

User Manual

PRODUCT NAME : Wireless audio Module

MODEL NAME : WL1NB5(TWBI-H001D)

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Table of Contents

No.	Description	Page
1	Features	2
2	Module Photo	2
3	Block Diagram	3
4	Storage Conditions	4
5	Operating Conditions	4
6	Interface Specification	5
7	Pin Description	6
8	Outline Drawing	7
9	Packing Information	8

1. Features

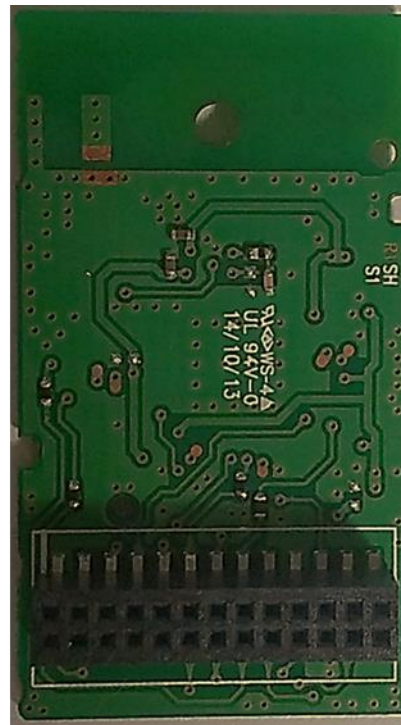
TWBI-H001D is the small size and low power module for Wireless Audio.
 TWBI-H001D is based on Syncomm IA3S4.

- 2.4GHz GFSK Modulation
- Size : 34mm x 19mm x 8.1 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

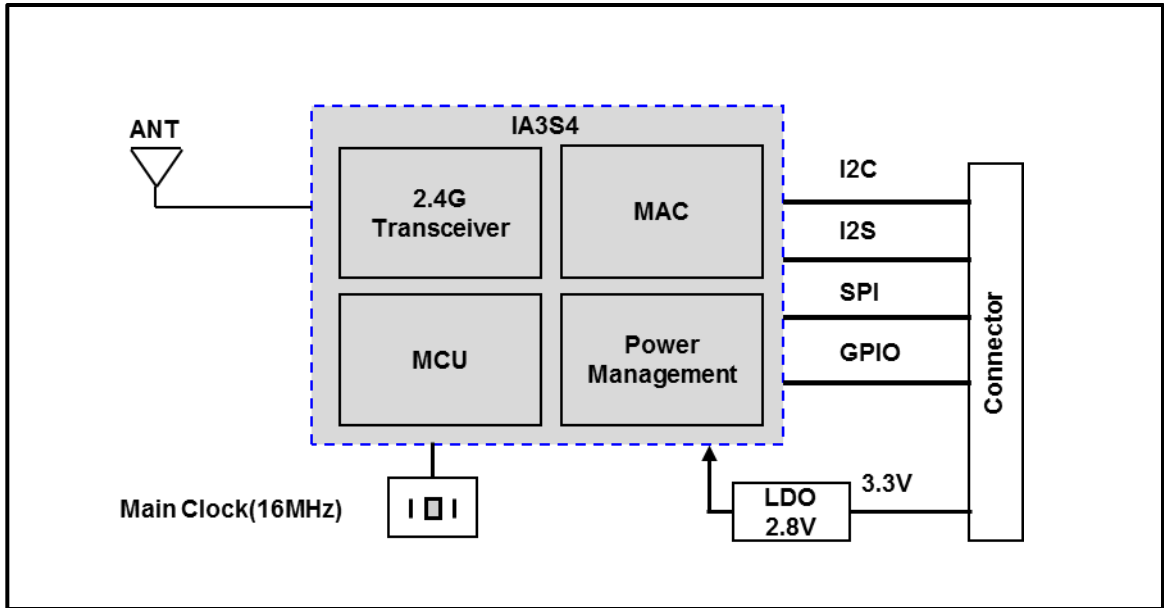


< TOP View >



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3. Block Diagram



4. Storage Conditions

Parameter	Min	Max	Unit
Storage Temperature	-10	+80	°C
Storage Humidity (@ 40°C)	-	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

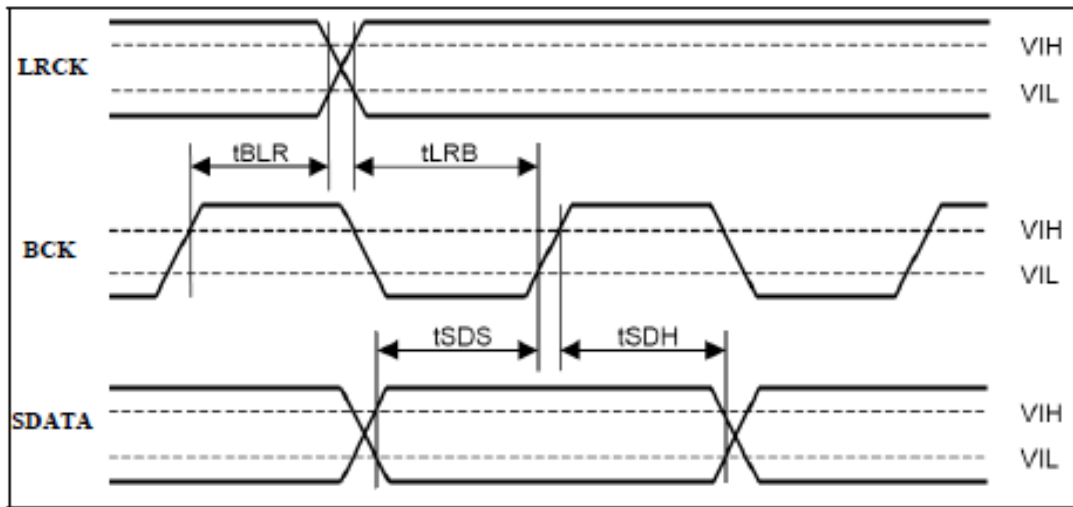
- 1) Do not use or store modules in the corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are contained.
Also, avoid exposure to moisture.
- 2) Store the modules where the temperature and relative humidity do not exceed 5 to 40°C and 20 to 60%.
- 3) Assemble the modules within 6 months.
Check the soldering ability in case of 6 months over.

5. Operating Conditions

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

6. Interface Specification

1) I2S Timing

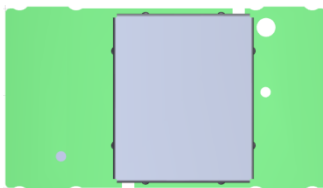


Symbol	Parameter	Min	Typ	Max	Unit
t_{BLR}	BCK rising to LRCK edge	60			ns
t_{LRB}	LRCK edge to BCK rise	60			ns
t_{SDS}	SDATA setup time	60			ns
t_{SDH}	SDATA hold time	60			ns

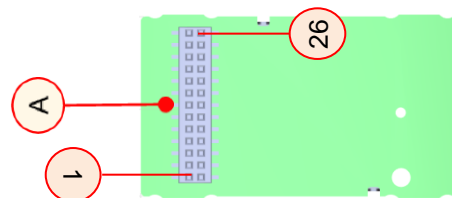
7. Pin Description

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

< TOP View >



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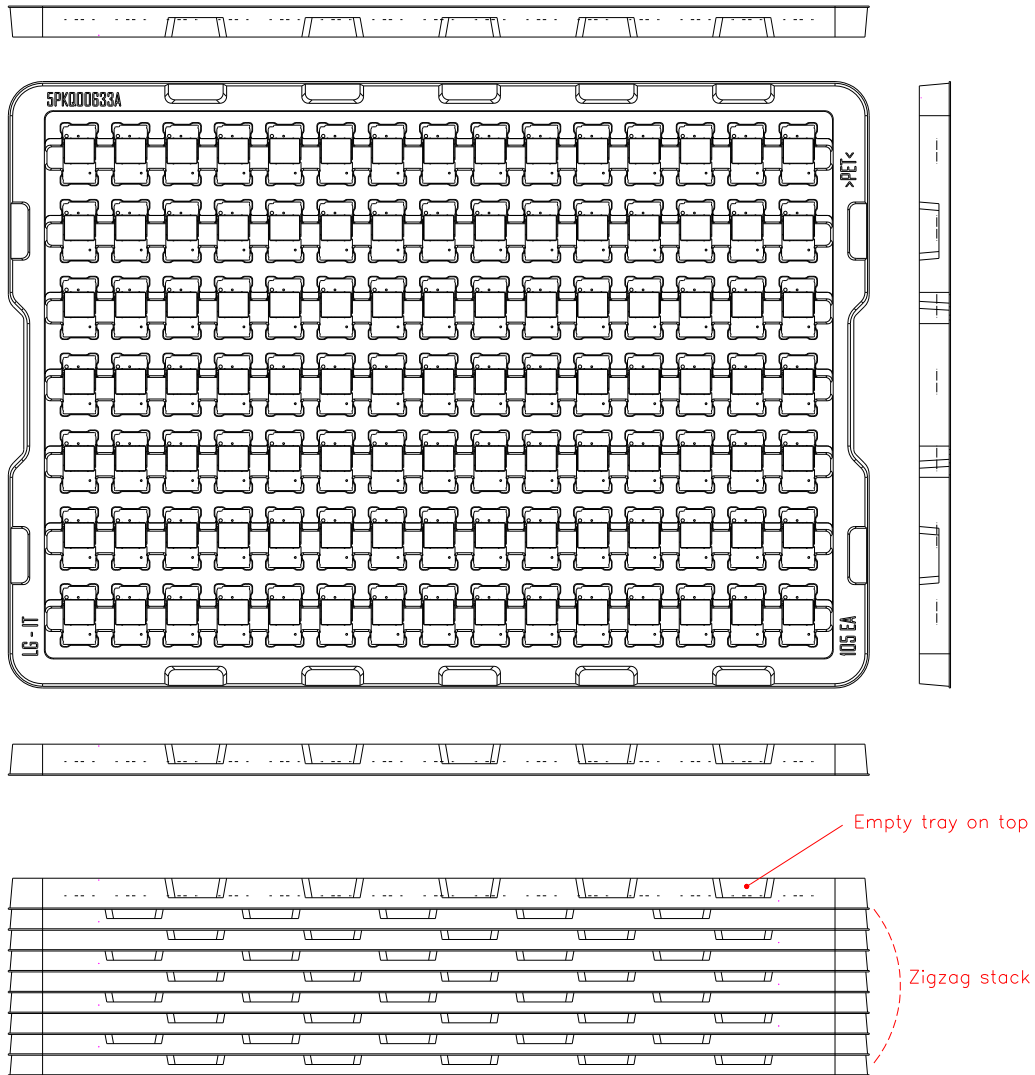
Note.

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

2) Connector: 26Pin SMD Connector (A)

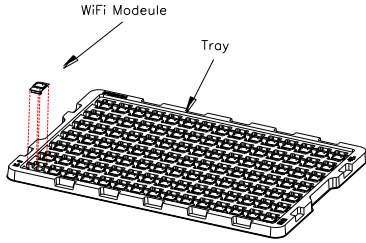
9. Packing Information

PACKING SPECIFICATION



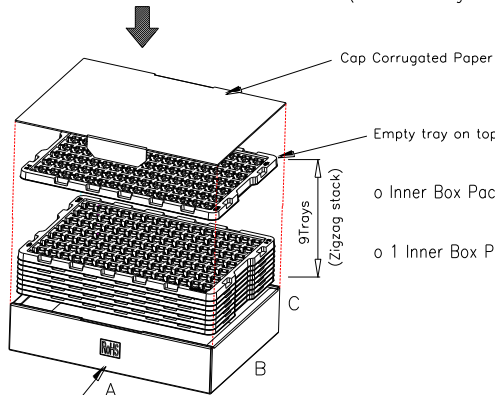
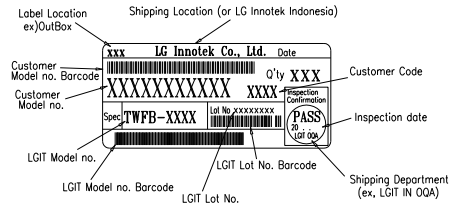
PART NO.		NAME		MATERIAL			SPEC.		FINISH		A4 SIZE
							UNIT mm	SCALE N/A	5PKQ00633A		
						APPD.	CHKD.	DSGD.	DRAW.	TITLE Packing Tray	
							'14.09.05 Yang J. E.	'14.09.05 Yu K. J.	'14.09.05 Muhamad Wiradinata	DOCUMENT NO. 1/2	
ZONE	SYMB	DATE OR NO.	APPD	CHKD	DSGD						

PACKING SPECIFICATION

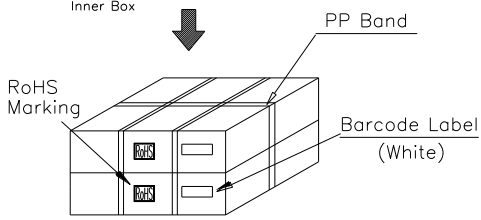
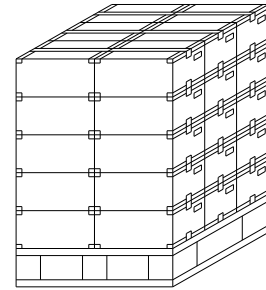


- o 1 Tray Packing Q'ty : 105EA
- o Size : W X D X H : 503 * 355 * 18.2
- o 1 Tray Packing Weight : 0.48±0.1kg
(1 Module Weight : 2.62±1g)

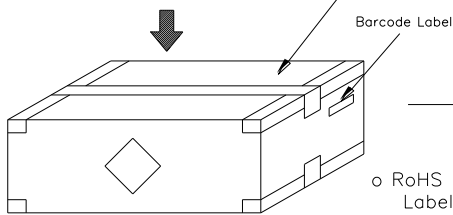
BARCODE LABEL SPECIFICATION



- o Inner Box Packing Q'ty : 840EA
- o 1 Inner Box Packing Weight : 4.6±0.5kg

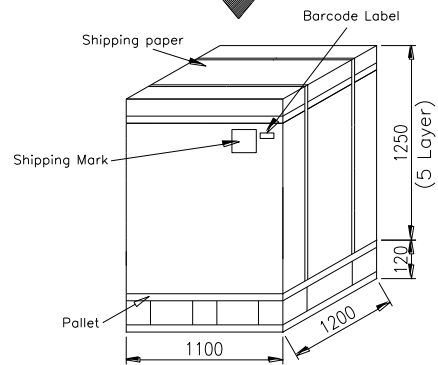


o Including VCI Film



- o Carton Box Packing Q'ty : 1,680EA
- o Size : W X D X H : 514 * 394 * 248
- o 1 Carton Box Packing Weight : 10.0±0.8kg

- o RoHS Marking : Label, Stamp, Printing
- o Marking Color : Gray or Red for Stamp, Label, Printing on the Board and etc. Black only for Printing on Label.



(CARTON BOX : 30EA)

- o Box Material : Corrugated Paper
- o Total Packing Q'TY : 50,400EA
- o Total Packing Weight : 302±5kg

PART NO.		NAME		MATERIAL		SPEC.		FINISH		A4
						UNIT mm	SCALE N/A	TWBU-T001D TWBI-H001D		
						DSGD.	DRAW.	TITLE EXP. Packing Specification		
								DOCUMENT NO.		2/2
ZONE	SYMB	DATE OR NO.	APPD	CHKD	DSGD	APPD.	CHKD.	DRAW.		

FCC Information

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.

Note: This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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 correct the interference by one or more of the following measures:

- 1.1. Reorient or relocate the receiving antenna.
- 1.2. Increase the separation between the equipment and receiver.
- 1.3. Connect the equipment into an outlet on a circuit different from that to which receiver is connected.
- 1.4. Consult the dealer or experienced radio/TV technician for help.

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Information for OEM Integrator

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

End product labelling

The label for end product must include "Contains FCC ID: BEJ9QK-DMWL1NB5".

"CAUTION : Exposure to Radio Frequency Radiation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated with minimum distance of 20cm between the radiator and your body. This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users."