FOXCONN®

COMPANY CONFIDENTIAL

Product Specification

BT Module

M26H004.01

FCC ID: N89-BU067HS

FOXCONN® COMPANY CONFIDENTIAL

CONTENTS

0. Revision History

Date	Document revision	Product revision	Change Description
2013/3/4	00		1. Initial release
2013/3/18	01		1. new add schematic 2. new add BOM 3. new add PCB layout
2013-5-15	02		1. update PCBA picture 2. update outline because add shielding 3. update label and package information

1. Introduction

Project Name: 3D TV BT Module
Project Number: M26H004.01.
This documentation describes the engineering requirements specification of 3D TV BT Module. It is a confidential document of Foxconn.

1.1 Scope

The BT Module is compliant to Bluetooth 4.0 and EDR compliant:
Carrier Frequency: 2402MHz ~ 2480 MHz
Carrier Spacing: 1.0MHz
Duplexing: TDD
Modulation: FHSS/ GFSK, pi/4-DQPSK, 8DPSK
Symbol Rate: 1Mbps (GFSK), 2Mbps (pi/4-DQPSK), 3Mbps (8DPSK)
This module is designed with 8pin WTB connector and USB Interface, and it is installed as a client device in TV platform.
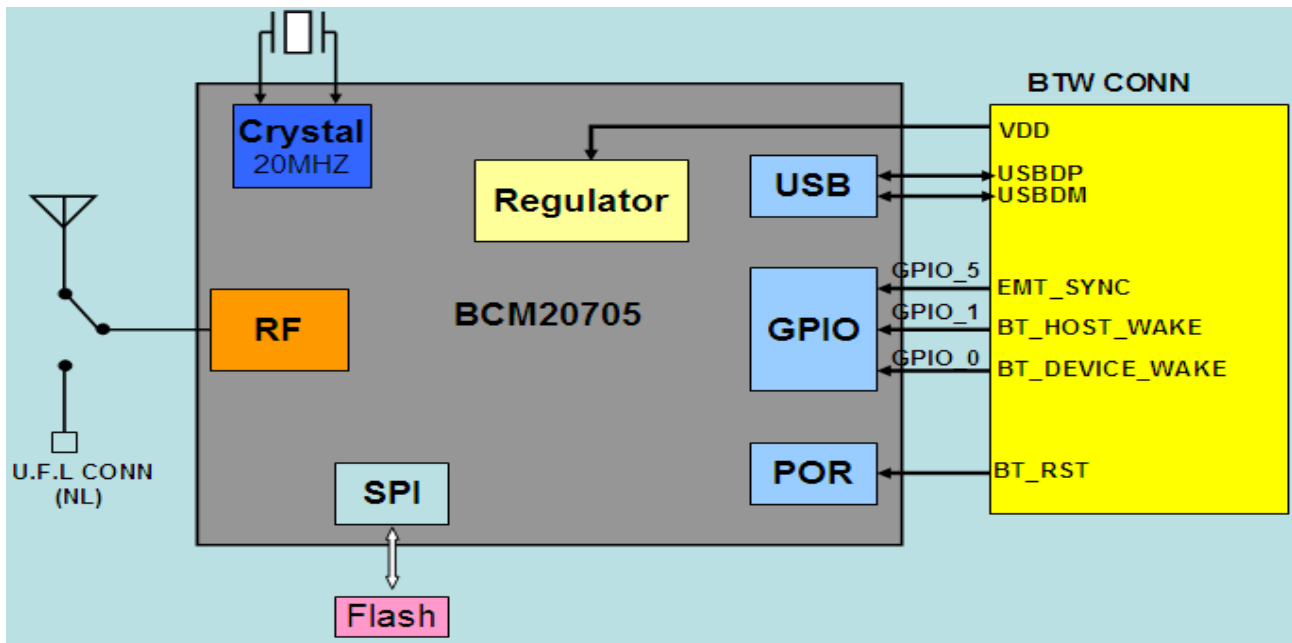
1.2 Feature

→Bluetooth 4.0+EDR compliant
→Programmable output power control meets Class 1, Class 2 requirements.
→Support PC and TV applications without external memory.
→Support 3D Glass and BT remote control device

1.3 Functional Block Diagram

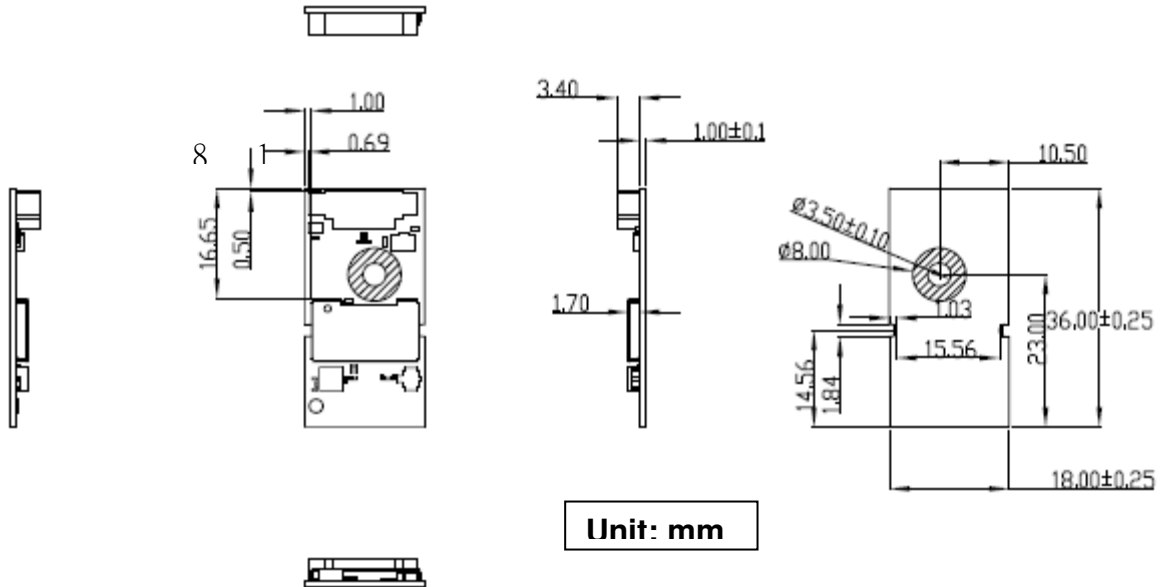**Sample picture is as below**

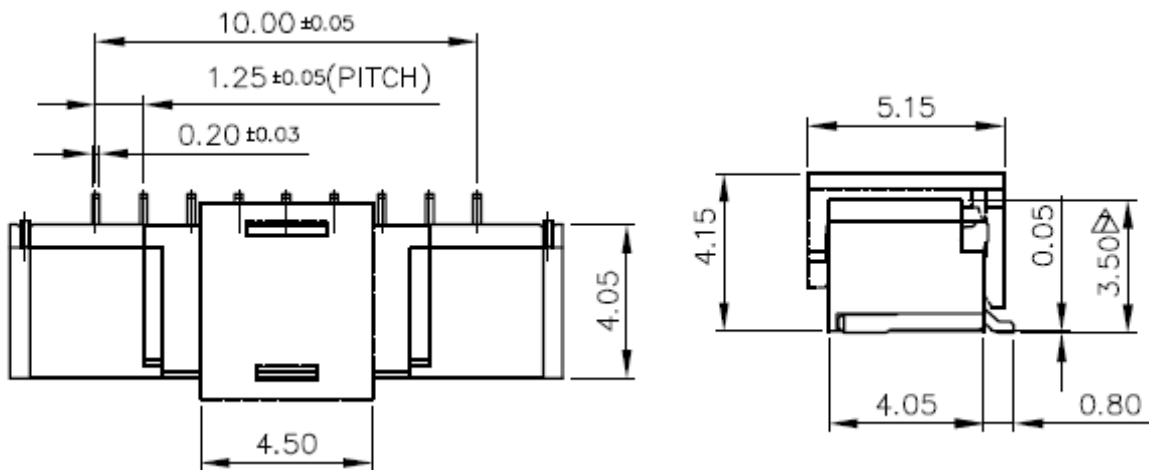| Top View | Bottom View |

2. Mechanical Specification

2.1 Module dimension

Module Dimension: Typical PCB size (W×L): 18mm ×36mm.

Unit: mm

2.2 WTB Connector Specification

8pin side entry type WTB CONN, 1.25mm pitch, detail spec as below:

2.3 WTB connector Pin definition

Pin No	Pin Name	I/O	Description
1	BT_DEVICE_WAKE(GPIO_0)	I	Allows the SOC host to wake up the BT device
2	BT_HOST_WAKE(GPIO_1)	O	Allows the BT device to wake up the SOC host
3	USB_5V	PWR	DC +5V power input
4	HUSBDM	I/O	USB Data D-
5	HUSBDP	I/O	USB Data D+
6	GND	GND	Ground
7	3D_SYNC(GPIO_5)	I	3D sync clock input
8	BT_RST	I	BT device reset

3. Electrical Specification

3.1 Operating Condition

Parameter	Condition	Min.	Typ.	Max.	Unit
DC Input	USB 5V	4.5	5.0	5.5	V
Module Current (DC input nominal)	Tx Current		0.35		A
	Rx Current		0.17		
	Standby Current		0.01		
Operating Temperature	--	0		+60	℃
Storage Temperature	--	-40		+85	℃

3.2 BT RF Specification

Items	Contents			
TX Characteristics	Min.	Typ. (@5.0V/25℃)	Max.	Unit
1. Power Levels				
BT Output Power (Basic Data Rate)@Class 2	-6	2.0	4	dBm
2. Initial Carrier Frequency Tolerance				
Average Offset	-75	-4.8	75	kHz
3. Carrier Drift				
Drift Rate				
DH1	-20	-5.54	20	kHz/50us
DH3	-20	6.11	20	kHz/50us
DH5	-20	5.38	20	kHz/50us
Average Drift				
DH1	-25	-5	25	kHz
DH3	-40	-5	40	kHz
DH5	-40	-1	40	kHz
4. Modulation Characteristic				
F1avg	140	155	175	kHz
F2max	115	130		kHz
F1/F2 Ratio	0.8	0.94		
5. EDR Relative Transmit Power				
2Mbps: P[DQPSK]-P[GFSK]	-4	0.30	1	dB
3Mbps: P[8DPSK]-P[GFSK]	-4	0.25	1	dB
6. EDR Carrier Frequency Stability and Modulation Accuracy				
2Mbps: π/4 DQPSK				
Initial Frequency Error: ω_i	-75	-6.1	75	kHz
Frequency Error: ω_0	-10	-2.2	10	kHz
Block Frequency Error: $\omega_i + \omega_0$	-75	-7.5	75	kHz
RMS DEVM	-	0.062	0.2	
Peak DEVM	-	0.158	0.35	
99% DEVM (% Symbols <=0.3)	99%	100%		
3Mbps: 8DPSK				
Initial Frequency Error: ω_i	-75	-9	75	kHz
Frequency Error: ω_0	-10	-1.5	10	kHz
Block Frequency Error: $\omega_i + \omega_0$	-75	-10	75	kHz
RMS DEVM	-	0.05	0.13	
Peak DEVM	-	0.13	0.25	
99% DEVM (% Symbols <=0.13)	99%	100%		

Items		Contents		
RX Characteristics	Min.	Typ. (@5.0V/25℃)	Max.	Unit
1. Minimum Input Level Sensitivity				
GFSK (1Mbps)	-	-87	-70	dBm
π/4 DQPSK (2Mbps)	-	-87	-70	dBm
8DPSK (3Mbps)	-	-80	-70	dBm
2. Maximum Input Level				
GFSK (1Mbps)	-20	0		dBm
π/4 DQPSK (2Mbps)	-20	-14		dBm
8DPSK (3Mbps)	-20	-14		dBm

3.3 On-board Antenna Specification

Operating Frequency	2.40~2.5GHz
VSWR	<=2.0:1
Antenna Type	Chip ANT

4. Quality

The product quality must be followed-up by Foxconn factory quality control system.

5. Appendix

5.1   Label Information

5.2   Package Information

VER.	MARK	ECR/ECN NO.	DATE	UPDATE DESCRIPTION	SIGNATURE
00			2012.12.15	First Release	Taim

1. Qty : 60pcs/Layer, 15 layers/carton.
2. The top layer used as shied cover,without products.
3. The two neighboring layers always laid reversely.
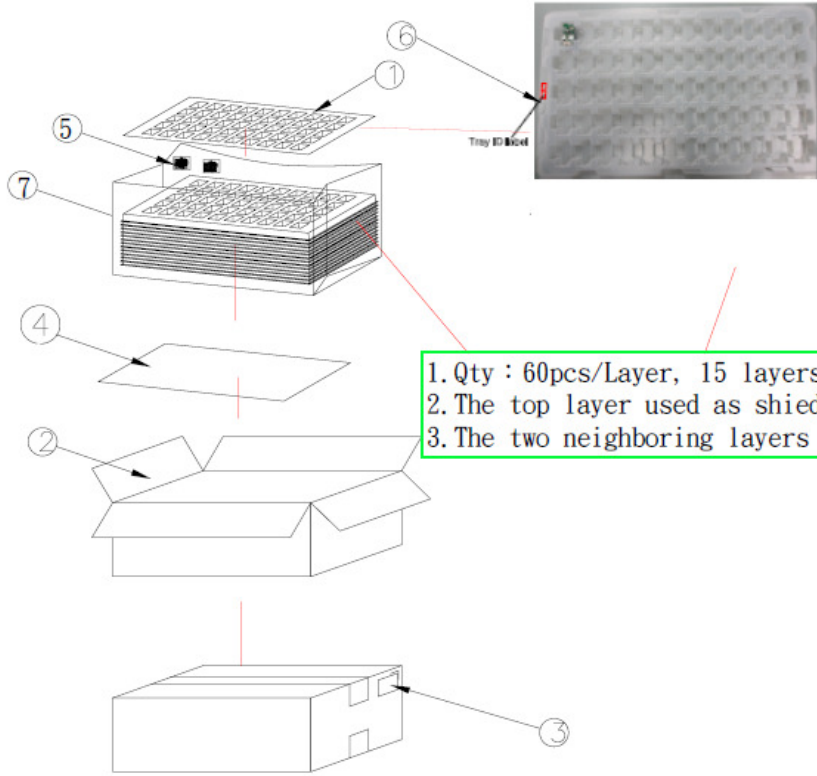
Carton outor size:460*285*145mm
Carton=15aryers=14*60=840 Pcs

1	Tray	513.00349.005	15/840
2	Carton	520.00794.005	1/840
3	Carton label	503.00098.005	1/840
4	Paper board	522.00043.005	1/840
5	Drier	528.00011.005	2/840
6	Tray label	503.00090.005	14/840
7	PE Bag	510.00404.015	1/840

MATERIAL (SPEC.)

FINISH

Select Dim. Tol.	A	B	C	EPS	EPE	BAG	CTN	Label	USR
0~6	0.05	0.05	0.10					0.20	
6~30	0.10	0.15	0.20	0.50	0.50	3.00		0.20	
30~120	0.15	0.20	0.30	0.50	0.50	5.00	2.00	0.25	
120~300	0.20	0.30	0.40	1.00	1.00	10.00	3.00	0.30	
300~450	0.25	0.40	0.50	2.00	2.00	15.00	5.00	0.50	
450~600	0.30	0.50	0.60	3.00	3.00	20.00	5.00	0.80	

DRAFT TOLERANCE   ±0.2°   CRITICAL DIM. MARK   *

SCALE

SHEET

UNIT   mm

SIZE   A4

FOXCONN
HON HAI PRECISION IND. CO., LTD.

PART NAME   Carton packing drawing

MODEL   M26H004.01

PART NO.

DESIGNED   Taim

CUSTOMER MODEL

CUSTOMER PART NO.

APPROVED   Sunny wu

Federal Communication Commission Interference Statement

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 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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter.

This End equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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

The final end product must be labeled in a visible area with the following:
"Contains FCC ID: N89-BU067HS ".

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.