

### Realtek Ameba1 DEV01 User Manual

This document define pin out of Ameba EVB.

Version 1.3



#### **Document Number: UM0058**

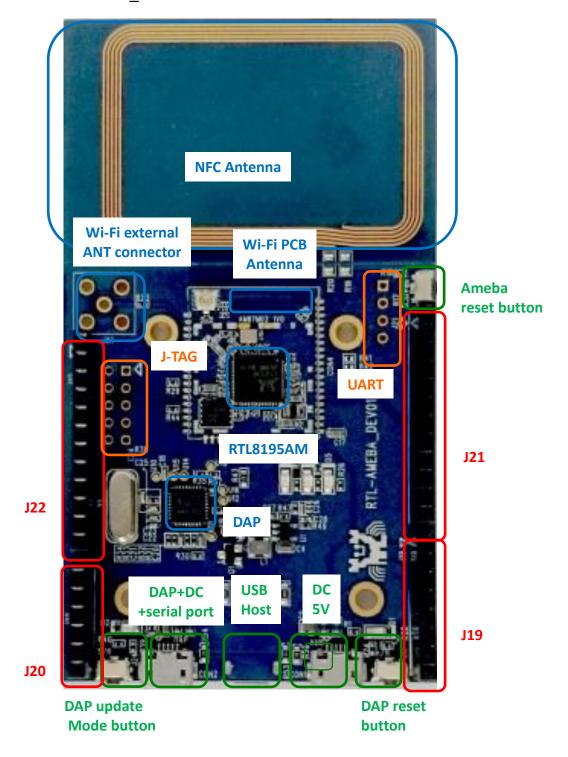
# Table of Contents

1		Hard	dware block diagram	. 3
2			em requirements	
3		out reference	. 4	
	3.2	1	Pin out table	. 4
	3.2	2	Pin out reference	. 5
4		Ante	enna hardware setup	. 6
5		Peri	pherals support	. 7
	5.2	1	Reference setup	. 7
6		Hard	dware configuration	. 8
	6.2	1	CMSIS-DAP	. 8
	6.2	2	J-Link/JTAG	. <u>c</u>
7		Refe	erence electrical schematics	11
8		Ame	eba1 EVB 3V0 pin out	13



## 1 Hardware block diagram

- IC: RTL8195AM
- EVB: RTL-AMEBA\_DEV01





Document Number: UM0058

## 2 System requirements

- Windows PC (XP, Vista, 7)
- USB type A to Micro-B USB cable x 1
- RS-232 to UART board(debug) x 1, JTAG cable x1 (option)

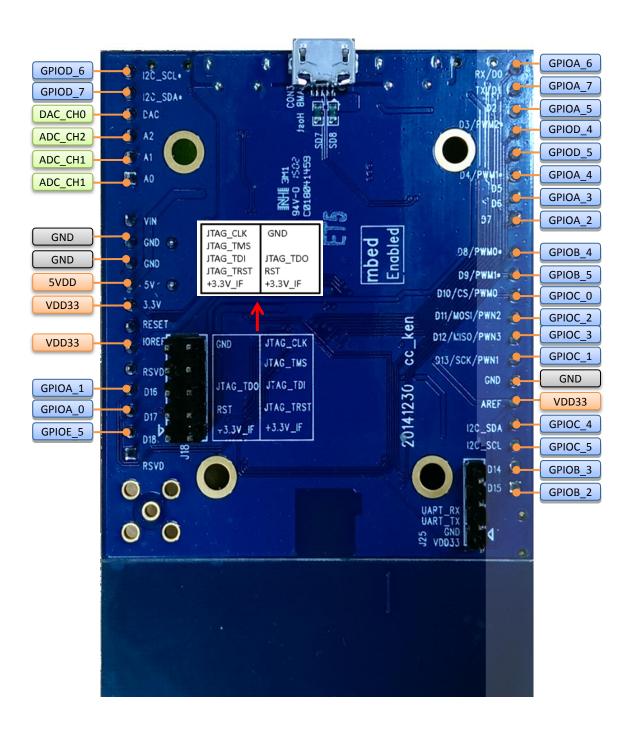
### 3 Pin out reference

#### 3.1 Pin out table

Con	EVB name	Pin	Net name	Con	EVB name	Pin	Net name
	I2C_SCL*	6	GPIOD_6		RX/D0	8	GPIOA_6
	I2C_SDA*	5	GPIOD_7		TX/D1	7	GPIOA_7
	DAC	4	DAC_CH0		D2	6	GPIOA_5
120	A2	3	ADC_CH2	14.0	D3/PWM2*	5	GPIOD_4
J20	A1	2	ADC_CH1	J19	D4/PWM1*	4	GPIOD_5
	Α0	1	ADC_CH1		D5	3	GPIOA_4
					D6	2	GPIOA_3
					D7	1	GPIOA_2
Con	EVB name	Pin	Net name	Con	EVB name	Pin	Net name
	VIN	12	NC		D8/PWM0*	12	GPIOB_4
	GND	11	GROUND		D9/PWM1*	11	GPIOB_5
	GND	10	GROUND		D10/CS/PWM0	10	GPIOC_0
	5V	9	5VDD		D11/MOSI/PWM2	9	GPIOC_2
	3.3V	8	VDD33		D12/MISO/PWM3	8	GPIOC_3
sJ22	RESET	7	NC	J21	D13/SCK/PWM1	7	GPIOC_1
3JZZ	IOREF	6	VDD33	JZI	GND	6	GND
	RSVD	5	NC		AREF	5	VDD33
	D16	4	GPIOA_1		I2C_SDA	4	GPIOC_4
	D17	3	GPIOA_0		I2C_SCL	3	GPIOC_5
	D18	2	GPIOE_5		D14	2	GPIOB_3
	RSVD	1	NC		D15	1	GPIOB_2



### 3.2 Pin out reference



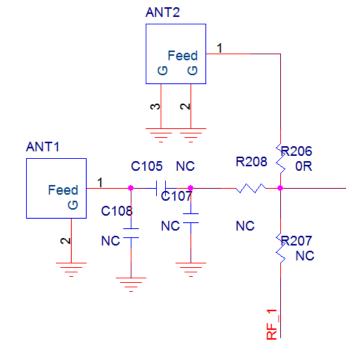


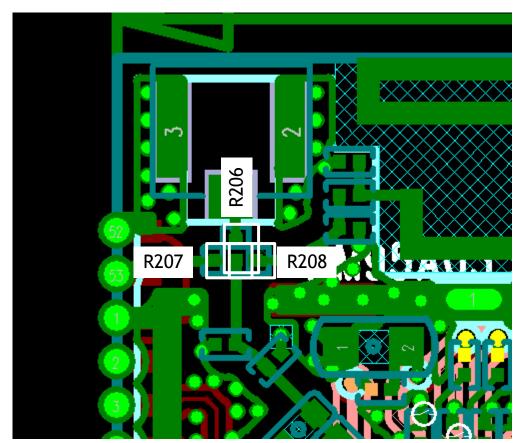
## 4 Antenna hardware setup

■ I-PEX/U.FL connector: R206

External antenna: R207

■ PCB antenna: R208







Document Number: UM0058

## **5 Peripherals support**

• Debug UART: GPIOB\_[0..1]

• JTAG: GPIOE\_[0..4]

UART

• I2C / I2S/SPI

PWM/PCM

### **5.1** Reference setup

PIN name	JTAG	UART Funtion	I2C Group	SPI Group	I2S GROUP	PCM Group	WL_LED0	PWM	WKDT	GPIO_INT
GPIOA_0		UART2_IN		SPI1_MISO						GPIO_INT
GPIOA_1		UART2_CTS		SPI1_MOSI						GPIO_INT
GPIOA_2		UART2_RTS		SPI1_CLK						
GPIOA_3		UARTO_RTS			SPL					
GPIOA_4		UART2_OUT		SPI1_CS						
GPIOA_5		UARTO_CTS							WKDT0	
GPIOA_6		UARTO_IN	<b>UAR</b>	Т						
GPIOA_7		LIARTO_OUT	VAN	\						
GPIOB_0		UART_LOG_OUT								
GPIOB_1	~	UART LOG IN					WL_LED0			
GPIOB_2			I2C3_SCL				_			
GPIOB 3	Dehilio	console	12C3 SDA						<u> </u>	GPIO INT.
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	<b>2011</b>	100 mark (100 mark)	3===	SEE	: (% I		LASAD			
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1-2		Poyto	(C::	<b>3140</b>	Tita T		JAKEZ	th A		<u> </u>
j ra	oMo_olk	PVIN	TO WAKE	ST2 <del></del>	. #K T		C LARTZ	01S. 2	87 SOL. SP	
-30-30 <mark>F</mark>	OMOTELLI	E <b>Q</b> XAM	12	945	TAL		UART2_	8TS: 24	YESIL SE	<u> </u>
1.	ALC MO	PARA		GAC	INT			CLT Z	11 SOA 87	CONTROL
1498 P	CM 3ESYNCE	EWW	13" ——			ITAG: TI	rsi Jarij	201 Z	<u> </u>	(LCS) = 2S
TOLK. P	OM3∓CLK.	EVVIV		- -	_'NT	TAS <del>.</del> Ti	JARTE	RTS 28	⊋_SUA——SP	3≒CLK. 2\$
50 JX-13	OM3–CUT	EWM	12	GF10	**************************************	TAG T	DO JARTO	CIS Z	3, 50L SF	MOSI 28
strije i	ZEJEMO	E Ø	13: WKE	73: SPIC	- '\'T	TAG. T	MS UARTS	£\\ 23	3: 504 sp	0 MISO 28
						TAG. D	LK.	21	33 <u>_</u> 80L <u>82</u>	0.034
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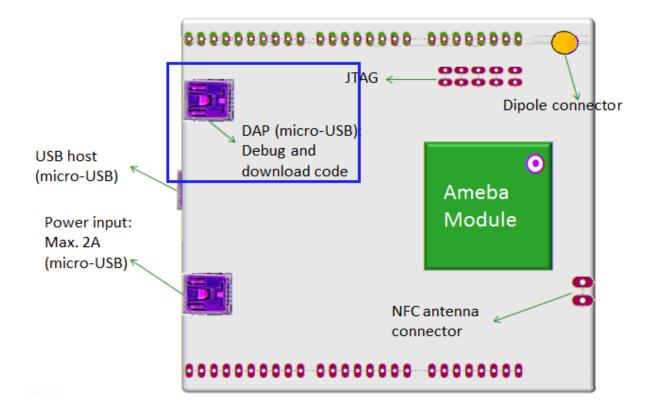


# 6 Hardware configuration

#### 6.1 CMSIS-DAP

RTL-AMEBA\_DEV01 supports CMSIS-DAP debugger. It requires installing "serial to USB driver" at first. Serial to USB driver can be found in tools\serial to usb\mbedWinSerial 16466.

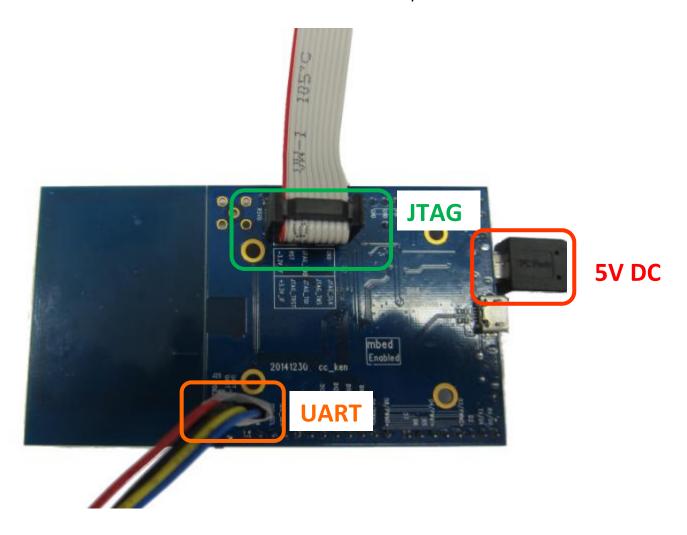
Connect board to the PC with micro-USB cable.





## 6.2 J-Link/JTAG

Weld JTAG and log UART connectors to HDK board and connect with pitch 2.54mm 2x5pins connector. It is recommended to weld the connector on the bottom side. Users can connect extension boards from top side.



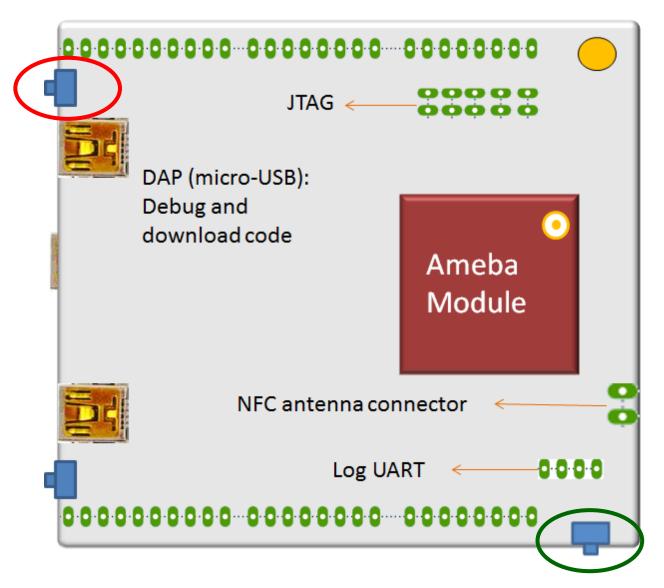
Dupont Line or 2.54mm 2x5 pins connector.





### Power On

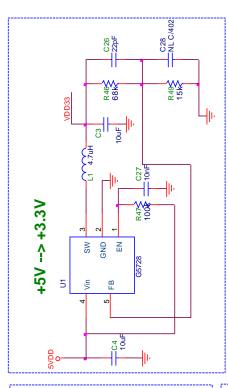
Holding button (red-circled) then plugging power to disable CMSIS-DAP function. Release the button after power on.

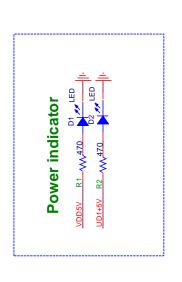


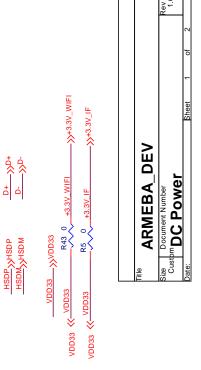
Note: To reset main chip, it is recommended to press Reset button (green-circled) instead of re-plugged in the power cable.

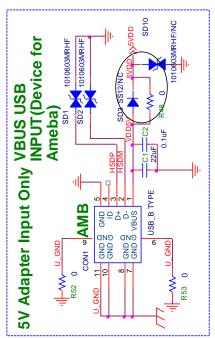


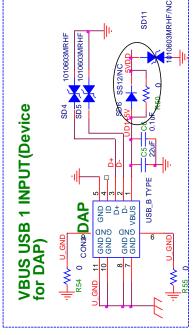
### 7 Reference electrical schematics

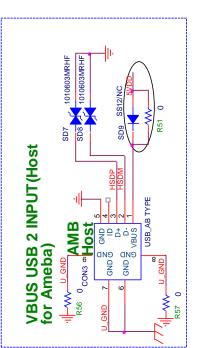




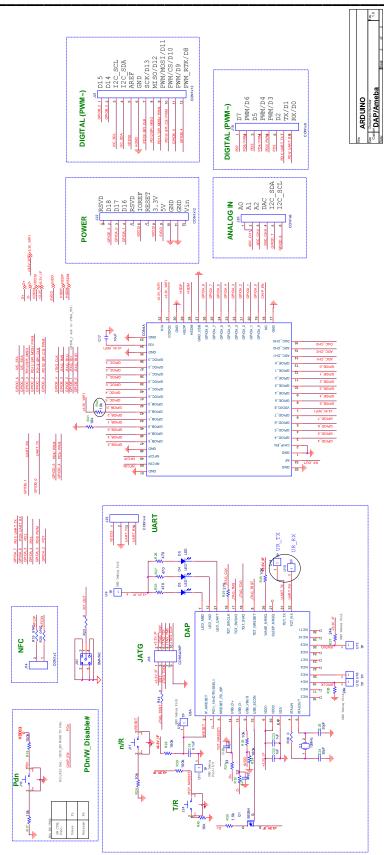














## 8 Ameba1 DEV01 pin out

