User Manual

PRODUCT NAME : Wireless audio Module

MODEL NAME : WL1NB6(TWBI-H002D)

Table of Contents

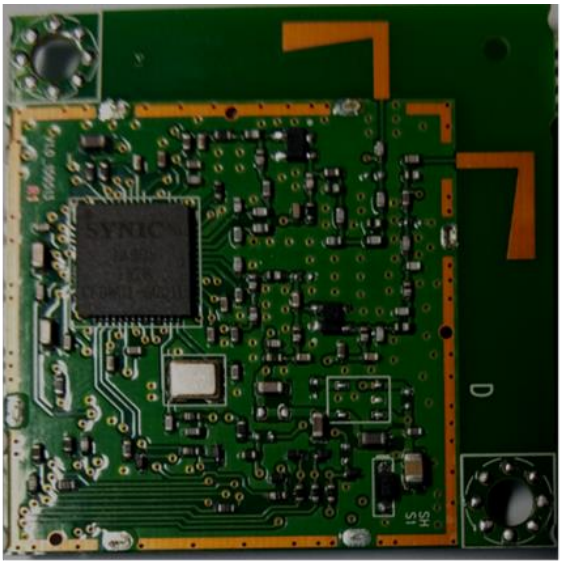
1. Features

TWBI-H002D is the small size and low power module for Wireless Audio.

TWBI-H002D is based on Syncomm IA9Q.

- 5.2/5.8GHz GFSK Modulation
- Size : 35mm x 35mm x 5.03 mm
- Internal PCB Printed Antenna
- I2S digital audio interface
- I2C control with external device
- Low audio delay time < 20ms
- Application : Wireless Speaker, Woofer, TV Theater

2. Module Photo



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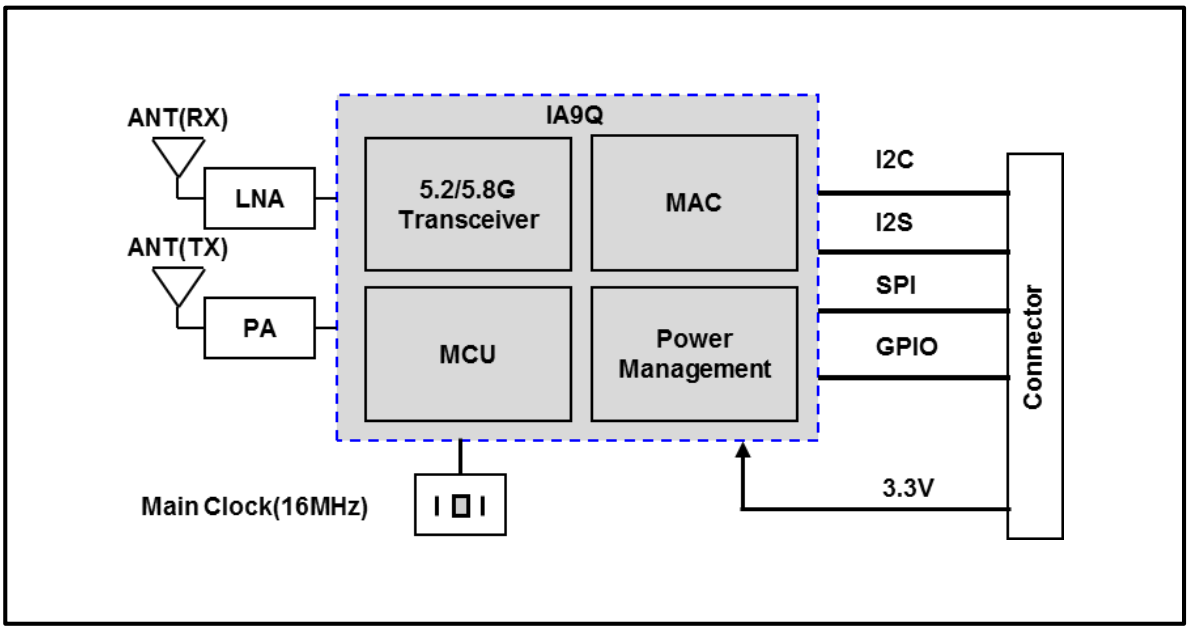
3. Block Diagram



4. Storage Conditions

Parameter	Min	Max	Unit
Storage Temperature	-10	+80	℃
Storage Humidity (@ 40℃)	-	90	%

Caution : The specifications above the Table define levels at which permanent damage to the device can occur. Function operation is not guaranteed under these conditions. Operating at absolute maximum conditions for extend periods can adversely affect the long-term reliability of the device.

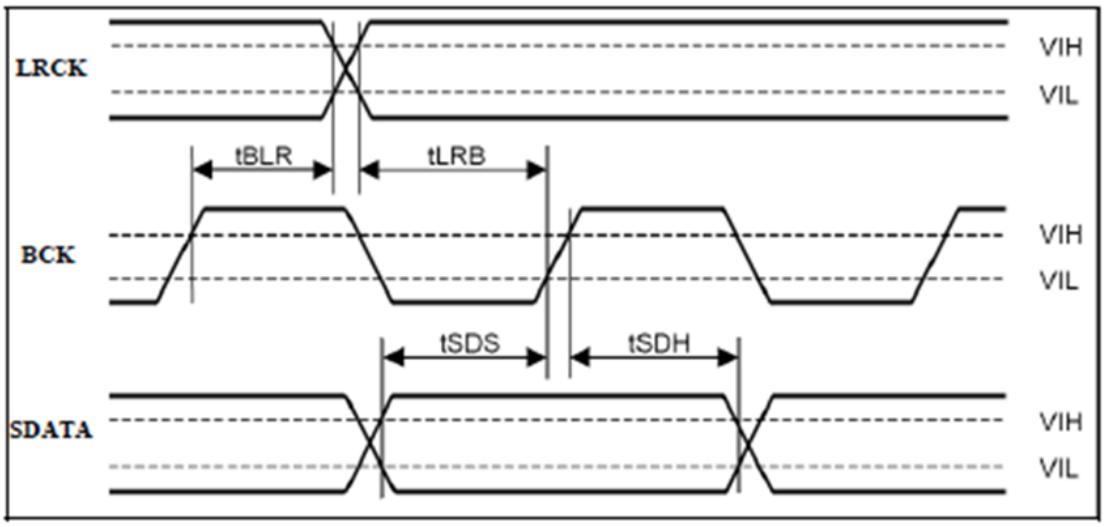
- Other conditions
  1) Do not use or store modules in the corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are contained.
     Also, avoid exposure to moisture.
  2) Store the modules where the temperature
     and relative humidity do not exceed 5 to 40℃ and 20 to 60%.

5. Operating Conditions

Parameter	Min	Typ	Max	Unit
Ambient Temperature	0	-	+60	℃
Operating Humidity (40℃)	-	-	85	%
Supply Voltage	3.15	3.3	3.45	Vdc

6. Interface Specification

1) I2S Timing



Symbol	Parameter	Min	Typ	Max	Unit
tBLR	BCK rising to LRCK edge	60			ns
tLRB	LRCK edge to BCK rise	60			ns
tSDS	SDATA setup time	60			ns
tSDH	SDATA hold time	60			ns

7. Pin Description

Pin No.	Pin Name	I/O	Pin Description	Pin No.	Pin Name	I/O	Pin Description
1	VCCIO	PWR	VCC supply	14	SPI_CLK	I/O	Clock pin of SPI interface
2	GND	GND	Ground	15	SPI_CS	I/O	Chip select pin of SPI interface
3	GND	GND	Ground	16	SPI_WP	I/O	Write protect pin of SPI interface, low active
4	BLUE_LED	I/O	GPIO	17	RESET	I	Reset pin, low active
5	RED_LED	I/O	GPIO	18	P_SENSE	I/O	GPIO
6	GND	GND	Ground	19	P_CTL	I/O	GPIO
7	NC	I/O	Not connect	20	PWM_RST	I/O	GPIO
8	I2S_DATA	I/O	Data pin of I2S signal	21	AMP_PDN	I/O	GPIO
9	GND	GND	Ground	22	AMP_SD	I/O	GPIO
10	I2C_CLK	I/O	Clock pin of I2C control signal	23	PARING_SW	I/O	GPIO
11	I2C_DATA	I/O	Data pin of I2C control signal	24	I2S_BCK	I/O	BCK pin of I2S signal
12	SPI_DI	I/O	Data input pin of SPI interface	25	GND	GND	Ground
13	SPI_DO	I/O	Data out pin of SPI interface	26	I2S_LRCK	I/O	LRCK pin of I2S

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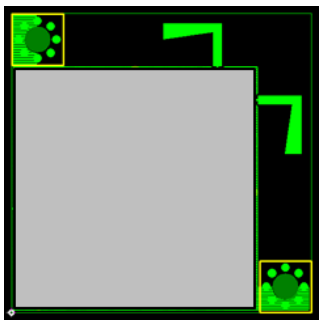

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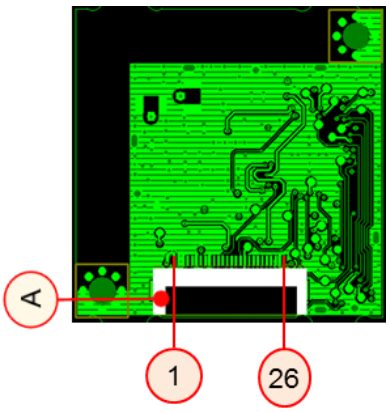
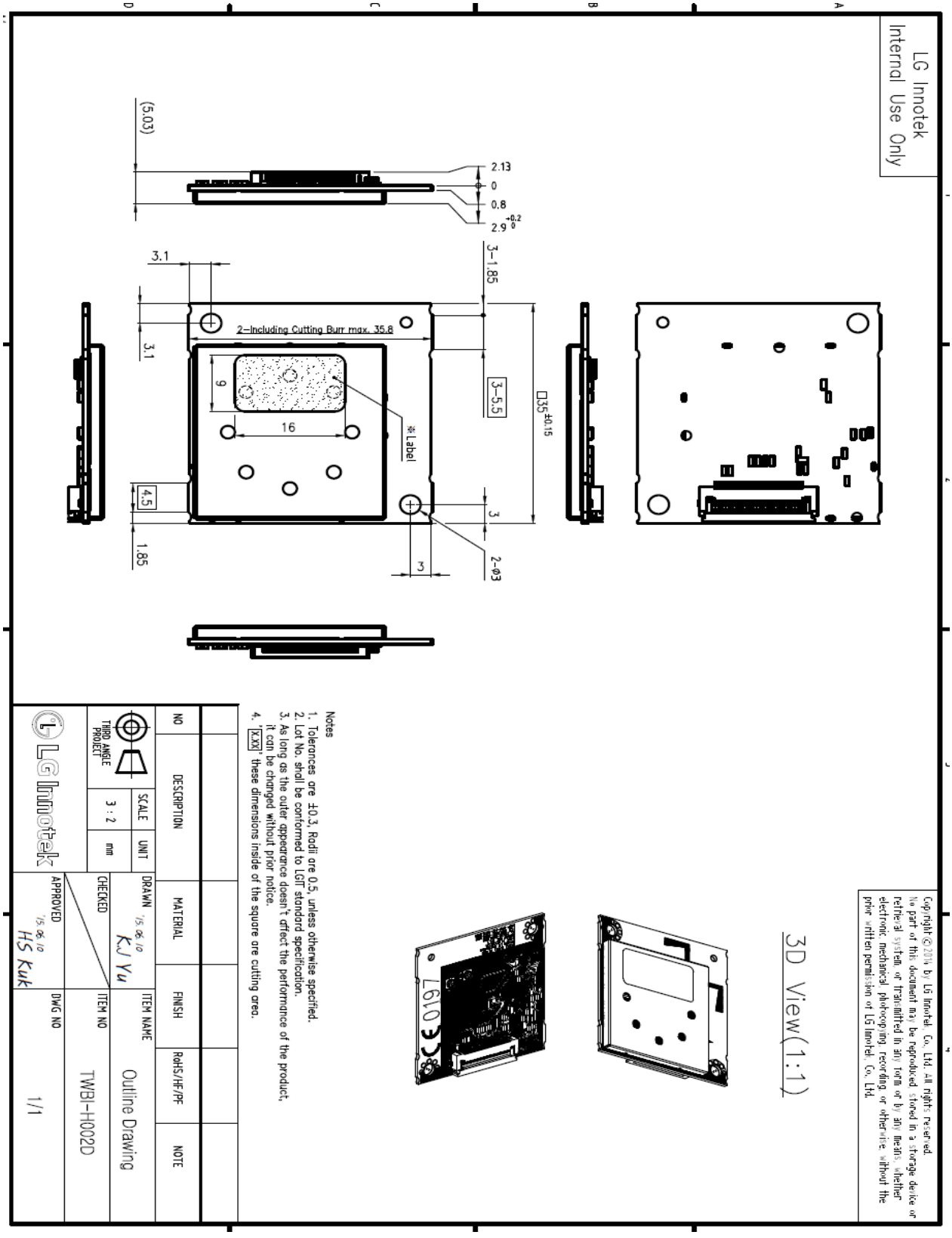


Note.

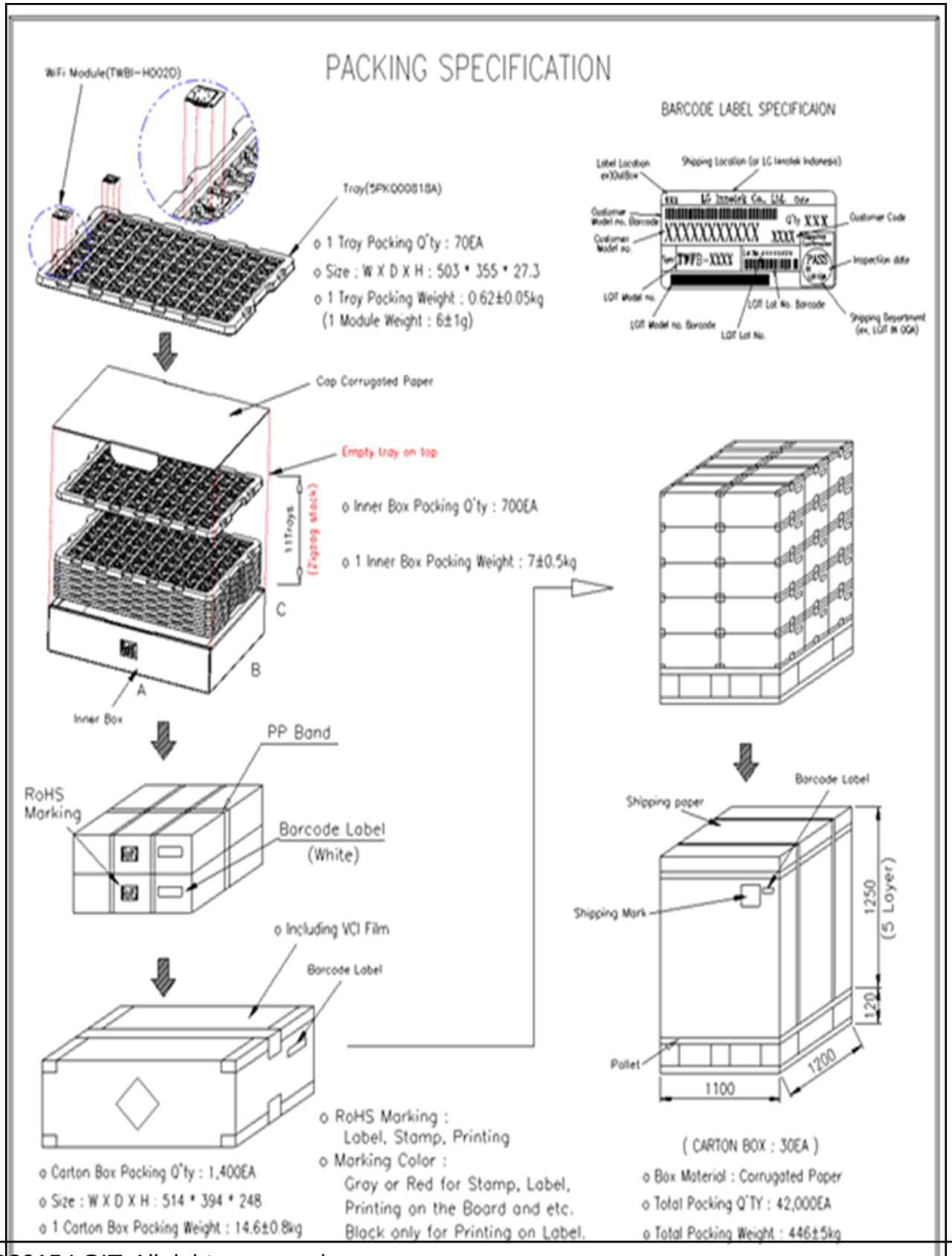
1) Recommend a Module install sequence for prevent operation failure
   - Supply 3.3V power

2) Connector: 26Pin SMD Connector (A)

8. Outline Drawing



9. Packing Information



Annex I

ANATEL Label