PRODUCT SPECIFICATION

802.11 b/g/n 2.4GHz 1T1R WiFi Network Controller

Realtek AM87M00 Module Specification and AMEBA_MB8195A EVB Board Specification

Version 0.1

(Preliminary)

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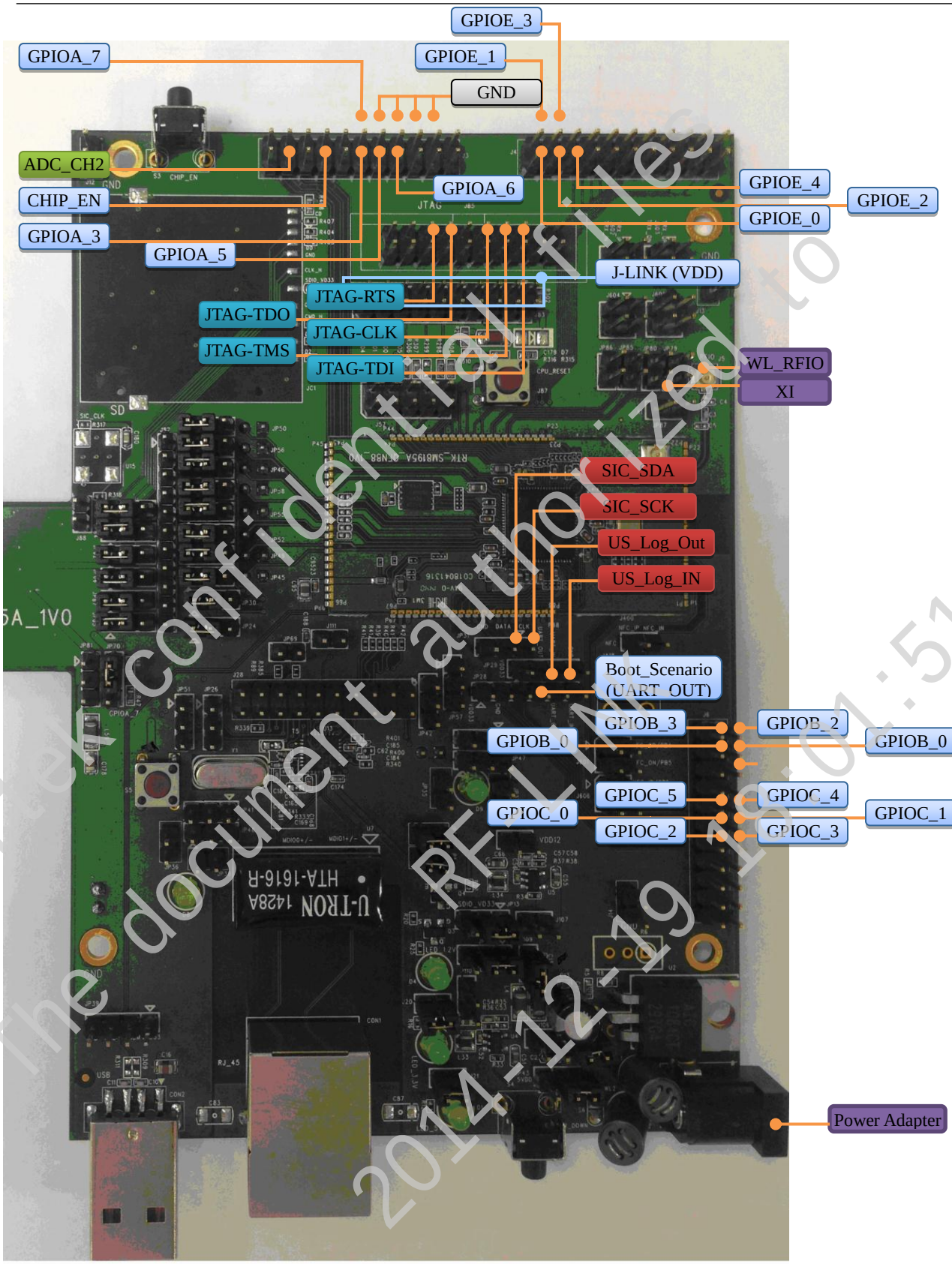
PRODUCT FEATURES

- Operate at ISM frequency bands (2.4GHz)
- Bunch of UART/ SPI/ I2C/ I2S interfaces for peripheral controllers.
- Standards support: 802.11b, 802.11g, 802.11n, 802.11d, 802.11e, , 802.11i
- Enterprise level security complying with WPA/WPA2 certification
- Light weight TCP/IP protocol suite
- One transmitter and one receiver 802.11n WLAN transceiver supports up to 150 Mbps downstream and 150 Mbps upstream PHY rates
- ARM Cortex-M development environment for customer applications



PIN ASSIGNMENT

Table 1. Module Pin Description Table

Symbol	Type	Module Pin No	MB Header Pin No	Description
CHIP_EN	I	18	J3-7	Enable RTL8195A, High Active
GPIOB_0	I/O	45	J6-19/ JP29-2	GPIOB Group. Default configured as UART_LOG_OUT. Also refer to Table 3. Power on trap function (Boot_Scenario): 1: Boot as MP mode 0: Boot as normal mode
GPIOB_1	I/O	44	J6-20/ JP29-3	GPIOB Group. Default configured as UART_LOG_IN. Also refer to Table 3.
GPIOB_2	I/O	43	J6-21	GPIOB Group. Functions refer to Table 3. Power on trap function (Normal_Mode_Sel) 1: Normal Function Mode 0: Testing Mode
GPIOB_3	I/O	42	J6-22	GPIOB Group. Functions refer to Table 3.
GPIOE_0	IO	13	J4-22	GPIOE Group. Default configured as JTAG_RST. Also configured as SPI_CS. Also refer to Table 3.
GPIOE_1	IO	12	J4-21	GPIOE Group. Default configured as JTAG_TDI. Also configured as SPI_CLK. Also refer to Table 3.
GPIOE_2	IO	11	J4-20	GPIOE Group. Default configured as JTAG_TDO. Also configured as SPI_MOSI. Also refer to Table 3.
GPIOE_3	IO	10	J4-19	GPIOE Group. Default configured as JTAG_TMS. Also configured as SPI_MISO. Also refer to Table 3.
GPIOE_4	IO	9	J4-18	GPIOE Group. Default configured as JTAG_CLK. Also configured as I2C_SCL. Also refer to Table 3.
ADC_CH2	IO		J3-3	AD Converter Channel 2
GPIOA_5	IO	24	J3-13	GPIODAGroup. Default configured as SD_D1. Also refer to Table 3.
GPIOA_3	IO	22	J3-11	GPIODAGroup. Default configured as SD_CMD. Also refer to Table 3.
GPIOA_7	IO	25	J3-14	GPIODAGroup. Also refer to Table 3.

Symbol	Type	Module Pin No	MB Header Pin No	Description
GPIOA_6	IO	26	J3-15	GPIODAGroup. Also refer to Table 3.
VD33	PWR	34		Module Power Source
GND	GND	33,35		Module GND
GPIOC_3	IO	36	J6-9	GPIOD C group. Default configured as I2S_MCK. Also refer to Table 3.
GPIOC_2	IO	37	J6-10	GPIOD C group. Default configured as I2S_SD_TX. Also refer to Table 3.
GPIOC_1	IO	38	J6-11	GPIOD C group. Default configured as I2S_CLK. Also refer to Table 3.
GPIOC_0	IO	39	J6-12	GPIOD C group. Default configured as I2S_WE. Also refer to Table 3.
GPIOC_4	IO	40	J6-13	GPIOD C group. Default configured as I2C_SDA. Also refer to Table 3.
GPIOC_5	IO	41	J6-14	GPIOD C group. Default configured as I2C_SCK. Also refer to Table 3.

Pin Function Table

Pin Configurable Function Group Summary Table

Table 2. Pin Function Group Table

PIN name	JTAG	SPI_M	UART_LOG	UART0	I2C1	I2C2	I2C3	SPI0
GPIOA_3				UART0_RTS				
GPIOA_5				UART0_CTS				
GPIOA_6				UART0_IN				
GPIOA_7				UART0_OUT				
GPIOB_0			UART_LOG_OUT					
GPIOB_1			UART_LOG_IN					
GPIOB_2							I2C3_SCL	
GPIOB_3							I2C3_SDA	
GPIOC_0		SPI_M_CS		UART0_IN				SPI0_CS0
GPIOC_1		SPI_M_CLK		UART0_CTS				SPI0_CLK
GPIOC_2		SPI_M_DATA0		UART0_RTS				SPI0_MOSI
GPIOC_3		SPI_M_DATA1		UART0_OUT				SPI0_MISO
GPIOC_4					I2C1_SDA			SPI0_CS1
GPIOC_5					I2C1_SCL			
GPIOE_0	JTAG_TRST			UART0_OUT		I2C2_SCL		SPI0_CS0
GPIOE_1	JTAG_TDI			UART0_RTS		I2C2_SDA		SPI0_CLK
GPIOE_2	JTAG_TDO			UART0_CTS			I2C3_SCL	SPI0_MOSI
GPIOE_3	JTAG_TMS			UART0_IN			I2C3_SDA	SPI0_MISO

PIN name	I2S0	I2S1	PCM0	PCM1	PWM0	PWM1	PWM2	PWM3	GPIO
GPIOA_3									GPIO_P1_01
GPIOA_5									GPIO_P1_03
GPIOA_6									GPIO_P1_04
GPIOA_7									GPIO_P1_05
GPIOB_0									GPIO_P1_06
GPIOB_1									GPIO_P1_07
GPIOB_2									GPIO_P1_08
GPIOB_3									GPIO_P0_02
GPIOC_0		I2S1_WS		PCM1_SYNC	PWM0				GPIO_P1_10
GPIOC_1		I2S1_CLK		PCM1_CLK		PWM1			GPIO_P0_06
GPIOC_2		I2S1_SD_TX		PCM1_OUT			PWM2		GPIO_P1_11
GPIOC_3		I2S1_MCK		PCM1_IN				PWM3	GPIO_P0_07
GPIOC_4		I2S1_SD_RX							GPIO_P0_08
GPIOC_5	I2S0_SD_RX								GPIO_P0_09
GPIOE_0	I2S0_WS		PCM0_SYNC		PWM0				GPIO_P1_15
GPIOE_1	I2S0_CLK		PCM0_CLK			PWM1			GPIO_P0_21
GPIOE_2	I2S0_SD_TX		PCM0_OUT				PWM2		GPIO_P0_22
GPIOE_3	I2S0_MCK		PCM0_IN					PWM3	GPIO_P0_23

ENVIRONMENTAL

Operating

Operating Temperature:	0°C to +70 °C
Relative Humidity:	5-90% (non-condensing)

Storage

Temperature:	-40°C to +80°C (non-operating)
Relevant Humidity:	5-95% (non-condensing)

MTBF caculation

Over 150,000hours