3V
F2	GPIO_3	GPIO_3	GPT0_CH3	UART0_RXD	SSP0_RXD			I/O	3.3V
G1	GPIO_4	GPIO_4	GPT0_CH4	I2C0_SDA	AUDIO_CLK			I/O	3.3V
G2	GPIO_5	GPIO_5	GPT0_CH5	I2C0_SCL				I/O	3.3V
B2	GPIO_39	GPIO_39	GPT3_CLKI N	UART1_RXD	SSP1_RXD			I/O	3.3V
G8	GPIO_6	JTAG TDO	GPIO_6	I2C1_SDA				I/O	3.3V
E8	GPIO_7	JTAG TCK	GPIO_7	UART2_CTS	SSP2_CLK	I2C0_SDA		I/O	3.3V
E7	GPIO_8	JTAG TMS	GPIO_8	UART2_RTS	SSP2_FRM	I2C0_SDL		I/O	3.3V
F8	GPIO_9	JTAG TDI	GPIO_9	UART2_TXD	SSP2_TXD	I2C1_SDA		I/O	3.3V
F7	GPIO_10	JTAG TRST	GPIO_10	UART2_RXD	SSP2_RXD	I2C1_SDL		I/O	3.3V
B6	GPIO_16	GPIO_16	CON[5]		AUDIO_CLK			I/O	3.3V
C6	GPIO_27	GPIO_27	CON[4]	UART0_TXD				I/O	3.3V
C8	GPIO_22	WAKE_UP_0	GPIO_22					I/O	3.3V
C7	GPIO_23	WAKE_UP_1	GPIO_23	UART0_CTS			COMP_IN_ P	I/O	3.3V
C3	GPIO_24		GPIO_24	UART0_RXD	GPT1_CH5		COMP_IN_ N	I/O	3.3V
D8	GPIO_26	32KHzCLK_ OUT	GPIO_26	I2C1_SCL				I/O	3.3V
A2	GPIO_40	GPIO_40	ADC_DAC_T RIGGER0	ACOMP0_G PIO_OUT	ACOMP1_G PIO_OUT			I/O	3.3V
A3	GPIO_41	GPIO_41	ADC_DAC_T RIGGER1	ACOMP0_E DGE_PULSE	ACOMP1_E DGE_PULSE			I/O	3.3V
B1	GPIO_42	GPIO_42	ADC_0/ ACOMP0	UART1_CTS	SSP_CLK			I/O	3.3V
B8	GPIO_43	GPIO_43	ADC_1/ ACOMP1	UART1_RTS	SSP1_FRM			I/O	3.3V
C1	GPIO_46	GPIO_46	ADC_4/ ACOMP4	UART2_CTS	SSP2_CLK			I/O	3.3V

C2	GPIO_47	GPIO_47	ADC_5/ ACOMP5	UART2_RTS	SSP2_FRM			I/O	3.3V
D1	GPIO_48	GPIO_48	ADC_6/ ACOMP6	UART2_TXD	SSP2_TXD			I/O	3.3V
D2	GPIO_49	GPIO_49	ADC_7/ ACOMP7	UART2_RXD	SSP2_RXD			I/O	3.3V
D7	GPIO_25	32KHz_CLK _IN	GPIO_25	I2C1_SDA				I/O	3.3V
G7	RESETN	RESETN	Host reset					I/O	3.3V(internal pull high 51k ohm)
B4	GPIO_28	QSPI_SS _n	GPIO_28	I2C0_SDA			GPT1_CH0	I/O	3.3V
B5	GPIO_29	QSPI_Clk	GPIO_29	I2C0_SCL			GPT1_CH1	I/O	3.3V
A6	GPIO_30	QSPI_D0	GPIO_30	UART0_CTS	SSP0_CLK		GPT1_CH2	I/O	3.3V
A4	GPIO_31	QSPI_D1	GPIO_31	UART0_RTS	SSP0_FRM		GPT1_CH3	I/O	3.3V
B3	GPIO_32	QSPI_D2	GPIO_32	UART0_TXD	SSP0_TXD		GPT1_CH4	I/O	3.3V
A5	GPIO_33	QSPI_D3	GPIO_33	UART0_RXD	SSP0_RXD		GPT1_CH5	I/O	3.3V

2.2.3. GND

Pin No	Basic Description	Pin No	Basic Description
C4	GND	G3	GND
C5		G4	
D3		G5	
D4		G6	
D5		H1	
D6		H2	
E3		H3	
E4		H4	
E5		H5	
E6		H6	
F3		H8	
F4		A1	
F5		A8	
F6			

2.2.4. NC

Pin No	Basic Description	Remark
H7	DNS(Don't connect)	

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

Symbol	Parameter	Pin No	Min	Typ	Max	Units
B_3V3	3.3V power supply	B7		3.3	3.6	V
M_3V3	3.3V power supply	A7		3.3	3.6	V

3.2 Recommended Operating Conditions

Symbol	Parameter	Pin No	Min	Typ	Max	Units
B_3V3	3.3V power supply	B7	3.0	3.3	3.6	V
M_3V3	3.3V power supply	A7	3.0	3.3	3.6	V

3.3 Digital IO Pin DC Characteristics

3.3.1 3.3V Operation (M_3V3)

Symbol	Parameter	Minimum	Typical	Maximum	Unit
V _{IH}	Input high voltage	0.7* M_3V3	-	M_3V3+0.4	V
V _{IL}	Input low voltage	-0.4	-	0.3* M_3V3	
V _{OH}	Output High Voltage	M_3V3-0.4	-	-	
V _{OL}	Output Low Voltage	-	-	0.4	
V _{HYS}	Input Hysteresis	100			mV

3.4 Power Consumption

System-config:

SDK version:3.2

Compiler version: 4.6.3

WLAN Firmware version: 14.76.36.p84-702.1.0-WM

(All results are run to take 1 minutes then record the test average value)

Voltage=3.3V				
MCU Status	WiFi Deep Sleep	WiFi STA Connected	WiFi IEEE Power Saving	WiFi Power Down
	200Mhz	200Mhz	200Mhz	200Mhz
PM0(Active)	37.3	76.9	29.9	N/A ^{*(1)}
PM1(Idle)	28.1	67.6		N/A ^{*(1)}
PM2(Standby)	0.47	41.2	DTIM1=2.5 DTIM10=0.7	0.36
PM3(Sleep)	0.18	41.1	DTIM1=2.3 DTIM10=0.4	0.11
PM4(Shutdown)	0.15	41.2	DTIM1=2.3 DTIM10=0.3	0.08

Current Unit: mA

- (1) The MCU gets its clock from the WiFi subsection. When WiFi is powered down, the MCU is forced to run off of the internal RC32M clock. Marvell does not recommend this and hence this mode is not supported. Customers can instead put the WiFi in Deep Sleep to save power.

- CURRENT consumption (MFG WLAN TX /RX)

No.	Item			Power Supply: 3.3V Test Time: 5minutes	
Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	Transmit Continuous (Duty over 98%)	Receive
				Avg.	Avg.
2.4	11b@1M	20	17	302	77.4
	11b@11M	20	17	287	78.0
	11g@54M	20	14	229	79.2
	11n@MCS7	20	13	223	79.4

- *Current Unit: mA

3.5 External 32.768KHZ Crystal Requirement

An external 32.768kHz crystal can be used for low-power consumption. Below are the specifications for this crystal.

Parameter	Min	Typ	Max	Unit
Crystal Frequency		32.768		kHz
Frequency accuracy tolerance	-40		40	ppm
Startup time			600	ms
Duty cycle tolerance		50		%
Crystal load capacitance		12.5		pF
Crystal shunt capacitance			7	pF
ESR (Equivalent series resistance)			100	kOhm