

LBEE5HY1MW Installation Manual



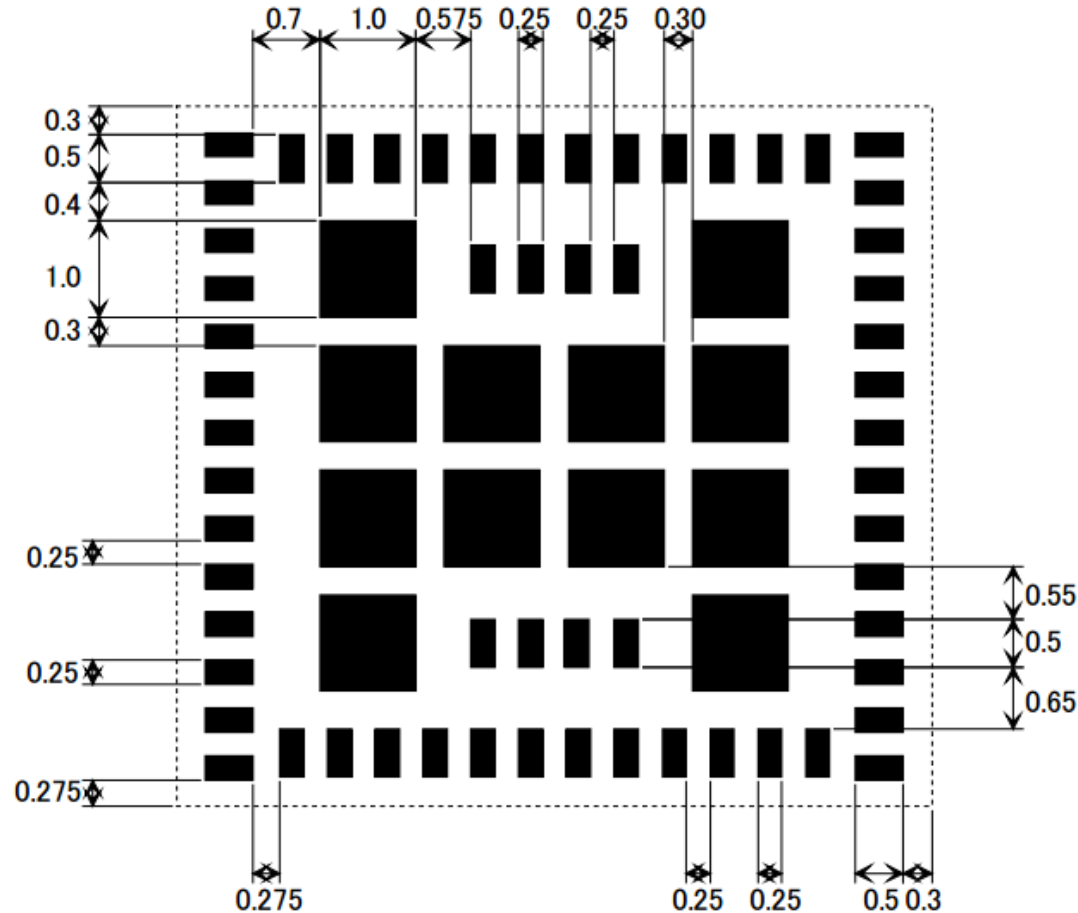
FCC ID of this product is as follows.
FCC ID: VPYLBEE5HY1MW

IC No. of this product is as follows.
IC : 772C-LBEE5HY1MW

Contents

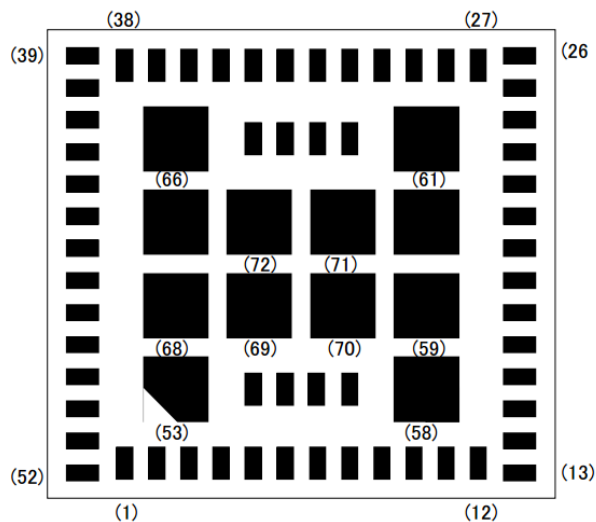
- 1.Land Pattern (Recommended)
- 2.PIN Layout
- 3.Supply Voltage
- 4.Theory of Operation-Channel List
5. Antenna

1. Land Pattern TOP View



* To avoid the short-circuit between the side shielding and a solder on the module land after the reflow, please locate the module land at 0.2mm away from module outline as above figure.

2. PIN Layout



Pin No.	Description	Pin No.	Description	Pin No.	Description	Pin No.	Description
1	GPIO_6	19	GND	37	I2S_CLK	55	GND
2	GPIO_0	20	SDIO_CLK	38	I2S_WS	56	GND
3	GPIO_3	21	GND	39	GND	57	JTAG_SEL
4	GPIO_5	22	VBAT_LDO	40	BT_DEV_WAKE	58	GND
5	GPIO_1	23	VBAT_SR	41	BT_HOST_WAKE	59	GND
6	GPIO_4	24	SR_PVSS	42	I2S_DI	60	GND
7	GPIO_2	25	VIN_LDO	43	NC	61	GND
8	BT_REG_ON	26	SR_PVSS	44	GND	62	BT_GPIO_4
9	WL_REG_ON	27	SR_PVSS	45	BT_UART_RXD	63	BT_GPIO_3
10	GND	28	SR_VLX	46	BT_UART_TXD	64	BT_GPIO_2
11	VIO	29	GND	47	BT_UART_RTS_N	65	BT_GPIO_5
12	GND	30	LPO_IN	48	BT_UART_CTS_N	66	GND
13	GND	31	GPIO_7	49	GND	67	GND
14	SDIO_DATA0	32	BT_PCM_IN	50	ANT	68	GND
15	SDIO_CMD	33	BT_PCM_SYNC	51	GND	69	GND
16	SDIO_DATA1	34	BT_PCM_OUT	52	GND	70	GND
17	SDIO_DATA2	35	BT_PCM_CLK	53	GND	71	GND
18	SDIO_DATA3	36	I2S_DO	54	NC	72	GND

3. Supply Voltage

Parameter		Min.	Typ.	Max.	Unit
Operating Temperature* ¹		-30	25	+85	deg.C
Supply Voltage	VBAT	3.2	3.3	4.8	V
	VIO* ² 1.8V/ 3.3V	1.62	-	3.63	V

*1: Surface temperature of the shield case

Functionality is guaranteed but specifications require derating at extreme temperatures

*2: VIO don't influence the RF characteristic. Tolerance of 1.8V and 3.3V is $\pm 10\%$.

4. Theory of Operation-Channel List

Theory of Operation-Software Security and Channel List

Frequency of operation			Scan	Ad-hoc mode
2.4GHz	11b/g/n (HT20)	2412-2462MHz	Active	Yes
	BT	2402-2480MHz	N/A	N/A
	BLE	2402-2480MHz	N/A	N/A
W52	11a/n/ac ((V)HT20)	5180-5240MHz	Active	Yes
	11n/ac ((V)HT40)	5190-5230MHz	Active	Yes
	11ac (VHT80)	5210MHz	Active	Yes
W53	11a/n/ac ((V)HT20)	5260-5320MHz	Passive	No
	11n/ac ((V)HT40)	5270-5310MHz	Passive	No
	11ac (VHT80)	5290MHz	Passive	No
W56	11a/n/ac ((V)HT20)	5500-5720MHz *	Passive	No
	11n/ac ((V)HT40)	5510-5710MHz *	Passive	No
	11ac (VHT80)	5530-5690MHz *	Passive	No
W58	11a/n/ac ((V)HT20)	5745-5825MHz	Active	Yes
	11n/ac ((V)HT40)	5755-5795MHz	Active	Yes
	11ac (VHT80)	5775MHz	Active	Yes

* The frequency band 5600MHz-5640MHz (11a/n/ac 20M band), 5590MHz-5630MHz (11n/ac 40M band) and 5610MHz (11ac 80M band) is restricted in ISED.

CONFIDENTIAL

Notes: End users can not modify the software because F/W & driver are installed in device.

5. Antenna

- Please perform the antenna design that followed the specifications of the antenna.
- About the signal line between an antenna and a module

It is a 50-ohm line design.

Fine tuning of return loss etc. can be performed using a matching network.

However, it is required to check "Class1 change" and "Class2 change" which the authorities define then.

The concrete contents of a check are the following three points.

- 1) It is the same type as the antenna type of antenna specifications.
- 2) An antenna gain is lower than a gain given in antenna specifications.
- 3) The emission level is not getting worse.

- 50-ohm line(microstrip line length)

	Antenna
Antenna type	Monopole pattern antenna
50-ohm feed line length	We test it at 0mm as a representative