

General Description

BDE-HWF7394N is an ultra-low power & long-range Wi-Fi halow module based on IEEE 802.11ah, a new Wi-Fi standard operating in the Sub 1GHz license-exempt band, offering longer range and lower power connectivity necessary for internet of things (IoT) applications.

The module can operate at frequency range from 740 MHz to 950 MHz for different countries/regions. Refer to Table 1 for different variants targeting at different counties.

With the internal PA in SoC, the module can increase transmission power up to 16 dBm. It outputs the accurate power for each channel through the temperature sensor integrated in the SoC and calibration at the factory. On-board serial flash can be used for user application program and OTA software update and store MAC address, calibration data and information. It also can support execution in place (XIP) feature with a 16KB internal cache memory.

Table 1. Module Variants

Orderable Part Number	Connectivity	Frequency	Country/Region
BDE-HWF7394N-US	IEEE 802.11ah	902-928MHz	US, Japan, Korea, Singapore
BDE-HWF7394N-EU	IEEE 802.11ah	863-868MHz	Europe

Key Features

■ Standard

- Full IEEE 802.11ah compatibility with enhanced performance
- 1/2/4 MHz channel bandwidth, up to 15Mbps data rate
- WPA2/WPA3/WPS support
- Support transmission of standby radio frame

■ Radio Frequency

- +16 dBm transmit power
- -106 dBm minimum receive sensitivity (MCS10)
- 740~950 MHz frequency band by different module variants

■ Main Interface

- UART and SPI support for host interface

■ Peripherals

- GPIO, AUXADC
- I2C, SPI and UART

■ RF Transceiver

- Based on the industry-proven direct conversion transceiver architecture
- Includes a complete radio front-end part, which consists of a TX power amplifier and an LNA
- Integrated LDOs
- Wide supply voltage supportable with an integrated DC-DC buck converter
- Usable battery voltage range: 2.1V ~ 3.6V
- Radio calibration interfaces for digital baseband
- Internal temperature sensing and battery voltage monitoring
- Low supply current:
 - ✧ RX 15 mA @ 3.3V
 - ✧ TX 190 mA @ 3.3V @ +15 dBm
- Modulation bandwidth: 1/2/4 MHz

- RX noise figure < 6dB
- RX gain range: > 100dB
- RX IIP3: -17dBm @ LNA maximum gain
- Linear output power: +15 dBm
- TX gain range: > 30 dB
- EVM < -30 dB @ +15 dBm (w/ 64 QAM, DPD)
- Integrated RF PLL phase error < 0.7 degree

■ BUS Sub-System

- Firmware code can be stored and executed in external flash memory using XIP (execute-in-place) interface
- System Peripherals
 - ✧ 3 channel 32-bit timers
 - ✧ 1 channel 64-bit timers
 - ✧ 1 channel 32-bit watchdog timers
 - ✧ 1 channel 64-bit RTC with offset estimator
 - ✧ Serial flash controller for XIP with cache (16KB cache memory)
- General Direct Memory Controller
 - ✧ 8 DMA channels with 2 AHB masters
 - ✧ 16 controls for communicating with peripherals
- Data Peripherals
 - ✧ Max 20 general purpose I/Os
 - ✧ 1 HSPI (Host SPI) for host interface
 - ✧ 2 channel SPIs master/slave
 - ✧ 2 channel HSUARTs, up to 115200 baud rate
 - ✧ 2 channel I2C masters
 - ✧ 4 channel PWM generator
 - ✧ 10-bit ADC: 2ch input

■ MAC

- Basic features: S1G Beacon, NDP Control frame, TIM compression, unified scaling factor for max idle period/listen interval/WNM-sleep interval, STA Type, S1G baseline functions (DCF, HCF, multi-rate support, A-MPDU), and S1G BSS operation
- Network efficiency enhancements: NDP PS-Poll/PS-Poll Ack/Probe Resp., Raw avoidance,

- TSBTT, and differentiated EDCA parameter
- Power saving: Non-TIM operation, dynamic AID assignment and TWT
- BSS scalability (up to 8192 STAs): Multicast AID, and authentication control
- Low-cost STA/AP: EL operation, flow control
- Supports transmission of Standby Radio frame

■ PHY

- Full IEEE 802.11ah compatibility with enhanced performance
- Single-stream up to 15Mbps data rate
- Support 1/2/4 MHz channel with optional SGI
- Support S1G_1M, Short/Long format
- Modulation: OFDM with BPSK, QPSK, 16QAM, 64QAM

■ Memory

- 32KB Boot ROM
- 1088KB system SRAM
 - ✧ SRAM0: 512KB
 - ✧ SRAM1: 320KB
 - ✧ SRAM2: 192KB
 - ✧ SRAM3: 16KB
 - ✧ SRAM4: 48KB (Retention)
- 192KB Key memory for security
 - ✧ This memory could be used as additional 192KB SRAM2 in non-key memory & boot mode
- 16KB cache for XIP
 - ✧ This memory could be used as additional 16KB SRAM3 in non-cache & boot mode
- On-board 4Mbyte serial flash for XIP

■ Antenna

- ANT pin for external antenna

■ Regulatory

- FCC
- IC
- CE

■ Package

- Dimension: 13.5 mm x 13.5 mm x 2.1 mm

Applications

- Smart home and home security
- Smart factory and factory automation
- Smart city and public transportation management
- Smart grid/metering
- Surveillance camera and remote monitoring
- Wireless sensor network
- Health care
- Electric vehicle and charging
- Commercial drone

Reference

[1] NRC7394 resources: <https://newracom.com/products/nrc7394>

Contents

General Description	1
Key Features.....	1
Applications	3
Reference	4
Contents.....	5
List of Tables.....	5
List of Figures	6
1. System Overview.....	7
1.1. Block Diagram	7
1.2. ARM® Cortex®-M3 CPU	7
1.3. Power Management System	7
1.4. Clock.....	7
1.5. Boot Mode	7
1.6. Memory	8
1.7. E-FUSE	8
2. Pinout Functions	9
2.1. Pinout Diagram	9
2.2. Pinout Descriptions.....	10
2.3. Connections for Unused Pins	11
3. Characteristics.....	11
3.1. Electrical Characteristics	11
3.1.1. Absolute Maximum Ratings	11
3.1.2. ESD Ratings	12
3.1.3. Recommended Operating Conditions	12
4. Mechanical Specifications.....	12
4.1. Dimensions	12
4.2. PCB Footprint	13
4. Certification	14
4.3. Regulatory Compliance	14
4.4. Antenna.....	14
4.5. FCC Compliance	14
4.6. IC/ISED Compliance.....	16
4.7. ETSI/CE Compliance	17
5. Ordering Information	18
6. Revision History	18
Important Notice and Disclaimer	19
Contact.....	19

List of Tables

Table 1. Module Variants	1
Table 2. MODE Pin Description	8
Table 3. Pinout Description	10

Table 4. Connections for Unused Pins.....	11
Table 5. Absolute Maximum Ratings.....	12
Table 6. ESD Ratings.....	12
Table 7. Recommended Operating Conditions	12
Table 8. Certification Information.....	14
Table 9. Certified Antenna List.....	14

List of Figures

Figure 1. The Block Diagram of BDE-HWF7394N	7
Figure 2. Pinout Diagram of BDE-HWF7394N Top View.....	9
Figure 3. Mechanical Drawing for BDE-HWF7394N	13
Figure 4. Module Footprint for BDE-HWF7394N Top View.....	13

1. System Overview

1.1. Block Diagram

Deleted, confidential

Figure 1. The Block Diagram of BDE-HWF7394N

1.2. ARM® Cortex®-M3 CPU

The module is based on Newracom's NCR7394 SoC which has an ARM® Cortex®-M3 processor and a single AHB BUS subsystem that can accommodate the 802.11ah modem and various peripherals on a single die.

The Cortex®-M3 processor is a low-power RISC processor that features low gate count, low interrupt latency, and low-cost debug. It is for deeply embedded applications that require fast interrupt response features. The processor implements the ARM architecture v7-M.

This processor is used to implement the higher layers of IEEE802.11ah (HaLow) protocol as well as a simple user application program like a sensor application.

1.3. Power Management System

PMS is a subsystem that creates the required power in SoC NRC7394. It consists of a highly efficient DC-DC BUCK converter and several LDOs. Therefore, a single DC power range from 2.4 to 3.6V is sufficient to drive the NRC7394 without any additional voltage regulator.

The module has two inputs: VBAT and VDD_IO. The voltage level of external IOs can be set by VDD_IO. This offers user flexibility in designing system interfaces. VDD_IO can be connected to VBAT if the 3.3V voltage level is selected.

1.4. Clock

The module has two crystal oscillators with frequencies 32 MHz and 32.768 kHz. 32 MHz oscillator is the main clock source for CPU, BUS, RF, and modem circuits. 32.768 kHz clock is mainly used for Real Time Clock (RTC) and Power Save (PS) mode operation to reduce power consumption.

1.5. Boot Mode

MODE pin is provided for boot mode selection to offer flexible and configurable boot options as shown in following table. In the case of XIP boot, it is necessary to change to XIP boot mode after FW upload, so users need to install a switch that can control the mode pins on the board.

Table 2. MODE Pin Description

MODE Pin Input Level	Description
High/VDD_IO	XIP boot mode F/W should be downloaded in external flash memory before power on. The start address for boot is remapped to the start address of flash memory.
Low/GND	Boot ROM mode Boot from internal ROM code and wait for external command via HSPI or UART. The start address for boot is remapped to the start address of ROM memory.
	FW upload mode Firmware upgrade to external flash memory or upload to internal SRAM via UART0.

1.6. Memory

The module includes the following memories.

- ROM for boot of Cortex®-M3
- SRAM for internal memory
- SRAM4 for retention memory
- 192KB of key memory for security from MAC
- 16KB of cache memory for XIP from external flash memory

SoC NRC7394 memory map can be configured by boot mode or user setting. Default boot region (0x00000000) is mapped with physical memory and it depends on MODE pin configuration during reset sequence.

The module has an on-board 32-Mbit external serial flash memory for storing RF calibration data, MAC addresses, and programs.

1.7. E-FUSE

SoC NRC7394 has an internal 1024-bit one-time programmable electrical fuse (E-FUSE). It is used to store device-specific configuration information like PMS and RF calibration parameters and so on.

2. Pinout Functions

The module is with LGA-32 package, 32 pads are exposed for user. This section describes pinout functions of the module in details.

2.1. Pinout Diagram

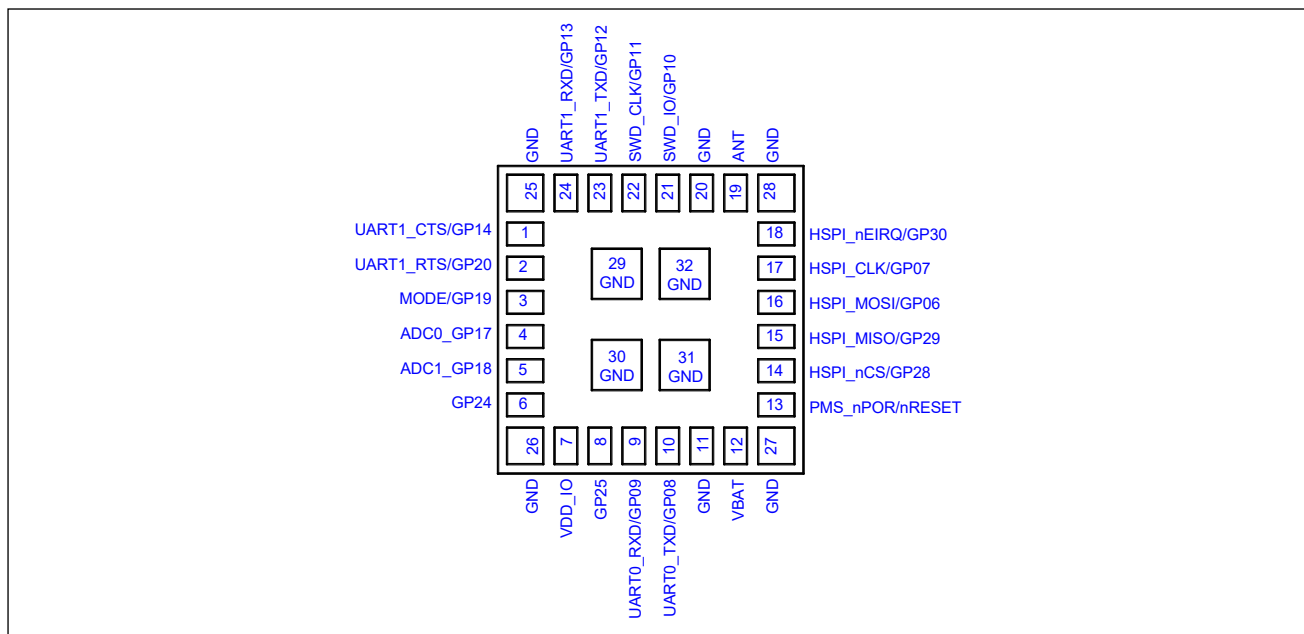


Figure 2. Pinout Diagram of BDE-HWF7394N Top View

The following I/O pins of the SoC are assigned to the on-board 32-Mbit SPI flash:

- GP5 as XIP_nCS
- GP4 as XIP_nHOLD
- GP3 as XIP_nWP
- GP2 as XIP_MISO
- GP1 as XIP_MOSI
- GP0 as XIP_CLK

2.2. Pinout Descriptions

Table 4 describes the definitions of the pins of the module. Pin number of NRC7394 chip is also stated.

Table 3. Pinout Description

Module Pin #	Pin Name	Direction	NRC7394 Pin #	Description
1	UART1_CTS/GP14	I	5	UART channel 1 clear to send; GPIO 14.
2	UART1_RTS/GP20	O	7	UART1 channel 1 request to send; GPIO 20.
3	MODE/GP19	I	8	Boot mode (0: ROM boot, 1: XIP boot), refer to Section 1.6; GPIO 19.
4	ADC0/GP17	I	18	Auxiliary ADC channel 0; GPIO 17.
5	ADC1/GP18	I	19	Auxiliary ADC channel 1; GPIO18.
6	GP24	I/O	22	GPIO 24
7	VDD_IO	P	6, 24	I/O power input
8	GP25	I/O	23	GPIO 25
9	UART0_RXD/GP09	I	46	UART channel 0 RX data; GPIO 09.
10	UART0_TXD/GP08	O	45	UART channel 0 TX data; GPIO 08.
11	GND	GND	-	Ground
12	VBAT	P	9, 10, 36	Main power , PMS, RF/PA power input
13	PMS_nPOR/nRST	I/O	40	Reset (active low) input; POR reset output (internal pull-up).
14	HSPI_nCS/GP28	I	41	Host SPI – chip select (active low); GPIO 28.
15	HSPI_MISO/GP29	O	42	Host SPI – master in slave out; GPIO 29.
16	HSPI_MOSI/GP06	I	43	Host SPI – master out slave in; GPIO 06.
17	HSPI_CLK/GP07	I	44	Host SPI – clock; GPIO 07.
18	HSPI_nEIRQ/GP30	O	47	Host SPI – interrupt (active low); GPIO 30.
19	ANT	I/O	-	Antenna port
20	GND	GND	-	Ground

Module Pin #	Pin Name	Direction	NRC7394 Pin #	Description
21	SWD_IO/GP10	I/O	48	SWD data; GPIO 10.
22	SWD_CLK/GP11	I	2	SWD clock; GPIO 11.
23	UART1_TXD/GP12	O	3	UART channel 1 TX data; GPIO 12.
24	UART1_RXD/GP13	I	4	UART channel 1 RX data; GPIO 13.
25	GND	GND	-	Ground
26	GND	GND	-	Ground
27	GND	GND	-	Ground
28	GND	GND	-	Ground
29	GND	GND	-	Ground, thermal pad
30	GND	GND	-	Ground, thermal pad
31	GND	GND	-	Ground, thermal pad
32	GND	GND	-	Ground, thermal pad

2.3. Connections for Unused Pins

Table 4. Connections for Unused Pins

Function	Signal Name	Acceptable Practice	Proffered Practice
GPIO (Digital or analog)	GPn	NC, GND or VDD	NC
SWD	SWD_IO, SWD_CLK	NC, GND or VDD	NC

3. Characteristics

3.1. Electrical Characteristics

3.1.1. Absolute Maximum Ratings

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to Absolute Maximum Rating conditions for extended periods may affect device reliability.

Over operating free-air temperature range (unless otherwise noted).

Table 5. Absolute Maximum Ratings

Parameter		Min	Max	Unit
Storage temperature range (T _{STG})		-40	+125	°C
Supply voltage	VBAT	-0.5	3.8	V
	VDD_IO	-0.5	3.8	V
	Analog/ANT pin	-0.5	2.1	V

3.1.2. ESD Ratings

Table 6. ESD Ratings

Parameter	Description	Value	Unit	Note
Electrostatic discharge	Contact discharge	4000	V	As per EN 301-489
	Air discharge	8000	V	As per EN 301-489

3.1.3. Recommended Operating Conditions

Operation at or near maximum operating temperature for extended durations will result in a reduction in lifetime.

Over operating free-air temperature range (unless otherwise noted).

Table 7. Recommended Operating Conditions

Parameter		Min	Typ	Max	Unit
Operating temperature range		-40	-	+85	°C
Operating voltage	VBAT	2.4	3.3	3.6	V
	VDD_IO	1.68	3.3	3.6	V
Peak operating current TX @16dBm	VBAT	250			mA
	VDD_IO	2			mA

Note:

- (1) To ensure WLAN performance, ripple on the 2.1- to 3.3-V supply must be less than ± 300 mV.

4. Mechanical Specifications

The following pages include mechanical and footprint drawings of the module.

4.1. Dimensions

The module dimensions are presented in the following figure:

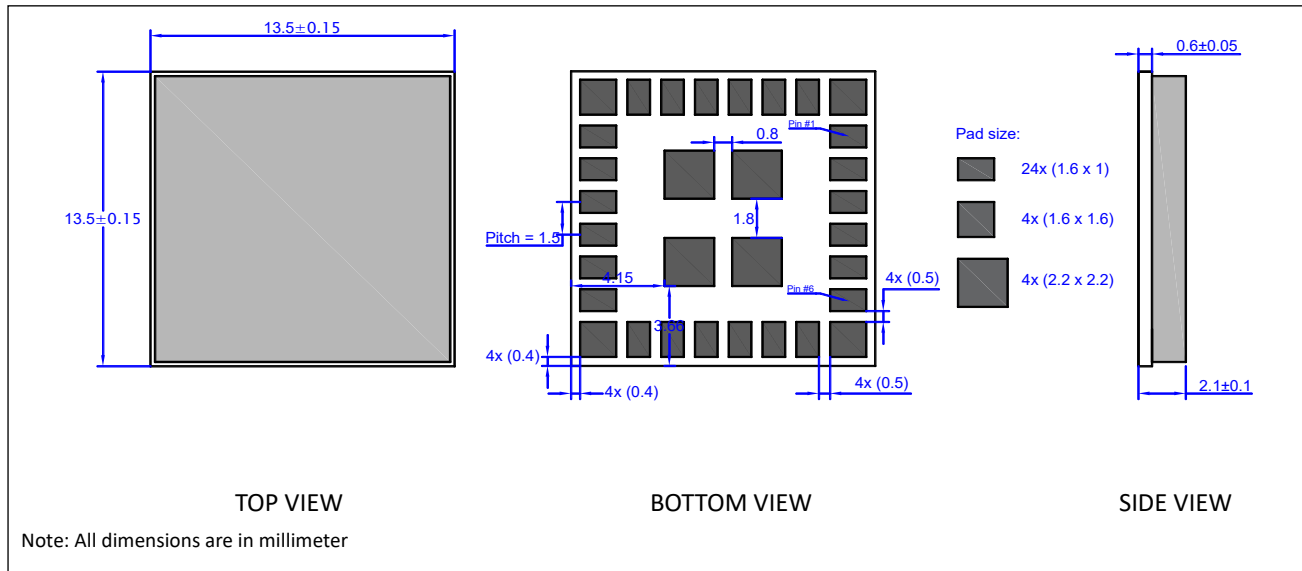


Figure 3. Mechanical Drawing for BDE-HWF7394N

4.2. PCB Footprint

The recommended footprint for the PCB is presented in the following figure:

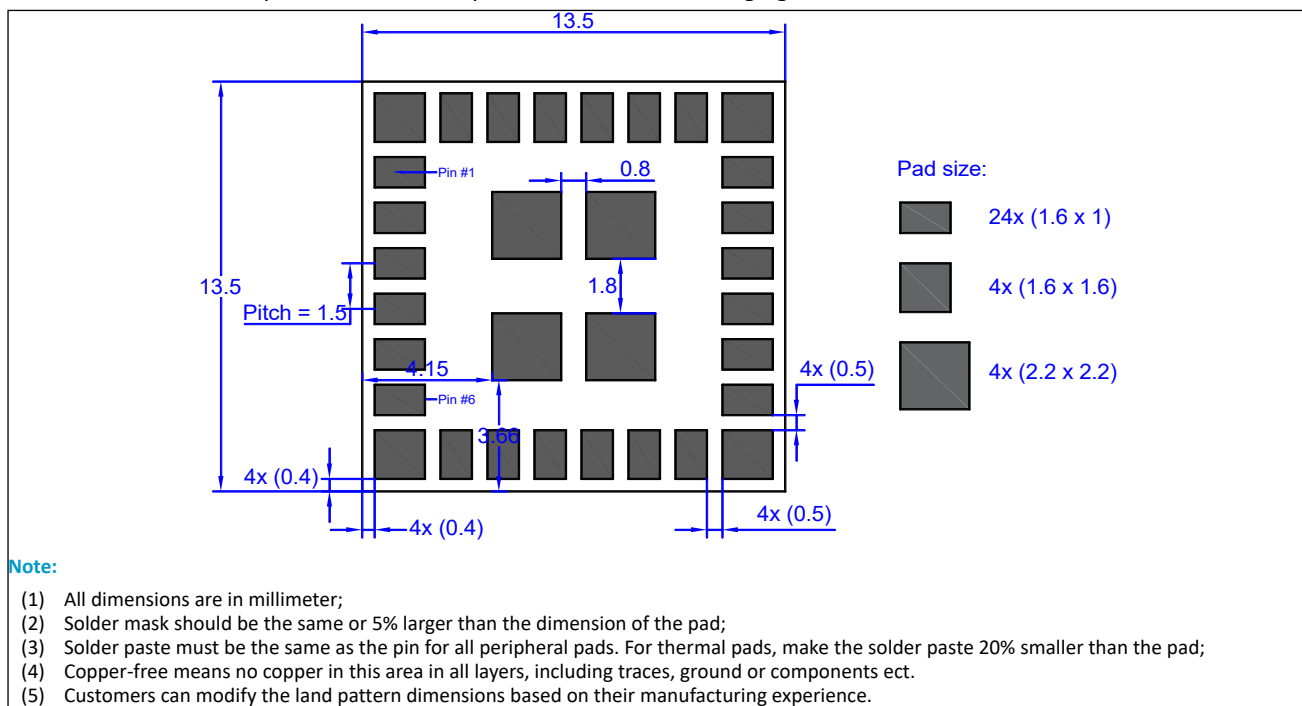


Figure 4. Module Footprint for BDE-HWF7394N Top View

5. Certification

5.1. Regulatory Compliance

The module is certified for FCC, IC/ISED and ETSI/CE as listed in below table. More regions can be cover by request.

Table 8. Certification Information

Regulatory Body / Region	ID	MPN
FCC (USA)	2ABRU-HWF7394N	BDE-HWF7394N-US
IC/ISED (Canada)	25657-HWF7394N	
ETSI/CE (Europe)	NA	BDE-HWF7394N-EU

5.2. Antenna

Table 9. Certified Antenna List

Manufacturer	Manufacturer Part Number	Antenna Type	Frequency Range (MHz)	Gain (dBi)	Note
BDE	BDE-W89-20713-HRP	Whip antenna	863 – 870	1.9	External
			902 - 928	3.8	

5.3. FCC Compliance

5.3.1. 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.

5.3.2. FCC Caution

Any changes or modifications to this unit not expressly approved by BDE for compliance could void the user's authority to operate the equipment. The integrator will be responsible to satisfy SAR/RF Exposure requirements, when the module integrated into the host device.

5.3.3. Integration Instructions

List of applicable FCC rules

FCC Part 15.247

Specific operational use conditions

This transmitter/module and its antenna(s) must not be co-located or operating in conjunction with any transmitter. This information also extends to the host manufacturer's instruction manual.

Limited module procedures

Not applicable

Trace antenna designs

Not applicable

RF exposure considerations

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This compliance to FCC radiation exposure limits for an uncontrolled environment, and minimum of 20cm separation between antenna and body. The host product manufacturer would provide the above information to end users in their end-product manuals.

Antennas

Refer to Table 9

Label and compliance information

The end product must carry a physical label or shall use e-labeling followed KDB784748D01 and KDB784748 stating "Contains Transmitter Module FCC ID: 2ABRU-HWF7394N".

Information on test modes and additional testing requirements

Contact BDE for more information.

Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts (FCC Part 15.247) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed when contains digital circuitry.

(OEM) Integrator has to assure compliance of the entire end-product that includes the module. For 15 B (§15.107 and if applicable §15.109) compliance, the host manufacturer is required to show compliance with 15 while the module is installed and operating.

Furthermore, the module should be transmitting and the evaluation should confirm that the module's intentional emissions (15C) are compliant (fundamental / out-of-band). Finally, the integrator has to apply the appropriate equipment authorization (e.g. Verification) for the new host device per definition in §15.101. Integrator is reminded to assure that these installation instructions will not be made available to the end-user of the final host device.

5.4. IC/ISED Compliance

5.4.1. IC Statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and,
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

5.4.2. IC Caution

Any changes or modifications to this unit not expressly approved by BDE for compliance could void the user's authority to operate the equipment. The integrator will be responsible to satisfy SAR/RF Exposure requirements, when the module is integrated into the host device.

5.4.3. Integration Instructions

Label and compliance information

The final host device, into which this RF module is integrated, has to be labeled with an auxiliary label stating the IC of the RF module, such as "Contains transmitter module IC: 25657-HWF7394N".

Informations sur l'étiquette et la conformité

Le périphérique hôte final, dans lequel ce module RF est intégré, doit être étiqueté avec une étiquette auxiliaire indiquant le CI du module RF, tel que "Contient le module émetteur IC: 25657-HWF7394N".

Radio Frequency Exposure Statement for IC

The device has been evaluated to meet general RF exposure requirements. The device can be used in mobile exposure conditions. The min separation distance is 20cm.

Déclaration d'exposition aux radiofréquences pour IC

L'appareil a été évalué pour répondre aux exigences générales en matière d'exposition aux RF. L'appareil peut être utilisé dans des conditions d'exposition mobiles. La distance de séparation minimale est de 20 cm. (TBD)

This radio transmitter [IC: 25657-HWF7394N] has been approved by Innovation, Science and Economic Development

Canada to operate with the antenna types listed in Table 9, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Cet émetteur radio [IC: 25657-HWF7394N] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous, avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste qui ont un gain supérieur au gain maximum indiqué pour tout type répertorié sont strictement interdits pour une utilisation avec cet appareil.

5.5. ETSI/CE Compliance

The module is certified with required EU radio and EMC directives. See Table 8 for detailed standards the module complies with, or refer to UK Declaration of Conformity.

6. Ordering Information

Orderable Part Number	Description	Size (mm)	Package	MOQ
BDE-HWF7394N-US	BDE Ultra-Low Power & Long-Range Wi-Fi HaLow Module Based on 802.11ah, 902 MHz to 928 MHz	13.5 x 13.5 x 2.1	Tape & Reel	TBD
BDE-HWF7394N-EU	BDE Ultra-Low Power & Long-Range Wi-Fi HaLow Module Based on 802.11ah, 863 MHz to 868 MHz	13.5 x 13.5 x 2.1	Tape & Reel	TBD

7. Revision History

Revision	Date	Description
V0.1	Jan-30, 2024	Preliminary, draft

You can find the latest documentation with this [link](#).

FCC 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 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your 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.

RF Exposure Information

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

ISED Statement

English: This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

The digital apparatus complies with Canadian CANICES-3 (B)/NMB-3(B).

French: Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada.

L'exploitation est soumise aux deux conditions suivantes:

- (1) Cet appareil ne doit pas provoquer d'interférences.
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

L'appareil numérique du dév. conforme canadien peut -3 (B)/NMB-3 (B).

This device meets the exemption from the routine evaluation limits in section 6.6 of RSS-102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Cet appareil est conforme à l'exemption des limites d'évaluation courante dans la section 6.6 du crr-102 et conformité avec RSS-102 de l'exposition aux rf, les utilisateurs peuvent obtenir des données canadiennes sur l'exposition aux champs rf et la conformité.

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment.

Cet équipement est conforme aux limites d'exposition aux rayonnements du Canada établies pour un environnement non contrôlé.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.

This radio transmitter has been approved by Industry Canada to operate with the antenna types listed with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Important Notice and Disclaimer

The information contained herein is believed to be reliable. BDE makes no warranties regarding the information contained herein. BDE assumes no responsibility or liability whatsoever for any of the information contained herein. BDE assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for BDE products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

Contact

BDE Technology Inc.

USA: 67 E Madison St, # 1603A, Chicago, IL 60603, US

Tel: +1-312-379-9589

Website: <http://www.bdecomm.com>

Email: info@bdecomm.com

China: B2-403, 162 Science Avenue, Huangpu District, Guangzhou 510663, China

Tel: +86-20-28065335

Website: <http://www.bdecomm.com>

Email: info@bdecomm.com