

## Installation manual of HRM1085

This document describes the guideline to install Bluetooth module HRM1085 (FCC ID:VIYHRM1085, IC:7305A-HRM1085) to customer's PWB.

### 1. Mount Form

43 end-surface through hole. Pitch:1.1 mm, footprint size:0.8 x 1.4 mm

### 2. Reflow Profile

Maximum reflow times : 2 times

Recommended reflow temperature profile is shown in Figure 1.

$T_p$  = MAX 260 deg C

$t_p$  = From 10 to 30 sec

$T_L$  = 217 deg C

$t_L$  = From 60 to 120 sec

$T_{s\ max}$  = 200 deg C

$T_{s\ min}$  = 150 deg C

$T_{s\ Preheat}$  = From 60 to 120 sec

T 25 degree C to Peak = Max 8 min

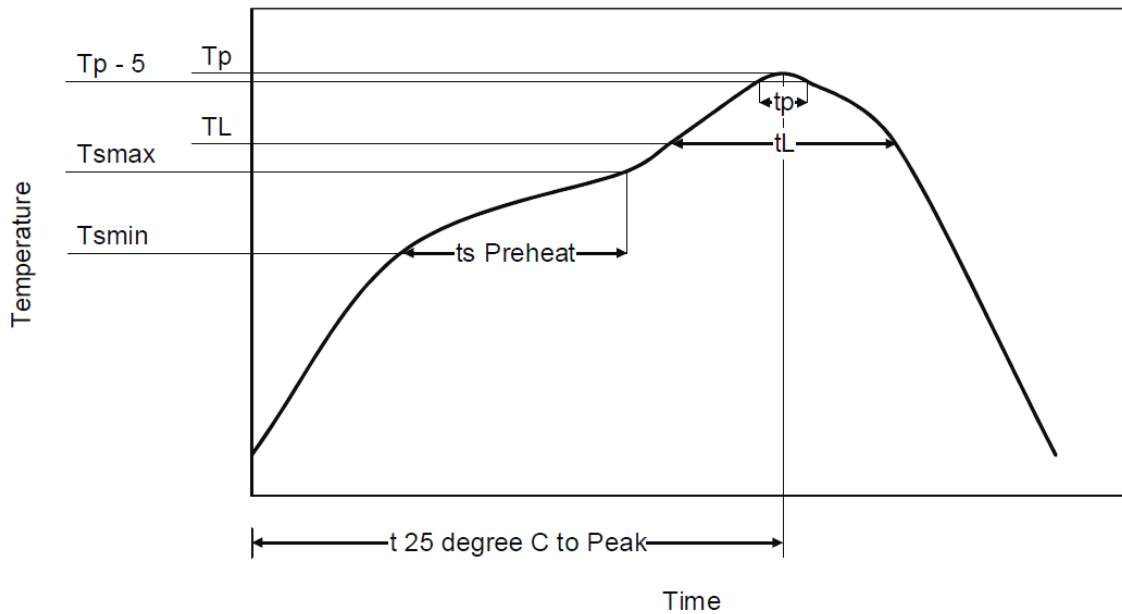


Figure 1: Recommended reflow temperature profile

### 3. Pin Information

TP No.	Name	TP No.	Name	TP No.	Name
1	GND	21	LEFT_STICK_Y	41	KSO0
2	GND	22	ANALOG_POWER_EN	42	GND
3	GND	23	LEFT_STICK_X	43	GND
4	GND	24	GND		
(5)	NC	25	STICK_BUTTON_LEFT		
6	VDD	26	STICK_BUTTON_RIGHT		
(7)	NC	27	LED2		
8	RESET_N	28	LED1		
9	UART_RTS	29	LED3		
10	UART_TX	30	LED4		
11	UART_CTS	31	VBAT_OBS_EN		
12	UART_RX	32	VBAT_OBS_ADC		
13	BT_SYNC	33	GND		
14	P04	34	KSO3		
15	P31	35	KSO2		
16	P23	36	KSI0		
17	P34	37	KSI1		
18	GND	38	KSI3		
19	RIGHT_STICK_Y	39	KSO1		
20	RIGHT_STICK_X	40	KSI2		

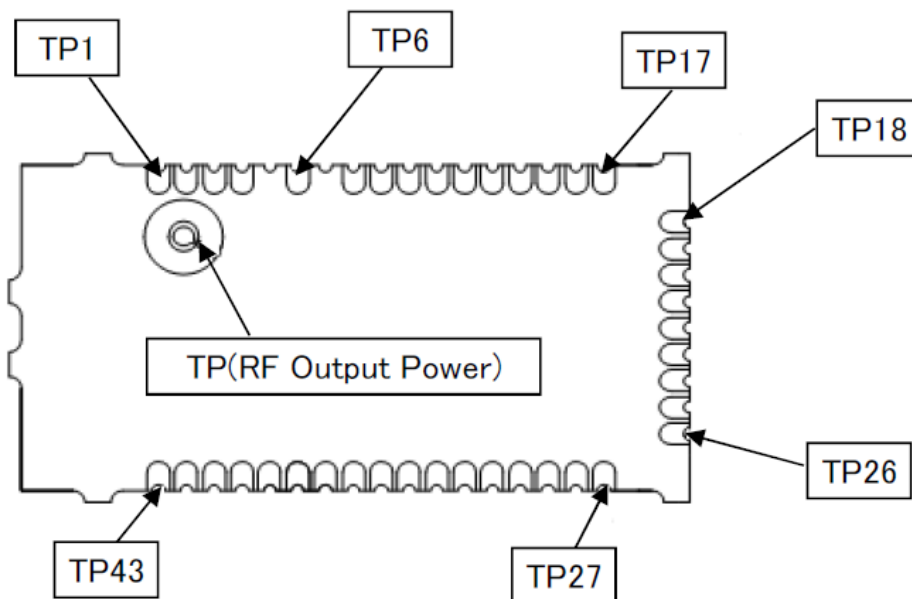


Figure 2: TP information

#### 4. Forbidden Area at the mouted

When implementing the module you must observe the following limitations related to Figure 3:

Gray color area : Module

Red color area (build in antenna type only): Do not place all PCB materials.

Cyan color area (build in Antenna type only): Do not place PCB pattern on all layers.

PCB material should not place as much as possible.

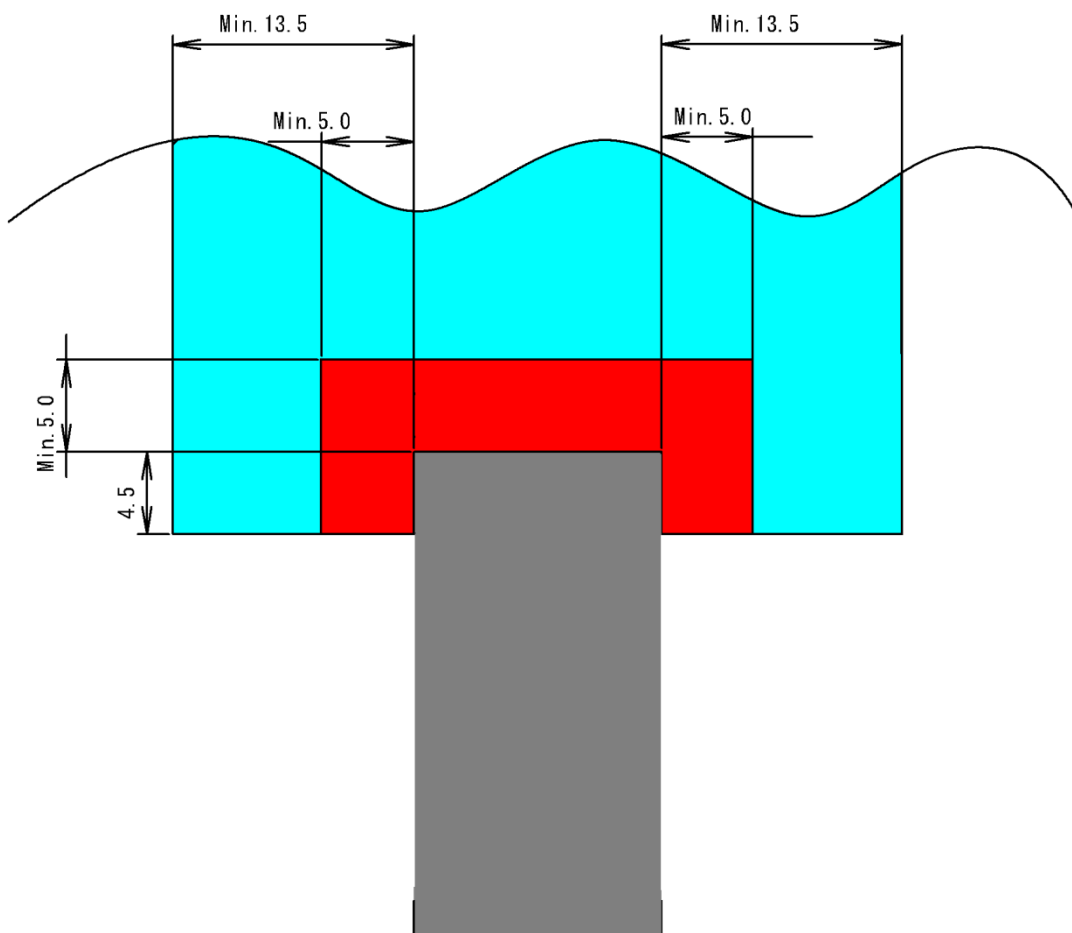


Figure3: Forbidden Area of the Mother Board

Product: Bluetooth module

Model: HRM1085

For OEM integration only – device cannot be sold to general public.

Therefore we will not supply the User’s manual, the installation manual is the official for OEM.

FCC ID: VIYHRM1085

IC: 7305A-HRM1085

**■ Operational Information**

This module has been tested and found to comply with the limits for a Class B digital device pursuant to Part15 of FCC rules. This module complies with Part15 subpart C of the FCC rules. Customers should check Part15 subpart B compliance with their own final products and conduct certification if needed.

**■ Caution**

Any changes or modifications are not expressly approved by Hosiden responsible for compliance could void the user’s authority to operate the equipment.

**■ Requirement of Labeling**

Please describe the following item on the final product including this module:

Contains Transmitter Module FCC ID: VIYHRM1085	or	Contains FCC ID: VIYHRM1085
Contains Transmitter Module IC: 7305A-HRM1085	or	Contains IC: 7305A-HRM1085

**■ Requirement of User’s Manual Statement**

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

## **Federal Communication Commission Interference Statement**

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.

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

### **Radiation Exposure Statement:**

The product complies with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

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

- 1) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 1 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

#### **End Product Labeling**

##### **FOR PORTABLE DEVICE USAGE (<20m from body/SAR needed)**

The product can be kept as far as possible from the user body or set the device to lower output power if such function is available. The final end product must be labeled in a visible area with the following: "Contains FCC ID: VIYHRM1085". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

##### **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

## **Industry Canada Statement**

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

### **Radiation Exposure Statement:**

The product complies with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

### **Déclaration d'exposition aux radiations:**

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé.

Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

**This device is intended only for OEM integrators under the following conditions:  
(For module device use)**

- 1) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 1 condition above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

**Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)**

- 1) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 1 condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

**IMPORTANT NOTE:**

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

**NOTE IMPORTANTE:**

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.



## **End Product Labeling**

The product can be kept as far as possible from the user body or set the device to lower output power if such function is available. The final end product must be labeled in a visible area with the following: "Contains IC:7305A-HRM1085".

## **Plaque signalétique du produit final**

L'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 7305A-HRM1085".

## **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

## **Manuel d'information à l'utilisateur final**

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

## Product Specification

### 1. BLUETOOTH SPECIFICATIONS

BT core spec version:	version 5.0 (Classic only)
Supported profiles:	HID 1.1
Operation channels:	2402 + N MHz (N=0,1,2,...78)
Output power level:	4dBm maximum (Bluetooth Class2)

### 2. SHORT RANGE RADIO SPECIFICATIONS (NO BLE MODE)

Operation frequency range:	2402MHz - 2480MHz
Modulation:	GFSK, $\pi/4$ -DQPSK, 8-DPSK
Operation channels:	2402 + N MHz (N=0,1,2,...78)
Output power level:	4dBm maximum (Bluetooth Class2)
Data rate:	1Mbps, 2Mbps, 3Mbps

### 3. DC ELECTRICAL CHARACTERISTICS

Nominal input voltage:	1.8V typ min:1.71V – MAX:2.00V
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