Cdtech 中龙通

Version：V1.2
Date：2017.08. 07

Name：Wifi+BT4.0 Module

Model：CDW-N37632U-A0

Software：

CUSTOMER	APPROVE	DATE
		2017.08.07

DESIGN： _____   **CHECK：** _____   **APPROVAL：** _____

CHINA DRAGON Technology

CDW-N37632U-A0
WIFI+BT4.0 Module

802.11b/g/n

Revision History

Date	Revision Content	Revised By	Version
2016.02. 10	First release		1.0
2016.10.31	Increase POWER TX and mode detail description	hujian	1.1
2017.08.07	Release English version	hujian	1.2

Table of Contents

1.General Descriptions

The CDW- N37632U-A0 is a highly integrated single chip which has built in a 2x2 dual-band wireless LAN radio and Bluetooth radio.lt supports IEEE 802.11a/b/g/n standard and provides the highest PHY rate up to 300Mbps, offering feature-rich wireless connectivity and reliable throughput from an extended distance.lt includes Bluetooth EDR and LE radio which complies with Bluetooth v2.1+EDR,v3.0,and v4.0+BLE. Optimzed RF architecture and baseband algorithms provide superb performance and low power consumption.

The CDW-N37632U-A0 integrates PA/LNA such that the number of the external components is reduced to minimum.Intelligent MAC design deploys a high efficient DMA engine and hardware data processing accelerators which offloads the host processor.

The CDW- N37632U-A0 supports the 802.11i security standard and implements hardware acceleration for TKIP,CCMP and WAPI. The device also supports 802.11e Qos for video,voice,and multimedia applications.

The CDW-N37632U-A0 can provide a comcurrent operation of Wi-Fi and Bluetooth over USB interace. An intelligent Wi-Fi/Bluetooth coexistence algorithm is implemented to reach the best Wi-Fi and Bluetooth radio performance.CDW-N37632U-A0 also features the high-speed UART with SIG standard HCI interface to suppout Bluetooth over UART.

2.   Features

2.1   Platform

- ■ Embedded high-performance 32-bit RISC microprocessor
- ■ Highly integrated RF with 55nm CMOS technology
- ■ Integrate high efficiency switching regulator
- ■ 20/40MHz crystal clock support with low power operation in sleep mode
- ■ Best-in-class active and idle power consumption performance
- ■ Fully Compliance with USB v2.0 specification
- ■ Iternal thermal sensor for temperature compensation and thermal protection.
- ■ Self calibration.
- ■ Advanced FDD/TDD mode Wi-Fi/Bluetooth coexistence scheme.
- ■ Wi-Fi and Bluetooth over USB.

2.2　WLAN

- IEEE 802.11a/b/g/n compliant
- Support 20MHz,40MHz in 5GHz band,and　20MHz,40MHz bandwidth in 2.4GHz band.
- Embedded high-performance 32-bit RISC microprocessor
- Dual-band 2T2R mode with data rate up to 300Mbps
- Support STBC,LDPC,MRC,and transmit Beamforming
- Greenfield,mixed mode,legacy modes support
- Frame aggregation
- Integrated LNA,PA,and T/R switch
- Optional external LNA and PA support.
- IEEE 802.11d/e/h/i/k/r/w support
- Security support for WGA WPA/WPA2 personal,WPS2.0,WAPI
- Supports 802.11w proteced managed frames
- QoS support of WFA WMM,WMM PS
- Supports Wi-Fi Direct
- Fully compliance with USB v2.0 High-speed mode
- Wake on WLAN

2.3　Bluetooth

- Bluetooth specification v2.1+EDR
- Bluetooth v4.0 Low Energy(LE)
- Standard HCI interface over USB super-speed,high-speed and full-speed mode
- High speed UART up to 4Mbps BAUD rate
- Integrated BALUN and PA with 9dBm transmit power
- Best-in-class BT/Wi-Fi coexistence performance
- Scatternet support:Up to 4 piconets simultaneously with background inquiry/page scan
- Up to 3 simulaneous active ACL links
- Support SCO and SCO link with re-transmission
- Support wide-band speech and hardware accelerated SBC codec for A2DP streaming
- Packet loss concealment
- Channel assessment or AFH
- 3DD support

3. Applications

The CDW-N37632U-A0 is deaigned for a compact PCB design .It should be installed and

operated with TV or other minimum distance of 20 centimeters between the radiator and your body."

The OEM can use metal antennas or FPC antennas, and the antenna gain is less than 6dBi for

this module.

4.   General Specification

Model	CDW-N37632U-A0
Product Name	WI-Fi 11a/b/g/n 2T2R +BT4.0 Module
Major Chipset	MT7632UN
Standard	802.11a/b/g/n,
DataTransfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60, 90,120 and maximum of 300Mbps
Modulation Method	BPSK/ QPSK/ 16-QAM/ 64-QAM
Frequency Band	2.4~2.4835 GHz ISM Band, 5.150~5.825 GHz ISM Band;
Spread Spectrum	IEEE 802.11a: DSSS (Direct Sequence Spread Spectrum),FHSS; IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE802.11g/n:OFDM (Orthogonal rthogonal Frequency Division Multiplexing) IEEE 802.11n: MIMO(Multiple-Input Multiple-Out-put)
WLAN RF Output Power(min)	2.4GHz >= 14dBm@11n， >= 15dBm@11g， < 19dBm@11b 5GHz >= 12dBm@11n， >=12dBm@11g
WLAN RF Output Power(max)	2.4~2.4835 GHz<=19dbm , 5.150~5.725 GHz<=16.5dbm; 5.725~5.825 GHz<=15dbm
BT RF Output Power	>=0dbm;
Operation Mode	Ad hoc, Infrastructure
WLAN Receiver Sensitivity	2.4G 11Mbps-86dBm@8%， 54Mbps -73dBm@10%， 130Mbps，-70dBm@10% 5G 54Mbps -72dBm@10%, 150Mbps -69dBm@10% 300Mbps -66dBm@10%
BT Receiver Sensitivity	-86dBm @ BER=0.1% for GFSK (1Mbps) -86dBm @ BER=0.01% for π/4-DQPSK (2Mbps) -86 dBm BER=0.01% for 8DPSK (3Mbps)
OS Support	Win7 32/64,Win8 32/64,Android.
Security	WEP, TKIP, AES, WPA, WPA2
Interface	USB 2.0
Operating Temperature	-20~ +70° C ambient temperature
Storage Temperature	-40 ~ 85℃ ambient temperature
Humidity	5 to 90 % maximum (non-condensing)
Dimension	17.7x27x2.0mm (LxWxH)+-0.2mm

5. Current consumption

5.1 WLAN current consumption

| Description	TYP	Unit
Sleep mode	1.5	mA
2GHz RX Active,HT40,MCS15	296	mA
5GHz RX Active,HT40,MCS15	296	mA
RX Power saving,DTIM=1	65	mA
RX Listen	236	mA
2GHz TX HT40,mcs15 @17dBm	672	mA
2GHz TX HT40,mcs8 @20dBm	756	mA
5GHz TX HT40,mcs15 @15.5dBm	784	mA
5GHz TX HT40,mcs8 @16.5dBm	864	mA
2GHz TX CCK,11Mbps @20dBm	464	mA

Note:All result is measured at the antenna port and VDD33 is 3.3V

5.2 Bluetooth current consumption

| Description	TYP	Unit
Sleep mode	1.5	mA
Bluetooth continuous transmit(TX output power:9dBm)	69	mA
Bluetooth continuous receive	44	mA
Bluetooth SCO connection, HV3 packets+sniff mode+scan (Page scan internal=1.28sec,inquiry scan interval=2.56s,sniff interval=500ms)	32	mA
Bluetooth page scan+inquiry scan (Page scan interval=1.28s,inquiry scan interval=2.56s)	2	mA
Bluetooth page scan (Page scan interval=1.28s)	2	mA

Note:All result is measured at the antenna port and VDD33 is 3.3V

6. Dimension&Pin Assignments
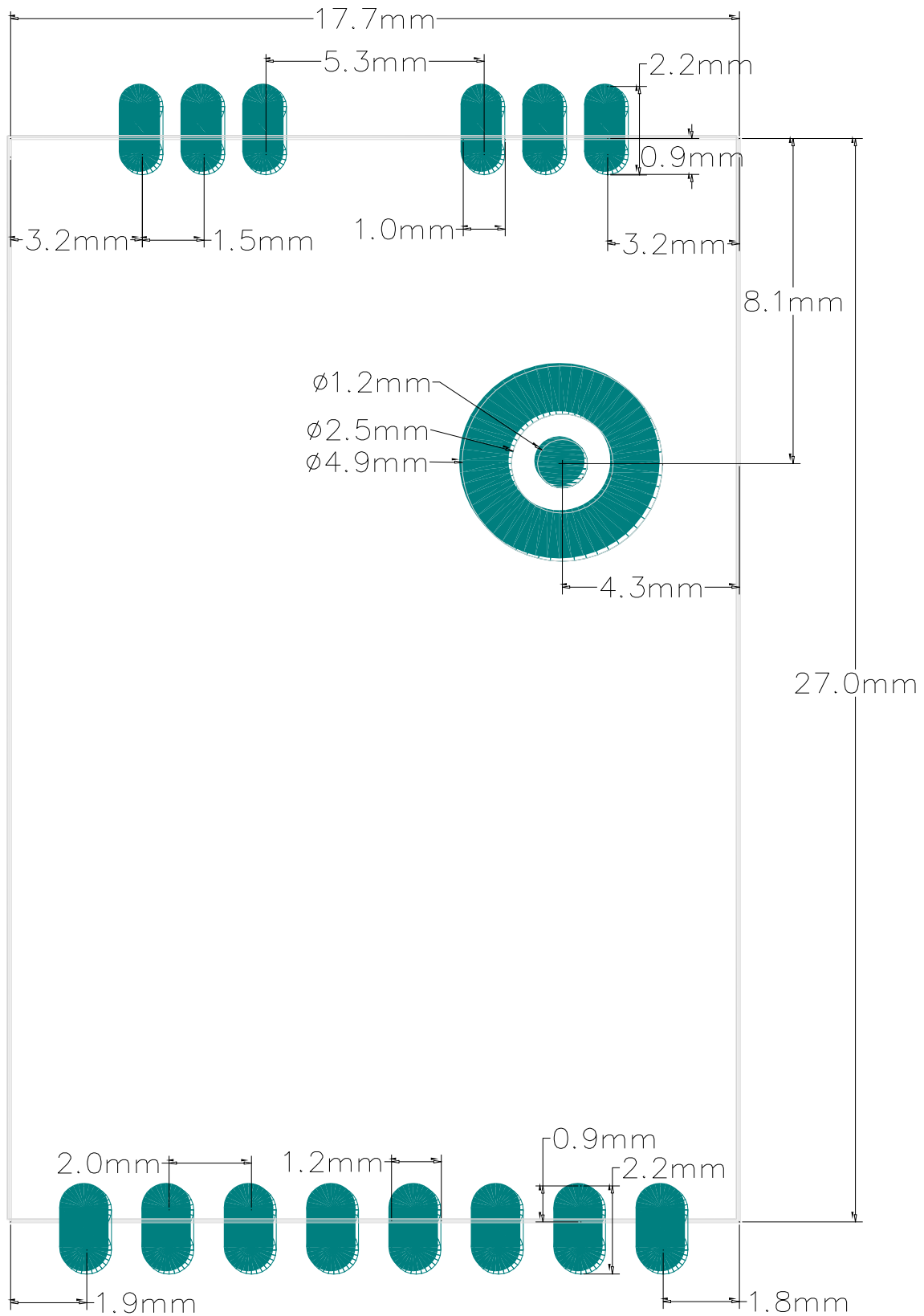
NO.	Nam	Description
1	WF_WAKE	Wifi wake
2	LED	Led connection
3	GND	Ground connection
4	UDP	USB positive differential data lines
5	UDM	USB negative differential data lines
6	3.3V	Power supply 3.3V is required
7	RST	Reset
8	BT_WAKE	Blue tooth wake
9	GND	Ground connection
10	WF-RF1	WIFI-RF signal one
11	GND	Ground connection
12	GND	Ground connection
13	WF-RF0	WIFI-RF signal zero
14	GND	Ground connection

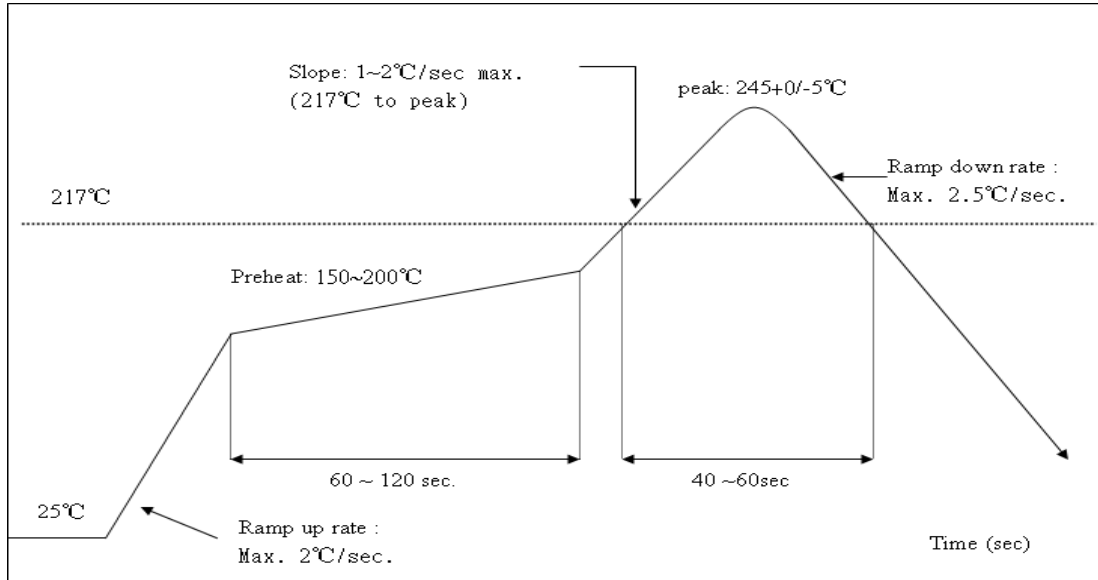# 7 Module Photo

7.1 PCBA physical photo
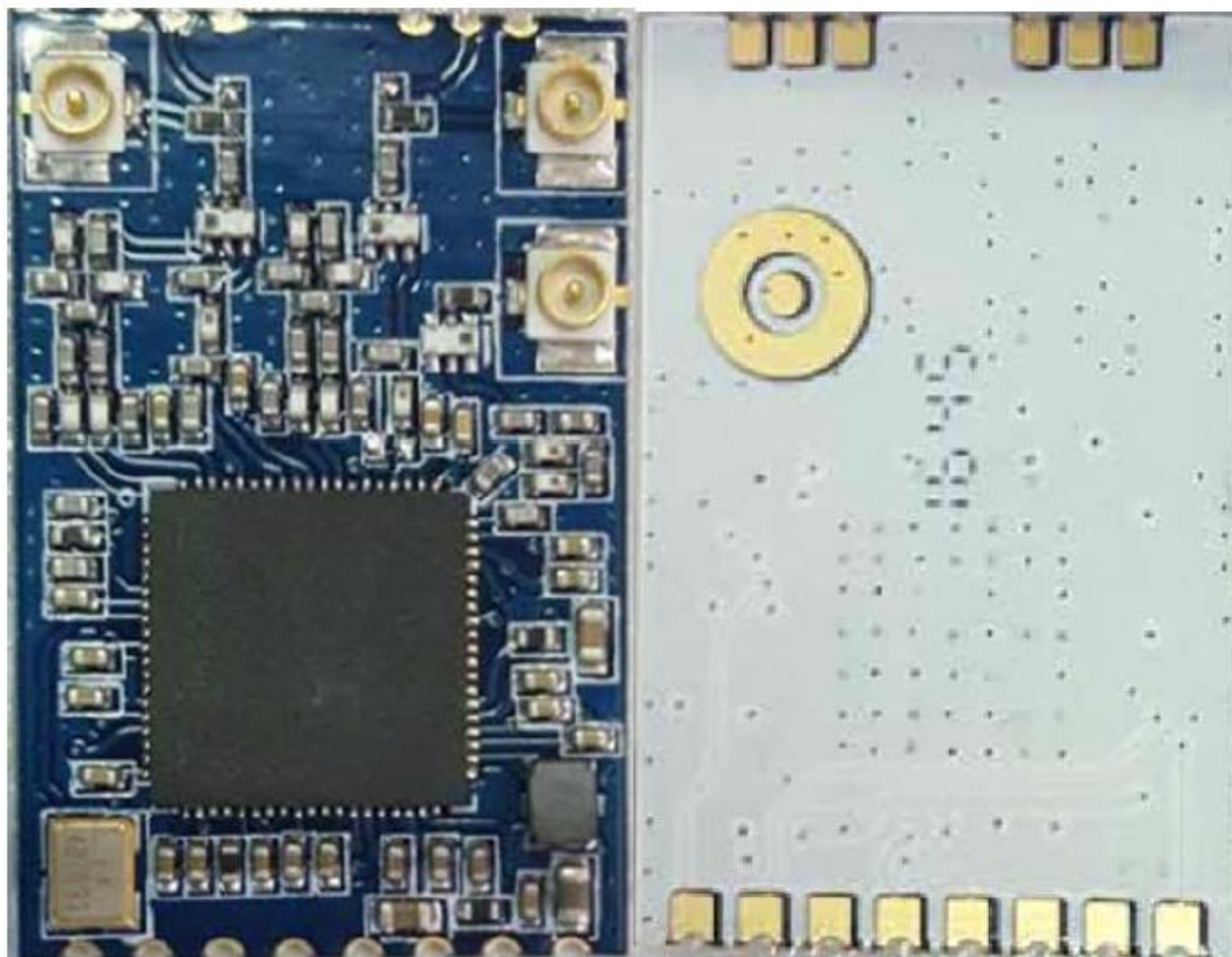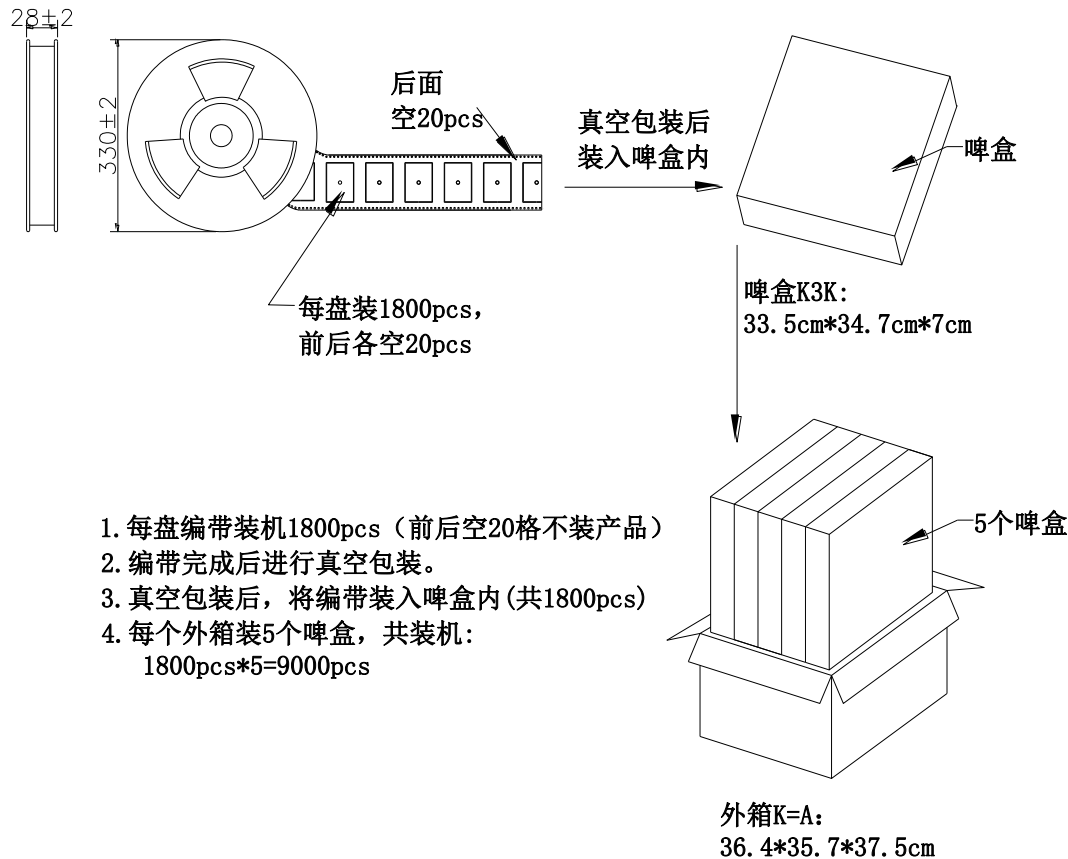
7.2 Crystal photo:

8. Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : <250 ℃

Number of times : 2 times

9. Packing information

28±2

330±2

后面
空20pcs

真空包装后
装入啤盒内

啤盒

每盘装1800pcs，
前后各空20pcs

啤盒K3K：
33.5cm*34.7cm*7cm

1.每盘编带装机1800pcs（前后空20格不装产品）
2.编带完成后进行真空包装。
3.真空包装后，将编带装入啤盒内(共1800pcs)
4.每个外箱装5个啤盒，共装机：
　　1800pcs*5=9000pcs

5个啤盒

外箱K=A：
36.4*35.7*37.5cm

Remarks:

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.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance 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.

"This equipment complies with FCC RF radiation exposure limits set forth
for an uncontrolled environment.
  This equipment should be installed and operated with a minimum distance
  of 20 centimeters between the radiator and your body."

This module is designed to comply with the FCC statement, FCC ID is: 2A
M4L1.
The host system using this module, should have label in a visible area
indicated the following texts:
"Contains FCC ID: 2AM4L1".

ESD CAUTION

   The CDW-N37632U-A0 is ESD (electrostatic discharge) sensitive device and may be damaged
with ESD or spike voltage. Although CDW-N37632U-A0 is with built-in ESD protection circuitry,
please handle with care to avoid the permanent malfunction or the performance degradation.