

Wireless LAN + Bluetooth[®] Module

WYSBCVJXM

(IEEE802.11a/b/g/n + Bluetooth[®] 4.0)

Brief Data Report

Document constituent list

Control name	Control No.	Document Page
General Items	HD-AG-A111325	1/2 - 2/2
Absolute maximum ratings	HD-AM-A111325	1/1
Electrical characteristics	HD-AE-A111325	1/1
Circuit schematic	HD-MC-A111325	1/1
Outline / Appearance	HD-AD-A111325	1/2 - 2/2
Pin Layout	HD-BA-A111325	1/3 - 3/3

Rev. records

28-Feb.-2014> Ver.1.0 Released.

Control No. HD-AG-A111325 (1/1)	Control name General Items
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Scope

This specification ("Specification") applies to the hybrid IC for use Wireless LAN and **Bluetooth**[®] module ("Product") manufacture by TAIYO YUDEN Co., Ltd. ("TAIYO YUDEN")

1. Product Number: WYSBCVJXM
2. Function: Radio frequency transfer Module.(**IEEE802.11abgn** and **Bluetooth**[®] 4.0 standard conformity)
3. Application: Handy Terminal, Game, Audio-visual equipment, Digital home electrical appliance and Embedded application.
4. This product conforms to RoHS Directive (2002/95/EC).
5. Outline: 73pin leadless chip carrier.
6. Marking: Part number and Lot number.
7. Features:
 - IEEE802.11abgn** and **Bluetooth**[®] 4.0 standard conformity
 - Interface: SDIO, USB
 - Embedded MPU for reducing loads on host processor
 - Built-in EEPROM (MAC address)
8. Security: WEP (64/128), TKIP, AES, WPA, WPA2, WAPI
9. Packing: Packaging method: Reel
 - Packaging unit: 1,000pcs./Reel
 - 5,000pcs./Box
10. Terminal: 73pin leadless chip carrier.
11. Mount: SMD Type

Control No. HD-AM-A111325	(1/1)	Control name Absolute maximum ratings
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Absolute maximum ratings

Item	Symbol	Rating			Unit	Remark
		Min.	Typ.	Max.		
Supply voltage 1	USB_VIN	-	3.3	4.1	V	
Supply voltage 2	SD_VIN	-	1.8	2.2	V	
		-	3.3	4.0	V	
Supply voltage 3	VFEM_A/B	-	3.3	4.0	V	
Supply voltage 4	VIO	-	1.8	2.2	V	
		-	2.6	3.1	V	
		-	3.3	4.0	V	
Supply voltage 5	VDD18	-	1.8	1.98	V	

Recommendation operating range

Item	Symbol	Rating			Unit	Remark
		Min.	Typ.	Max.		
Supply voltage 1	USB_VIN	2.97	3.3	3.63	V	
Supply voltage 2	SD_VIN	1.62	1.8	1.98	V	
		2.97	3.3	3.63	V	
Supply voltage 3	VFEM_A/B	2.97	3.3	3.6	V	
Supply voltage 4	VIO	1.7	1.8	1.98	V	
		2.5	2.6	2.7	V	
		2.97	3.3	3.63	V	
Supply voltage 5	VDD18	1.71	1.8	1.89	V	
Operation temperature range	Taopr	-30	25	85	Degrees C	
Storage temperature range	Tstg	-40		85	Degrees C	

Control No. HD-AE-A111325	(1/1)	Control name Electrical characteristics
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1. 2.4GHz Band RF Specifications

The Specification applies for Topr.= 25 degrees C, Supply voltage=Typical voltage

ANT0 and ANT1 commonness.

No.	Parameter	Condition	Symbol	Min	Typ	Max	Unit	Remark
1	TX Power	11Mbps, 11b	Po2-1		15		dBm	
		54Mbps, 11g	Po2-2		12			
		MCS7, 20MHz BW, 11n	Po2-3		12			
		MCS7, 40MHz BW, 11n	Po2-4		12			
2	Rx sensitivity	11Mbps, 11b	SEN2-1		-88		dBm	
		54Mbps, 11g	SEN2-2		-73			
		MCS7, 20MHz BW, 11n	SEN2-3		-69			
		MCS7, 40MHz BW, 11n	SEN2-4		-66			

2. 5GHz Band RF Specifications

The Specification applies for Topr.= 25 degrees C, Supply voltage=Typical voltage

ANT0 and ANT1 commonness.

No.	Parameter	Condition	Symbol	Min	Typ	Max	Unit	Remark
1	TX Power	54Mbps, 11a	Po5-1		12		dBm	
		MCS7, 20MHz BW, 11n	Po5-2		12			
		MCS7, 40MHz BW, 11n	Po5-3		10			
2	Rx sensitivity	54Mbps, OFDM	SEN5-1		-73		dBm	
		MCS7, 20MHz BW, OFDM	SEN5-2		-69			
		MCS7, 40MHz BW, OFDM	SEN5-3		-66			

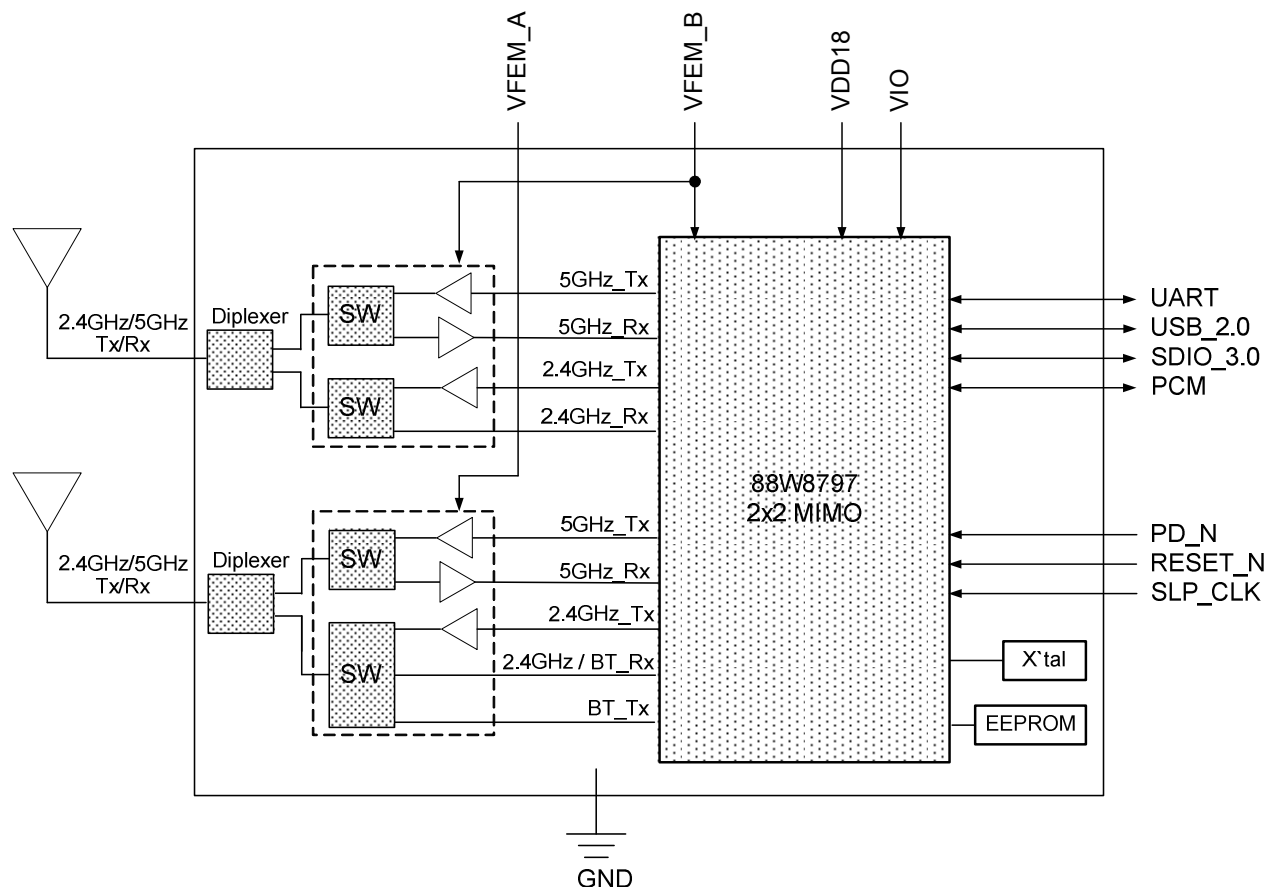
3. RF Specifications (*Bluetooth®*)

The Specification applies for Topr.= 25 degrees C, Supply voltage =Typical voltage.

No.	Parameter	Condition	Sym	Min	Typ	Max	Unit	Remark
1	Tx Power		PO		0		dBm	
2	Sensitivity	Basic	SENB		-86		dBm	

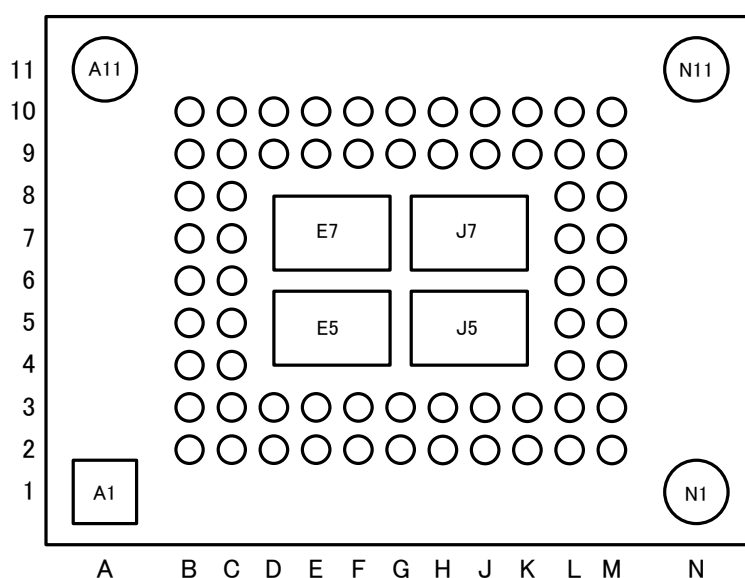
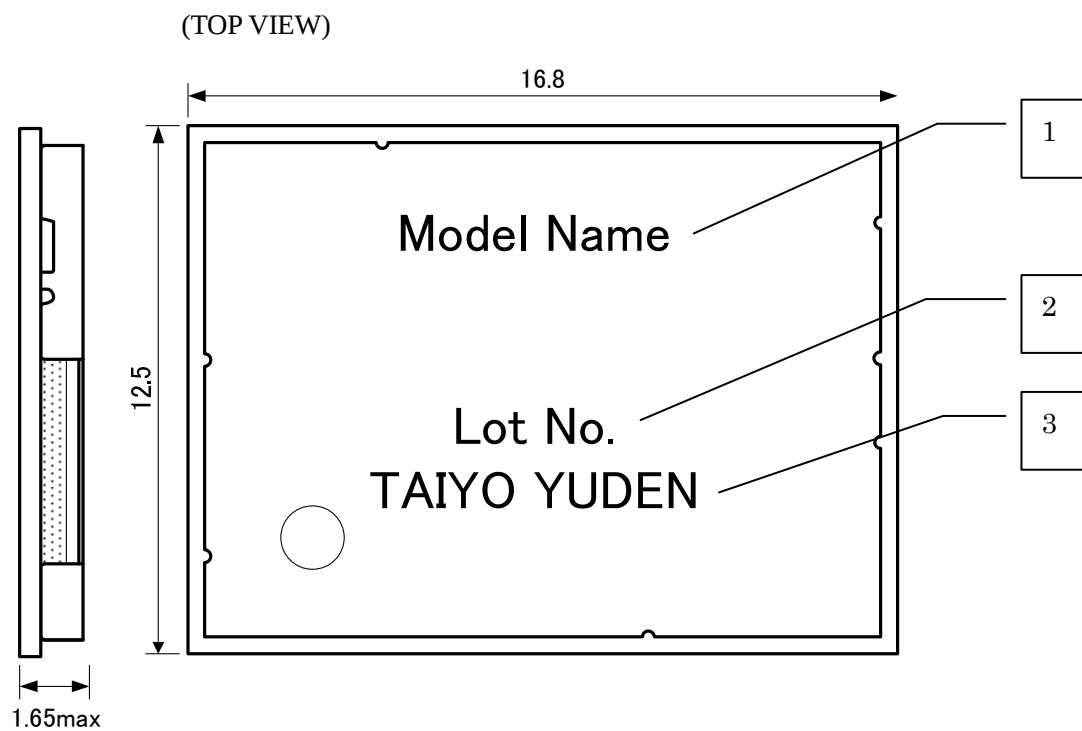
Control No. HD-MC-A111325	Control name Circuit Schematic
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Block Diagram



Control No. HD-AD-A111325	Control name Outline/Appearance
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Unit: mm, Tolerances unless otherwise specified: $\pm 0.2\text{mm}$



1. Model Name: Refer to General items (Product Number)
2. Lot No.: Refer to instruction for lot number
3. TAIYO YUDEN

TAIYO YUDEN

Control No. HD-BA-A111325	Control name Pin Layout
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Pin Descriptions

Terminal No.	Terminal Name	I/O	Pwr Domain	Description	Function	Internal PU
A1	GND	-	GND	Ground	PWR	-
A11	GND	-	GND	Ground	PWR	-
B2	RES	-	-	Reserved. No Connection	-	-
B3	SLP_CLK	I	VDD18	Sleep Clock Input	CLOCK	-
B4	GND	-	GND	Ground	PWR	-
B5	USB_DN	I/O	USB_VIN	USB Signal Differential Data Negative	USB	-
B6	USB_DP	I/O	USB_VIN	USB Signal Differential Data Positive	USB	-
B7	GND	-	GND	Ground	PWR	-
B8	VCORE	-	-	VCORE for decupling	PWR	-
B9	USB_VIN	I	USB_VIN	3.3V Power Supply (When not using the USB I/F is No Connection)	PWR	-
B10	RES	-	-	Reserved. No Connection	-	-
C2	RES	-	-	Reserved. No Connection	-	-
C3	RES	-	-	Reserved. No Connection	-	-
C4	RES	-	-	Reserved. No Connection	-	-
C5	GND	-	GND	Ground	PWR	-
C6	GND	-	GND	Ground	PWR	-
C7	HM[0]	I	-	Host I/F Select (See Table-1)	CTRL	Enable
C8	HM[1]	I	-	Host I/F Select (See Table-1)	CTRL	Enable (Unclear)
C9	HM[2]	I	-	Host I/F Select (See Table-1)	CTRL	Enable
C10	VIO	I	VIO	1.8/3.3V Digital Power Supply	PWR	-
D2	SD_D2	I/O	VIO	SDIO Data line Bit[2]	SDIO	Enable
D3	SD_D3	I/O	VIO	SDIO Data line Bit[3]	SDIO	Enable
D9	WP	-	-	No Connection	-	Enable
D10	GND	-	GND	Ground	PWR	-
E2	SD_CMD	I/O	VIO	SDIO Command/Response	SDIO	Enable
E3	SD_CLK	I	VIO	SDIO Clock Input	SDIO	Enable
E5	GND	-	GND	Ground	PWR	-
E7	GND	-	GND	Ground	PWR	-
E9	GND	-	GND	Ground	PWR	-
E10	RES	I	VDD18	No Connection	CLOCK	-
F2	SD_D0	I/O	VIO	SDIO Data line Bit[0]	SDIO	Enable
F3	SD_D1	I/O	VIO	SDIO Data line Bit[1]	SDIO	Enable
F9	PCM_SYNC	I/O	VIO	PCM Sync Pulse Signal (Output if PCM master. Input if PCM slave.)	PCM	Enable

Control No. HD-BA-A111325	Control name Pin Layout
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Terminal No.	Terminal Name	I/O	Pwr Domain	Description	Function	Internal PU
F10	GND	-	GND	Ground	PWR	-
G2	SD_VIN	I	VIO	1.8/3.3V Digital SDIO Power Supply (When not using the SDIO I/F is No Connection)	PWR	-
G3	GND	-	GND	Ground	PWR	-
G9	PCM_CLK	I/O	VIO	PCM Clock Signal (Output if PCM master. Input if PCM slave.)	PCM	Enable
G10	VDD18	I	VDD18	1.8V Power Supply	PWR	-
H2	TCK	I	VIO	JTAG Test Clock Input	JTAG	Enable
H3	TMS	I	VIO	JTAG Controller Select	JTAG	Enable
H9	PCM_DOUT	O	VIO	PCM Data Output Signal	PCM	Enable
H10	GPIO_16	I/O	VIO	GPIO_16	CTRL	Enable
J2	RESETN	I	VIO	Reset (0:Reset, 1:Normal Operation)	CTRL	Enable
J3	TDI	I	VIO	JTAG Test Data Input	JTAG	Enable
J5	GND	-	GND	Ground	PWR	-
J7	GND	-	GND	Ground	PWR	-
J9	PCM_DIN	I	VIO	PCM Data Input Signal	PCM	Enable
J10	GPIO_4	I/O	VIO	GPIO_4	CTRL	Enable
K2	PDN	I	VIO	Power Down (no internal pull-up on this pin) (0: Full Power Down, 1: Normal Operation)	CTRL	None
K3	TDO	O	VIO	JTAG Test Data Output	JTAG	Enable
K9	UART_RTS	O	VIO	UART_RTSN	UART	Enable
K10	GPIO_0	I/O	VIO	GPIO_0	CTRL	Enable
L2	GND	-	GND	Ground	PWR	-
L3	GND	-	GND	Ground	PWR	-
L4	CON[4]	I	VFEM_A/B	Reference clock frequency detection (0: REF CLK detection by strap 1: REF CLK detection by calibration of sleep clock)	CTRL	Enable
L5	CON[9]	-	-	No Connection (reserve: sleep clock less)	-	Enable
L6	CON[11]	-	-	No Connection (reserve: sleep clock less)	-	Enable
L7	CON[10]	-	-	No Connection (reserve: sleep clock less)	-	Enable
L8	GND	-	GND	Ground	PWR	-
L9	UART_CTS	I	VIO	UART_CTSN	UART	Enable
L10	UART_SIN	I	VIO	UART_SIN	UART	Enable
M2	GND	-	GND	Ground	PWR	-
M3	DB_ANT_B	I/O	-	2.4G/5G RF (Wifi-11abgn, and BT) Antenna	RF	-
M4	GND	-	GND	Ground	PWR	-
M5	VFEM_B	I	VFEM_B	3.3V power supply	PWR	-
M6	VFEM_A	I	VFEM_A	3.3V power supply	PWR	-

Control No. HD-BA-A111325	Control name Pin Layout
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Terminal No.	Terminal Name	I/O	Pwr Domain	Description	Function	Internal PU
M7	GND	-	GND	Ground	PWR	-
M8	DB_ANT_A	I/O	-	2.4G/5G RF (Wifi-11abgn) Antenna	RF	-
M9	GND	-	GND	Ground	PWR	-
M10	UART_SOUT	O	VIO	UART_SOUT	UART	Enable
N1	GND	-	GND	Ground	PWR	-
N11	GND	-	GND	Ground	PWR	-

Table-1 HOST Interface / FW down load select

HM [2]	HM [1]	HM [0]	WLAN	BT / BLE	FW down load
0	1	1	USB	USB	USB
1	1	0	SDIO	SDIO	SDIO

Mouser Electronics

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