



® Zhongshan Huaxing Lighting CO.,LTD.

ADD:GuEr ShunCheng Industrial Zone,GuZhen, ZhongShan City,GuangDong,P.R.China

(Tel):86-760-22323667 (Fax):86-760-2323665

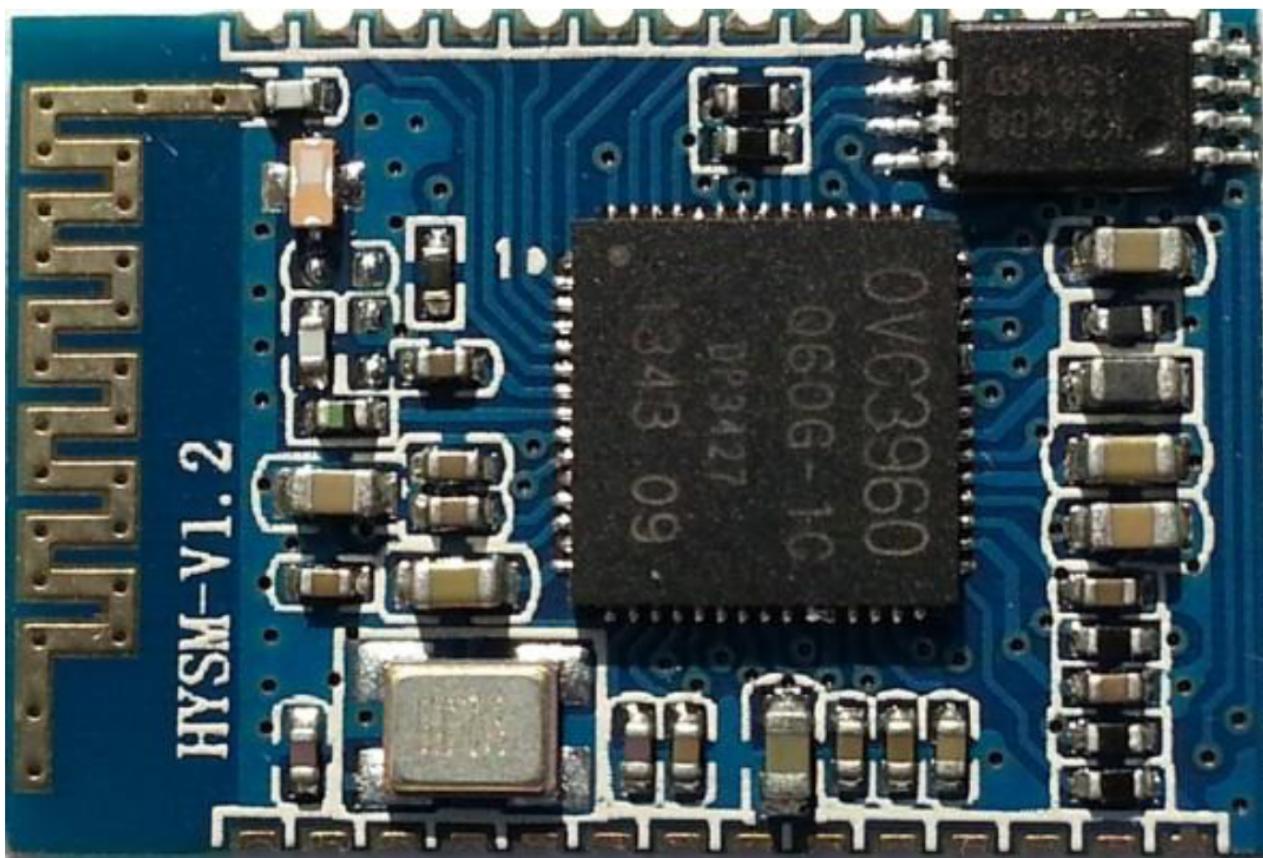
Kai Xin

E-mail: hualamps@163.net

Bluetooth Module

HX - 3960

DATASHEET





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Features

OVC3960 is a high integration, low cost, low power Bluetooth stereo audio module

Fully qualified Bluetooth version 3.0 module

Supports A2DP V1.3, AVRCP V1.5, HSP1.2, HFP1.6 profiles

Integrated EEPROM, deploys operational mode and parameters

Internal MIC bias voltage supply

Internal MIC amplifier

UART supports caller ID display (only when the phone terminal supports the function)

Differential stereo audio output

Audio output can drive 40mW @ 32 Ω speaker, but not need the blocking power

Integrated reset circuit and programmed low voltage monitoring function

5 key output, including On/Off, Connection, Play, Pause/Louder/Lower/Previous/Next

2 indicators to guide 2 different function modes

Provides a warning tone when a call coming and plays ring tone when the phone terminal supports it

Short press ONKEY to answer or hold off the call, long press can reject the call, extended press can stop the phone connection, and short press twice can dial the last dialed call



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Technique Parameters

CATEGORIES	FEATURE	IMPLEMENTATION
Wireless Specification	Bluetooth	Version 3.0
	Frequency	2402~2480 MHz
	Max Transmit Power	Class2 4dBm (at antenna pad)
	Receive Sensitivity	Better than -82dBm
	Range	10meters
	Data Rates	Up to 3Mbps (over the air)
	UART DATA Transfer Rate	115200bps
Host Interface	UART	No flow control support
Audio Interfaces	Microphone	Mono microphone input with bias
Profiles		A2DP V1.3–Sink Only
		AVRCP V1.5 –Controller Only
		HSP V1.2
		HFP V1.6
Supply Voltage	Supply	DC 3.7V – 4.2V
Power Consumption	Current Consumption	Operational - Less than 20 mA (active)
		Idle (sleep) < 10mA
Connections	External Antenna	Connection via SMT pad
Physical	Dimensions	15.7mm x 23.3mm x 2.3mm



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PIN Description

No.	Name	Mode	Description
1	RESET	Digital	Compatible with I2C Data information
2	VDD33	Power	Power output, supplys power to indicator 1,2
3	L_PAOUTN	Audio	
4	L_PAOUT	Audio	
5	R_PAOUT	Audio	
6	R_PAOUTN	Audio	
7	MIC_L	Audio	MIC Input
8	MICBIAS	Power	MIC Bias Voltage output
9	---	---	---
10	LED1	Sink	Control terminal of indicator 1
11	LED2	Sink	Control terminal of indicator 2
12	VOL +	Digital	Increase Volume, Next Song
13	VOL-	Digital	Lower Volume, Previous Song
14	ONKEY	Digital	Turn on/off, Play/Pause
15	VCC +5V	Power	Power Charge Terminal +5V
16	GND	Power	Ground
17	BAT	Power	Battery Power Charge Terminal 3.7V-4.2V
18	UART_RX	Digital	UART receive input
19	UART_RX	Digital	UART transmit input
20	PCM_OUT	Digital	PCM interface
21	PCM_IN	Digital	PCM interface
22	PCM_CLK	Digital	PCM interface
23	PCM_SYNC	Digital	PCM interface
24	MUTE	Digital	Play/Pause, high/low output
25	Prev	Digital	Previous song
26	Next	Digital	Next song
27	NC	Digital	Compatible I2C Timer
28	ANT	---	Connect the external antenna



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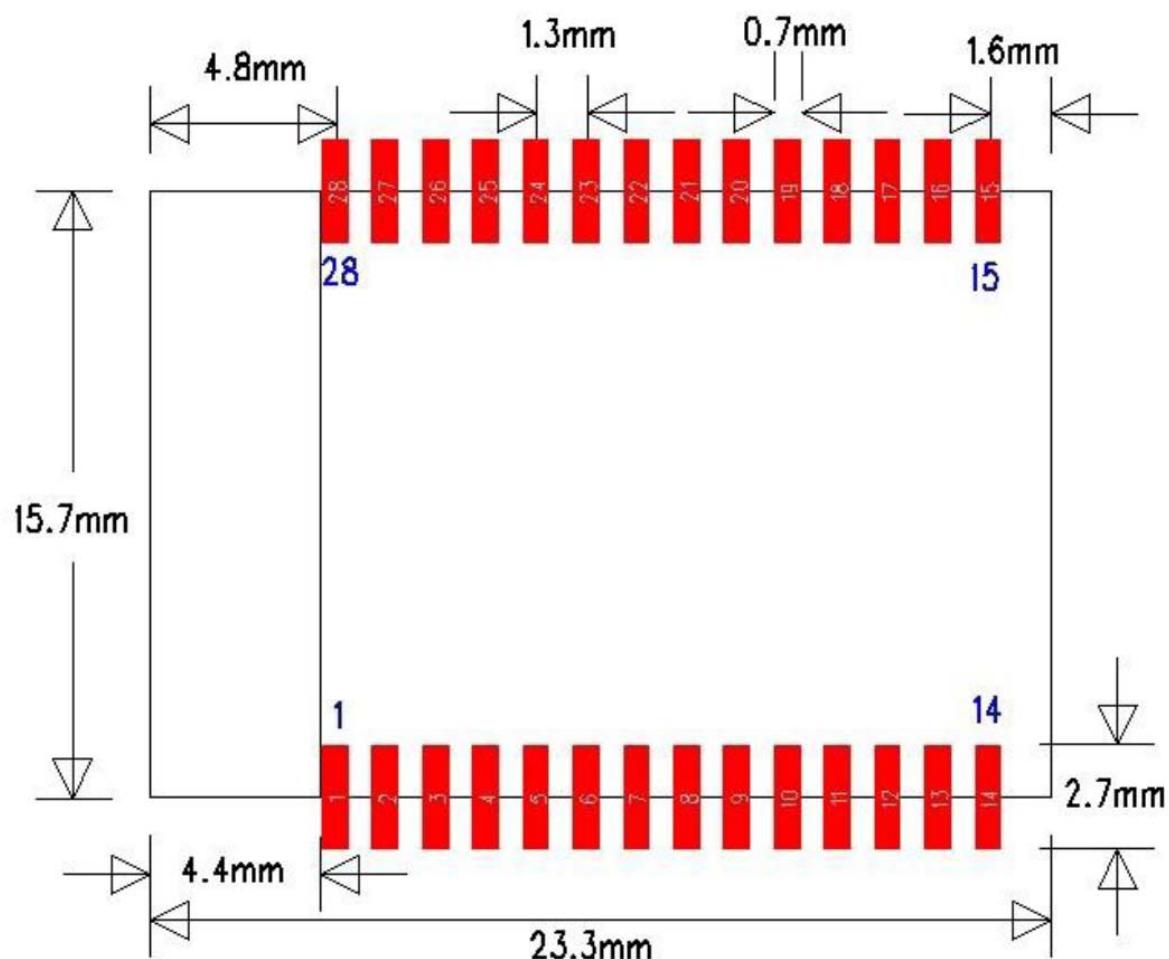
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Dimension





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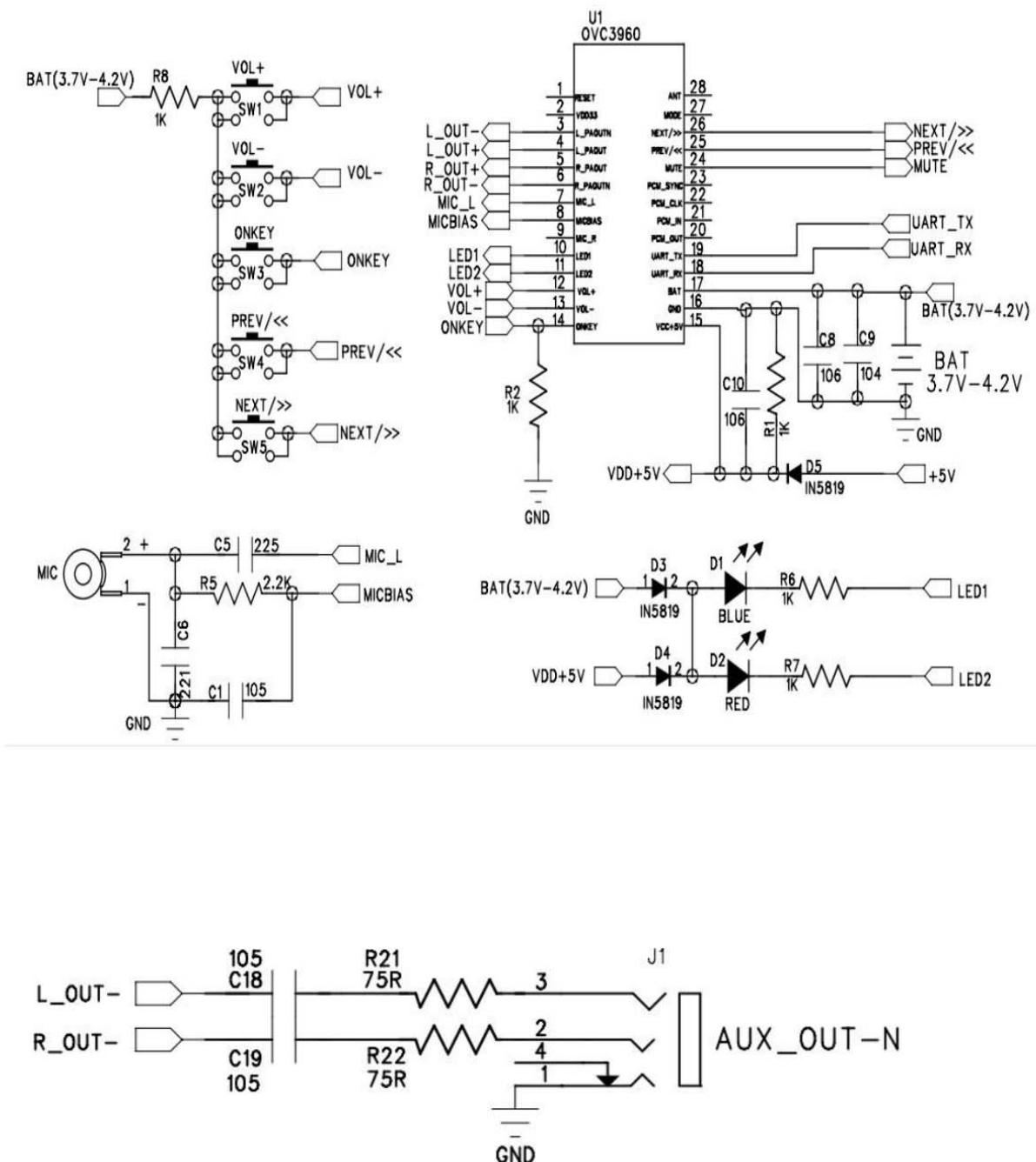
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Circuit Description

Module Application Schematic





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Module Pinout

U1 OVC3960	
1	RESET
2	VDD33
3	L_PAOUTN
4	L_PAOUT
5	R_PAOUT
6	R_PAOUTN
7	MIC_L
8	MICBIAS
9	MIC_R
10	LED1
11	LED2
12	VOL+
13	VOL-
14	ONKEY
28	ANT
27	MODE
26	NEXT/>>
25	PREV/<<
24	MUTE
23	PCM_SYNC
22	PCM_CLK
21	PCM_IN
20	PCM_OUT
19	UART_TX
18	UART_RX
17	BAT
16	GND
15	VCC+5V



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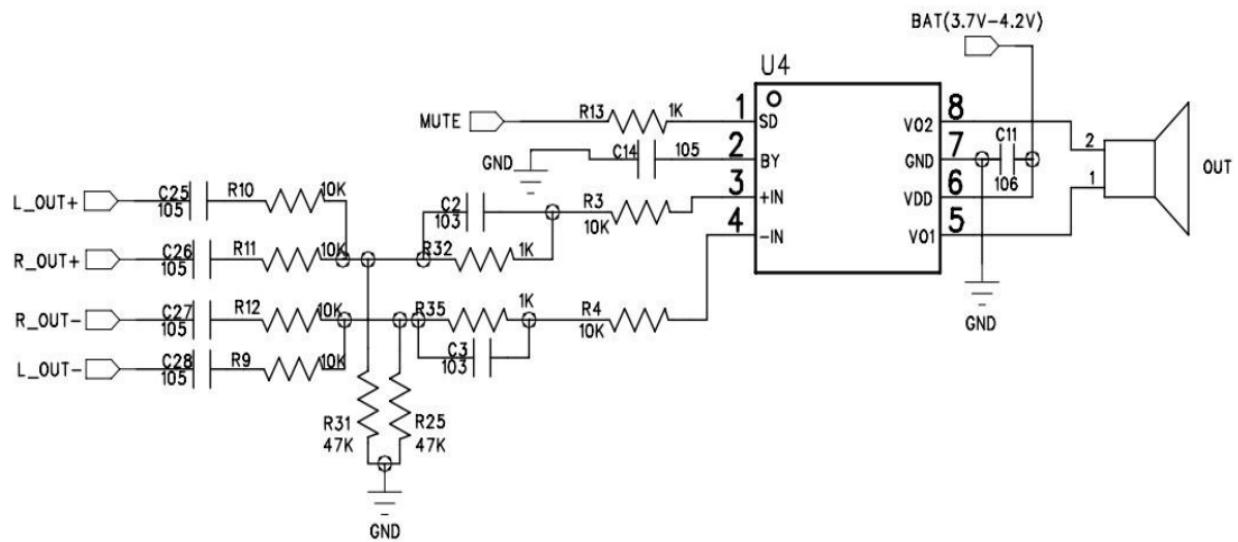
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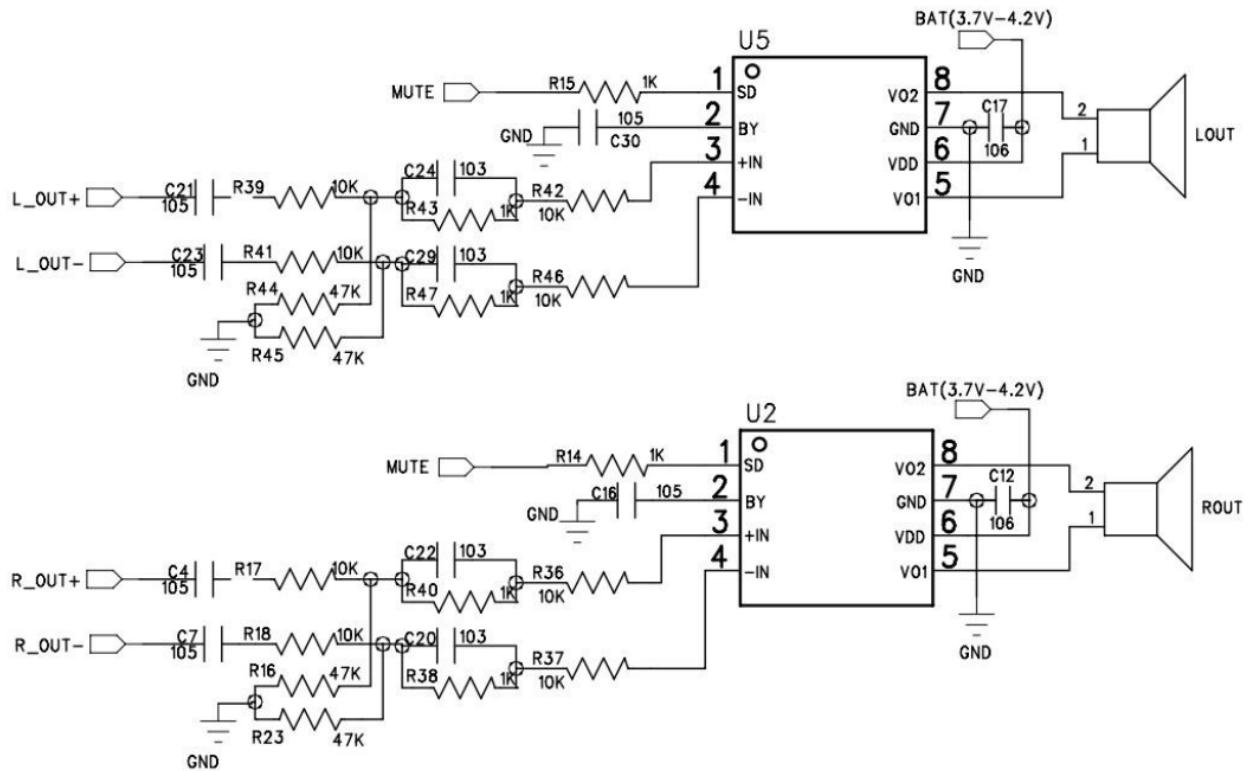
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Amplifier Application Circuit

Single-ended Amplifier Application



Double-ended Amplifier Application





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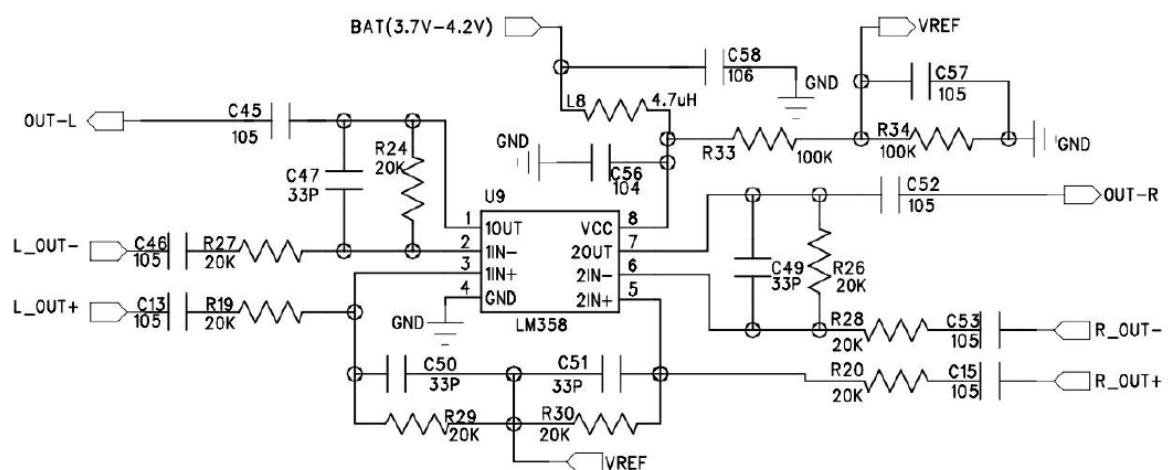
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Operation Amplifier Application Circuit



FCC 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.

CAUTION: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

NOTE: 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 or more 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 Radiation Exposure Statement:

"To comply with FCC RF exposure compliance requirements, the antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

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

(1) According to FCC Part 15 Subpart C Section 15.212, the radio elements of the modular transmitter must have their own shielding. This module is granted as a Limited Modular Approval.

(2) This device has been designed to operate with a PCB antenna which having a maximum gain of -4.4dBi. Only this type of antenna may be used.

(3) Integration is typically strictly restricted to Grantee himself or dedicated OEM integrators under control of the Grantee.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: If the module which installed in the end product has no shielding, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

This module is intended for OEM integrator. The OEM integrator is still

responsible for the FCC compliance requirement of the end product, which integrates this module. Due to missing shielding the module is strictly limited to integration by the Grantee himself or his dedicated OEM Integrator.

USER MANUAL OF THE END PRODUCT:

In the user manual of the end product, the end user has to be informed that the equipment complies with FCC radio-frequency exposure guidelines set forth for an uncontrolled environment.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the user manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: 2AEEB-HX3960BT ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.