AW-CU362

Bluetooth 5.0 LE Stamp Module

Datasheet

Rev. 0.4

B

(For Standard)

Revision History

Revision	*Date*	*Description*	*Initials*	*Approved*
Version0.1	**2018/03/23**	**Initial Version**	**Alex Yu**	**Daniel Lee**
Version0.2	**2018/07/11**	Update: Mechanical Information	**Alex Yu**	**N.C. Chen**
Version0.3	**2018/07/12**	Update: PCB Footprint	**Alex Yu**	**N.C. Chen**
Version0.4	**2018/09/16**	Update: Output Power Receiver Sensitivity, Flash Size	**Alex Yu**	**N.C. Chen**

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1. Introduction

1.1 Product Overview

AzureWave presents **AW-CU362** the advanced Stamp **Bluetooth 5.0 module** provides a highly cost-effective, flexible and easy to-use hardware/software device to build a new generation of connected, smart devices. These smart-connected devices enable device to deliver a broad-range of services to consumers including energy-management, demand-response, home automation and remote access. This allows a user to manage comfort and convenience, also run diagnostics and receive alerts and notifications, in addition to managing and controlling the device. Developers can leverage the rich connectivity features of these new smart devices to create a new generation of innovative new applications and services

The device builds upon the success of Dialog's Bluetooth microcontroller device using the Dialog DA14585 and software. Adding new enhancements and capabilities.

The **AW-CU362** is powered by production quality, field-tested Dialog software that includes a rich set of software components that work together to support the development of Smart devices, and enable these devices to connect to mobile clients such as smart-phones, Internet-based Cloud and Smart-Grid services. The feature-rich software stack enables OEMs to focus on application-specific software functionality, thus enabling rapid development and reduced software development costs and risks.

1.2 Features

1.2.1 Bluetooth

- **DA14585 (Dialog DA14585 is a Bluetooth Low Energy 5.0 SoC)**
  - **Processor**
    - ARM Cortex-M0, 32bit, 16MHz
    - Dedicated Link Layer Processor
    - AES-128 bit encryption Processor
  - **Memory**
    - 64 KB OTP Memory
    - 128 KB ROM
    - 96 KB Retention SRAM
  - **External Flash**
    - 1M Bit SPI flash
  - **Wireless**
    - Bluetooth V5.0
  - **Antenna**
    - Embedded Antenna
  - **IO Interfaces**
    - UART
    - SWD
    - GPIO
    - SPI
    - I2C
    - ADC
  - **Power input**
    - Single 3.3V Power Input
  - **Package**
    - Stamp Module – 19.6 mm x 15 mm x 2.45 mm
  - **Certifications**
    - TBD

1.3 Block Diagram

Block Diagram of AW-CU362

1.4 Specifications Table

1.4.1 General

Features	Description
Product Description	AW-CU362 Bluetooth 5.0 Stamp Module
Major Chipset	Dialog DA14585
Host Interface	UART
Dimension	19.6 mm x 15 mm x 2.45 mm
Package	30-pin
Antenna	Embedded Antenna
Weight	TBD

1.4.2 Bluetooth

Features	Description
Bluetooth Standard	Bluetooth V5.0 complaint
Frequency Rage	2402~2480MHz
Modulation	GFSK (1Mbps) for Bluetooth
Output Power (Board Level Limit)*	0±2 dBm
Receiver Sensitivity	-92 dBm (typical)
Data Rate	Bluetooth V5.0 Only

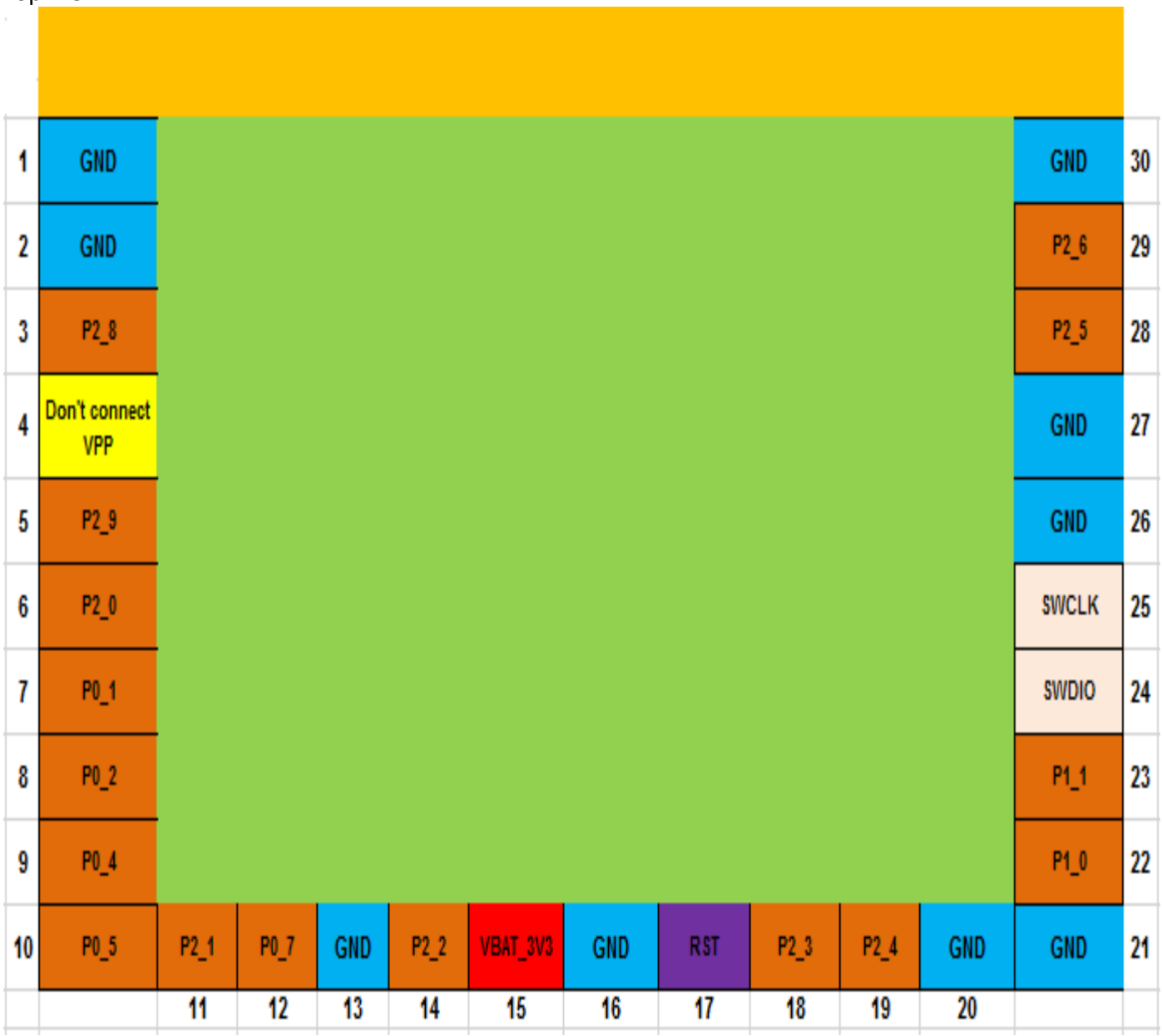
1.4.3 Operating Conditions

Features	Description
Operating Conditions	
Voltage	3.3V +/- 8%
Operating Temperature	-30 ~ 85℃
Operating Humidity	TBD
Storage Temperature	-40 ~ 85℃
Storage Humidity	TBD
ESD Protection	
Human Body Model	TBD
Changed Device Model	TBD

2. Pin Definition

2.1 Pin Map

Top View



2.2 Pin Table

2.2.1 Power

Pin No	Definition	Basic Description	Type	Level
15	VBAT_3V	3.3V Power input	PWR	3.3V
4	VPP	Leave VPP floating		

2.2.2 Reset and SWD

Pin No	Definition	Basic Description	Type	Level
24	SWDIO	JTAG Data input/output.	I/O	3.3V
25	SWCLK	JTAG clock signal input.	I/O	3.3V
17	RST	Reset signal (active high). Must be connected to GND if not used.	I	3.3V(internal pull low 2.2k ohm)

2.2.3 GPIO

Pin No	Definition	Function 0	Function 1	Function 2	Function 3	Function 4	Function 5	Type	Level
3	P2_8	GPIO	UART0(CTS)	QD_CHA_X				I/O	3.3V
5	P2_9	GPIO	UART0(RTS)	QD_CHB_X				I/O	3.3V
6	P2_0	GPIO	UART2(CTS)					I/O	3.3V
7	P0_1	GPIO	ADC[1]					I/O	3.3V
8	P0_2	GPIO	ADC[2]					I/O	3.3V
9	P0_4	GPIO	UART0(TX)					I/O	3.3V
10	P0_5	GPIO	UART0(RX)					I/O	3.3V
11	P2_1	GPIO	SPI_CLK					I/O	3.3V
12	P0_7	GPIO	UART2(RTS)					I/O	3.3V
14	P2_2	GPIO	SPI_DI					I/O	3.3V
18	P2_3	GPIO	SPI_DO	QD_CHA_Y				I/O	3.3V
19	P2_4	GPIO	SPI_EN	QD_CHB_Y				I/O	3.3V
22	P1_0	GPIO	UART2(TX)	QD_CHA_Z				I/O	3.3V
23	P1_1	GPIO	UART2RTX)	QD_CHB_Z				I/O	3.3V
28	P2_5	GPIO	SDA					I/O	3.3V
29	P2_6	GPIO	SCL					I/O	3.3V

2.2.4 GND

Pin No	Definition	Basic Description	Type	Level
1	GND			
2				
13				
16				
20				
21				
26				
27				
30				

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VBAT_3V	3.3V power supply		3.3	3.6	V

3.2 Recommended Operating Conditions

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VBAT_3V	3.3V power supply	3.0	3.3	3.6	V

3.3 Digital IO Pin DC Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VIH	Input High Voltage	0.84			V
VIL	Input Low Voltage			0.36	V

3.4 Power up Timing Sequence

3.5 Power Consumption*

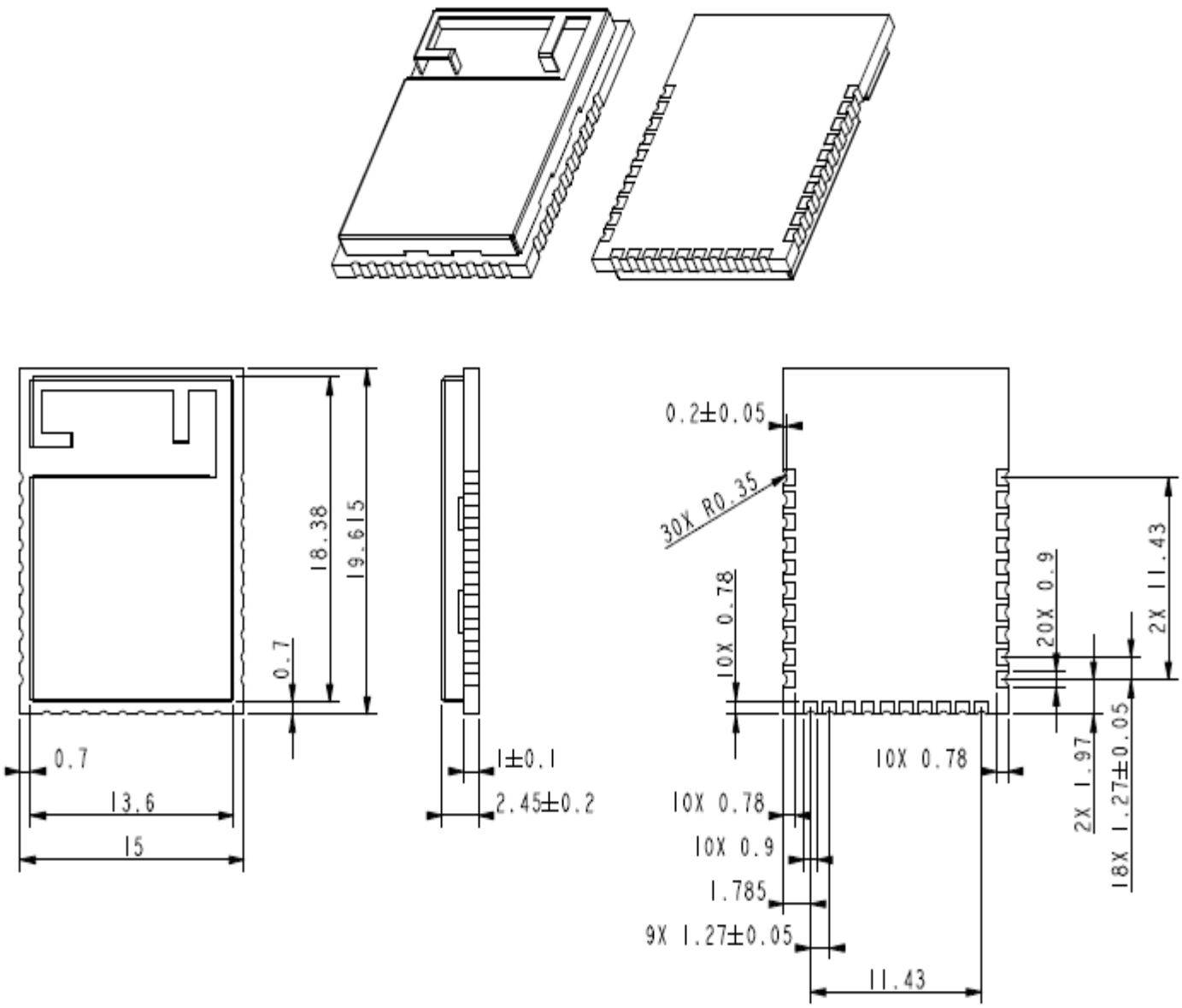
3.5.1 Bluetooth

	Item			VBAT=3.3V				
				Transmit			Receive	
Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	Max.	Avg.	DUTY %	Max.	Avg.

* The power consumption is based on Azurewave test environment, these data for reference only.

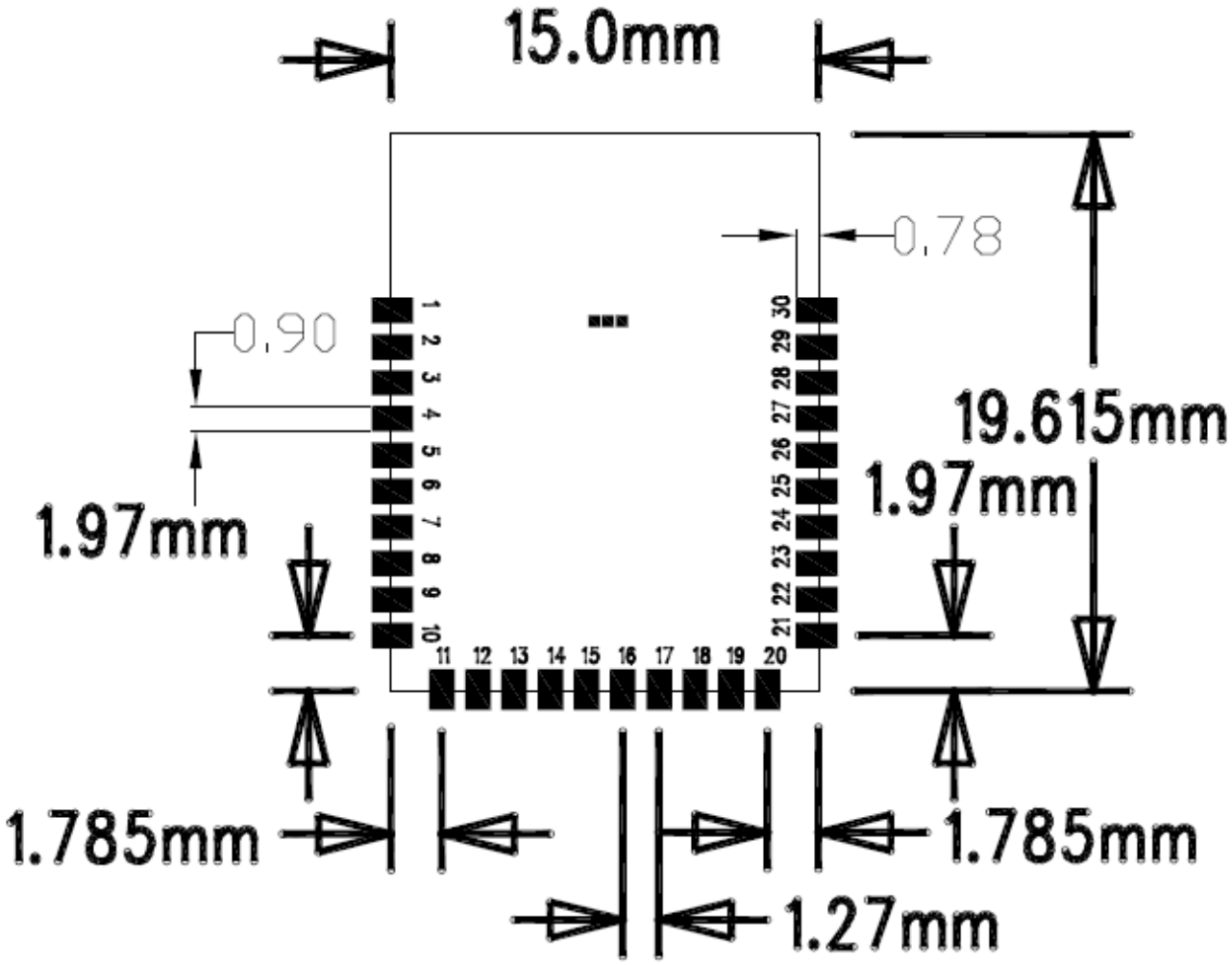
4. Mechanical Information

4.1 Mechanical Drawing



4.2 PCB Footprint

AW-CU362 TOP View PCB Layout Footprint



TOP VIEW

5. Packaging Information

TBD

[FCC statement]

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions,

may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on,

the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/ TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20cm may be maintained between the antenna and users.

The final end product must be labeled in a visible area with the following: "Contains FCC ID: XYZMODEL " and "Contains IC: XXXXX-YYYYYYY"

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an

OEM or integrator, but should not be distributed to the end user.

1) This device is intended for OEM integrators only.

2) Please see the full Grant of Equipment document for other restrictions.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
