

General Description

The BDE-MB13R is a multiprotocol and multi-band (Sub-1GHz and 2.4GHz) wireless module series supporting Thread, Zigbee®, Bluetooth® 5.2 low Energy, IEEE 802.15.4g, IPv6-enabled smart objects (6LoWPAN), mioty, Wi-SUN, Amazon Sidewalk, proprietary systems including TI 15.4-Stack (Sub-1GHz and 2.4GHz), and concurrent multiprotocol through a Dynamic Multiprotocol Manager (DMM) driver. The module series is optimized for low-power wireless communication and advanced security features in building security systems, HVAC, smart meters, medical, wired networking, portable electronics, home theater & entertainment markets and connected peripherals markets.

The module series has a software defined radio powered by an Arm® Cortex® M0 which allows support for multiple physical layers and RF standards. PHY and frequency switching can be done runtime through a dynamic multiprotocol manager (DMM) driver. The module supports +14 dBm TX at 25.8 mA in the Sub-1GHz band and +5 dBm TX at 9.6 mA in the 2.4-GHz band. It has a receive sensitivity of -104 dBm for 125-kbps Bluetooth® Low Energy Coded PHY.

The module series integrates all required system-level hardware components including clocks, balun filter, other passives, and PCB trace antenna or U.FL connector into a small PCB form factor. It is for easy assembly and low-cost PCB design.

The module series is pre-certified with FCC, ISED, CE and Bluetooth SIG to make easy integration and fast time-to-market for customers.

In order to fulfill different application scenarios, we provide different variants for users.

Table 1. Module Variants

Model Number	Orderable Part Number	Chipset	Flash (KB)	SRAM (KB)	Antenna on Sub-1G	Antenna on 2.4G	On-Board SPI Flash	Operating Temperature (°C)
BDE-MB13R	BDE-MB1354R10UA32	CC1354R10	1024	288	U.FL Connector	PCB Trace Antenna	32Mbit	-40 ~ +85
	ANT Pin				PCB Trace Antenna			
	U.FL Connector				U.FL Connector			
	ANT Pin				U.FL Connector			
	U.FL Connector				ANT Pin			
	ANT Pin				ANT Pin			
	U.FL Connector				PCB Trace Antenna	Not Included		
	ANT Pin				PCB Trace Antenna			
	U.FL Connector				U.FL Connector			
	ANT Pin				U.FL Connector			
	U.FL Connector				ANT Pin			
	ANT Pin				ANT Pin			
	U.FL Connector				PCB Trace Antenna	32Mbit	-40 ~ +105	
	ANT Pin				PCB Trace Antenna			
	U.FL Connector				U.FL Connector			
	ANT Pin				U.FL Connector			
	U.FL Connector				ANT Pin			
	ANT Pin				ANT Pin			
	U.FL Connector				PCB Trace Antenna	Not Included		
	ANT Pin				PCB Trace Antenna			
	U.FL Connector				U.FL Connector			
	ANT Pin				U.FL Connector			
	U.FL Connector				ANT Pin			

Model Number	Orderable Part Number	Chipset	Flash (KB)	SRA M (KB)	Antenna on Sub-1G	Antenna on 2.4G	On-Board SPI Flash	Operating Temperature (°C)
	BDE-MB1354R10NN0-IN				ANT Pin	ANT Pin		
	BDE-MB1352RUA32	CC1352R	352	80	U.FL Connector	PCB Trace Antenna	32Mbit	-40 ~ +85
	BDE-MB1352RNA32				ANT Pin	PCB Trace Antenna		
	BDE-MB1352RUU32				U.FL Connector	U.FL Connector		
	BDE-MB1352RNU32				ANT Pin	U.FL Connector		
	BDE-MB1352RUN32				U.FL Connector	ANT Pin		
	BDE-MB1352RNN32				ANT Pin	ANT Pin		
	BDE-MB1352RUA0				U.FL Connector	PCB Trace Antenna	Not Included	
	BDE-MB1352RNA0				ANT Pin	PCB Trace Antenna		
	BDE-MB1352RUU0				U.FL Connector	U.FL Connector		
	BDE-MB1352RNU0				ANT Pin	U.FL Connector		
	BDE-MB1352RUN0				U.FL Connector	ANT Pin		
	BDE-MB1352RNN0				ANT Pin	ANT Pin		
	BDE-MB1352RUA32-IN				U.FL Connector	PCB Trace Antenna	32Mbit	-40 ~ +105
	BDE-MB1352RNA32-IN				ANT Pin	PCB Trace Antenna		
	BDE-MB1352RUU32-IN				U.FL Connector	U.FL Connector		
	BDE-MB1352RNU32-IN				ANT Pin	U.FL Connector		
	BDE-MB1352RUN32-IN				U.FL Connector	ANT Pin		
	BDE-MB1352RNN32-IN				ANT Pin	ANT Pin		
	BDE-MB1352RUA0-IN				U.FL Connector	PCB Trace Antenna	Not Included	
	BDE-MB1352RNA0-IN				ANT Pin	PCB Trace Antenna		
	BDE-MB1352RUU0-IN				U.FL Connector	U.FL Connector		
	BDE-MB1352RNU0-IN				ANT Pin	U.FL Connector		
	BDE-MB1352RUN0-IN				U.FL Connector	ANT Pin		
	BDE-MB1352RNN0-IN				ANT Pin	ANT Pin		

Key Features

■ Wireless microcontroller

- Powerful 48-MHz Arm® Cortex®- M33 processor with TrustZone® (CC1354R10) or Arm Cortex-M4 (CC1352R)
- FPU and DSP extension
- 1024 KB flash program memory (CC1354R10) or 352 KB (CC1352R)
- 8 KB of cache SRAM
- 288 KB SRAM (CC1354R10) or 80 KB (CC1352R)
- Dual-band Sub-1GHz and 2.4GHz operation
- Dynamic multiprotocol manager (DMM) driver
- Programmable radio includes support for 2-(G)FSK, 4-(G)FSK, MSK, OOK, IEEE 802.15.4 PHY and MAC
- Supports over-the-air upgrade (OTA)

■ Ultra-low power sensor controller

- Autonomous MCU with 4 KB of SRAM
- Sample, store, and process sensor data

- Fast wake-up for low-power operation
- Software defined peripherals, capacitive touch, flow meter, LCD

■ Low power consumption

- MCU consumption:
 - ✧ 3.4 mA active mode, CoreMark®
 - ✧ 71 µA/MHz running CoreMark®
 - ✧ 0.98 µA standby mode, RTC, 256 KB RAM
 - ✧ 0.17 µA shutdown mode, wake-up on pin
- Ultra low-power sensor controller consumption:
 - ✧ 32 µA in 2 MHz mode
 - ✧ 820 µA in 24 MHz mode
- Radio Consumption:
 - ✧ 5.8 mA RX at 868 MHz
 - ✧ 6.9 mA RX at 2.4 GHz
 - ✧ 9.6 mA TX at +5 dBm at 2.4 GHz
 - ✧ 25.8 mA TX at +14 dBm at 868 MHz

■ Wireless protocol support

- Thread, Zigbee®, Matter
- Bluetooth® 5.2 Low Energy
- Wi-SUN
- Mioty
- Amazon Sidewalk (CC1354R10)
- Wireless M-Bus
- SimpleLink™ TI 15.4-stack (Sub-1GHz)
- 6LoWPAN
- Proprietary systems
- **High performance radio**
 - -121 dBm for 2.5 kbps long-range mode
 - -110 dBm at 50 kbps, 802.15.4, 868 MHz
 - -104 dBm for Bluetooth® Low Energy 125 kbps
 - -105 dBm for IEEE 802.15.4-2006 2.4 GHz OQPSK (coherent modem)
- **Regulatory compliance**
 - FCC
 - IC
 - CE-RED
 - Bluetooth SIG
- **MCU peripherals**
 - Most digital peripherals can be routed to any GPIO
 - Four 32-bit or eight 16-bit general-purpose timers
 - 12-bit SAR ADC, 200 ksps, 8 channels
 - 8-bit DAC
 - Two comparators
 - Programmable current source
 - Four UART, four SPI, two I²C, I²S
 - Real-time clock (RTC)
- Integrated temperature and battery monitor
- 28 GPIOs – none SPI flash versions
- 24 GPIOs – SPI flash versions
- **Security enablers**
 - Supports secure boot
 - Supports secure key storage and device ID
 - Arm® TrustZone® for trusted execution environment
 - AES 128- and 256-bit cryptographic accelerator
 - Public key accelerator
 - SHA2 Accelerator (full suite up to SHA-512)
 - True random number generator (TRNG)
 - Secure debug lock
 - Software anti-rollback protection
- **Operating range**
 - On-chip buck DC/DC converter
 - 1.8 V to 3.8 V single supply voltage
 - 2.3-V to 3.6-V single supply voltage (SPI flash variants)
 - -40 to +85°C
- **Antenna**
 - U.FL connector or ANT pin for Sub-1G band
 - PCB trace antenna, U.FL connector or ANT pin for 2.4G band
- **On-Module SPI Flash**
 - 32-Mbit, only available in SPI flash versions
- **Package**
 - Dimension: 26 mm x 19 mm x 2.15 mm
 - LCC-42
 - RoHS-compliant package

Applications

- 868, 902 to 928, and 2400 to 2480 MHz ISM and SRD systems with down to 4 kHz of receive bandwidth
- Building automation
 - Building security systems – motion detector, electronic smart lock, door and window sensor, garage door system, gateway
 - HVAC – thermostat, wireless environmental sensor, HVAC system controller, gateway
 - Fire safety system – smoke and heat detector, fire alarm control panel (FACP)
 - Video surveillance – IP network camera
 - Elevators and escalators – elevator main control panel for elevators and escalators
- Grid infrastructure
 - Smart meters – water meter, gas meter, electricity meter, and heat cost allocators
 - Grid communications – wireless communications – Long-range sensor applications
 - Other alternative energy – energy harvesting
- Industrial transport – asset tracking
- Factory automation and control
- Medical
- Communication equipment
 - Wired networking – wireless LAN or Wi-Fi access points, edge router
- Personal electronics
 - Home theater & entertainment – smart speakers, smart display, set-top box
 - Wearables (non-medical) – smart trackers, smart clothing

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1. References

- [1] CC1354R10 resources: <https://www.ti.com/product/CC1354R10>
- [2] CC1352R resources: <https://www.ti.com/product/CC1352R>

2. Block Diagram

Deleted, confidential

Figure 1. BDE-MB13R Module Block Diagram

3. Terminal Configuration and Functions

3.1. Pin Diagram

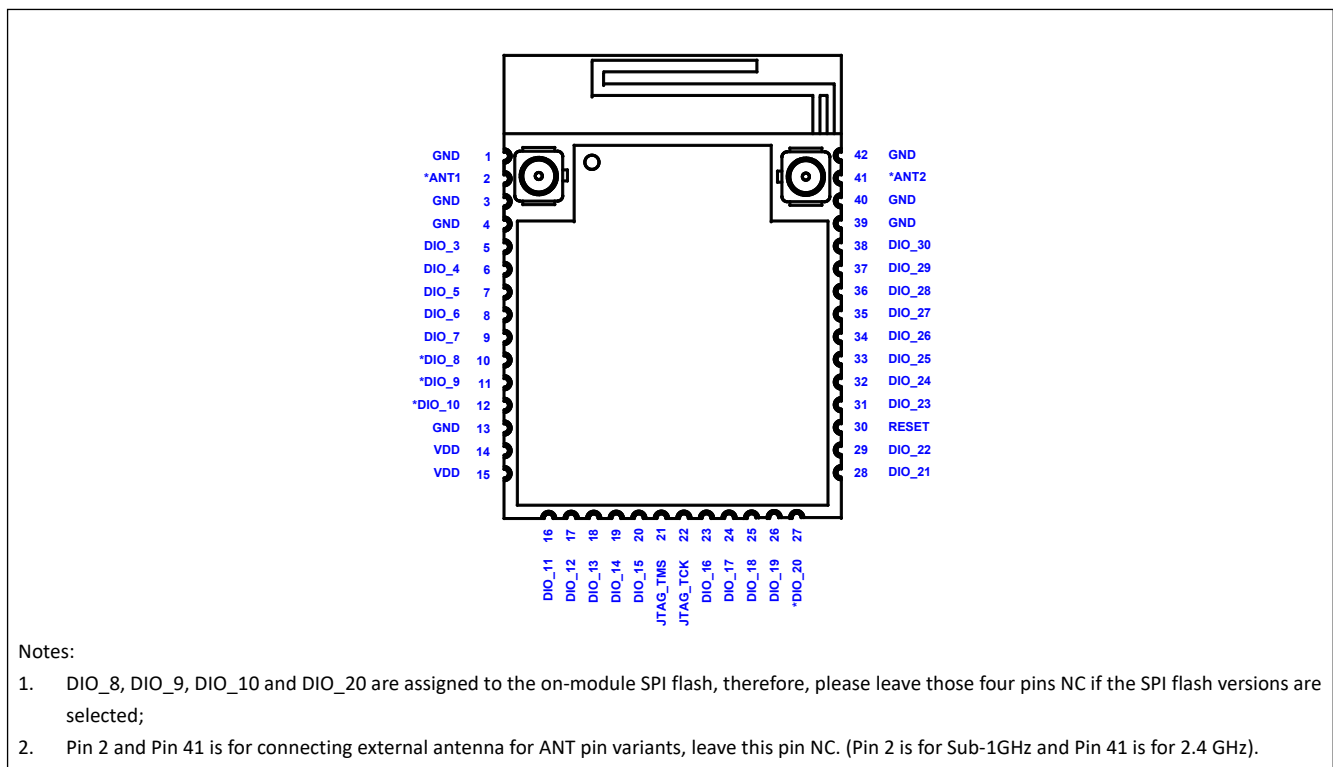


Figure 2. Pin Diagram of BDE-MB13R (Top View)

3.2. Pin Attributes and Pin Multiplexing

Table 1 describes the definitions of the pins of the module.

Table 2. Pin Description ⁽¹⁾

Module Pin #	Pin Name	Type	Description
1	GND	Ground	Power ground
2	ANT1	RF	Antenna port for Sub-1GHz
3	GND	Ground	Power ground
4	GND	Ground	Power ground
5	DIO_3	I/O	GPIO
6	DIO_4	I/O	GPIO
7	DIO_5	I/O	GPIO, high-drive capability
8	DIO_6	I/O	GPIO, high-drive capability
9	DIO_7	I/O	GPIO, high-drive capability
10	DIO_8	I/O	GPIO, assigned as SPI_MISO of on-module SPI flash in BDE-MB1354R10XX32

Module Pin #	Pin Name	Type	Description
11	DIO_9	I/O	GPIO, assigned as SPI_MOSI of on-module SPI flash in BDE-MB1354R10XX32
12	DIO_10	I/O	GPIO, assigned as SPI_SCLK of on-module SPI flash in BDE-MB1354R10XX32
13	GND	Ground	Power ground
14	VDD	Power	Power supply
15	VDD	Power	Power supply
16	DIO_11	I/O	GPIO
17	DIO_12	I/O	GPIO
18	DIO_13	I/O	GPIO
19	DIO_14	I/O	GPIO
20	DIO_15	I/O	GPIO
21	JTAG_TMSC	I/O	JTAG TMS, high-drive capability
22	JTAG_TCKC	I	JTAG TCK
23	DIO_16	I/O	GPIO, JTAG_TDO, high-drive capability
24	DIO_17	I/O	GPIO, JTAG_TDI, high-drive capability
25	DIO_18	I/O	GPIO
26	DIO_19	I/O	GPIO
27	DIO_20	I/O	GPIO, assigned as SPI_CS of on-module SPI flash in BDE-MB1354R10XX32
28	DIO_21	I/O	GPIO
29	DIO_22	I/O	GPIO
30	RESET	I	Reset, active low, 100K ohm internal pull-up resistor
31	DIO_23	I/O	GPIO, analog capability
32	DIO_24	I/O	GPIO, analog capability
33	DIO_25	I/O	GPIO, analog capability
34	DIO_26	I/O	GPIO, analog capability
35	DIO_27	I/O	GPIO, analog capability
36	DIO_28	I/O	GPIO, analog capability
37	DIO_29	I/O	GPIO, analog capability
38	DIO_30	I/O	GPIO, analog capability
39	GND	Ground	Power ground
40	GND	Ground	Power ground
41	ANT2	RF	Antenna port for 2.4 GHz
42	GND	Ground	Power ground

Note ⁽¹⁾: For more information, please refer to [CC1354R10](#) datasheet;

4. Specifications

4.1. Absolute Maximum Ratings

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

Table 3. Absolute Maximum Ratings

PARAMETER	MIN	MAX	UNIT	Notes
VDD	-0.3	4.1	V	
Voltage on any digital pins	-0.3	VDD+0.3≤4.1	V	
Voltage on ADC input	-0.3	VDDS	V	Voltage scaling enabled
	-0.3	1.49	V	Voltage scaling disabled, internal reference
	-0.3	VDD/2.9	V	Voltage scaling disabled, VDD as reference
Storage temperature	-40	150	°C	

4.2. Recommended Operating Conditions

Table 4. Recommended Operating Conditions

PARAMETER	MIN	TYP	MAX	UNIT	Note
VDD	1.8	3.3	3.8	V	
VDD (For SPI flash variants)	2.3	3.3	3.8	V	
Operating temperature	-40	-	85	°C	
	-40		105	°C	For -IN variants
Rising supply voltage slew rate	0		100	mV/us	
Falling supply voltage slew rate	0		20	mV/us	

5. Mechanical Specifications

5.1. Dimensions

The following pages include mechanical, footprint drawings, and marking information. This information is the most current data available for the designated devices.

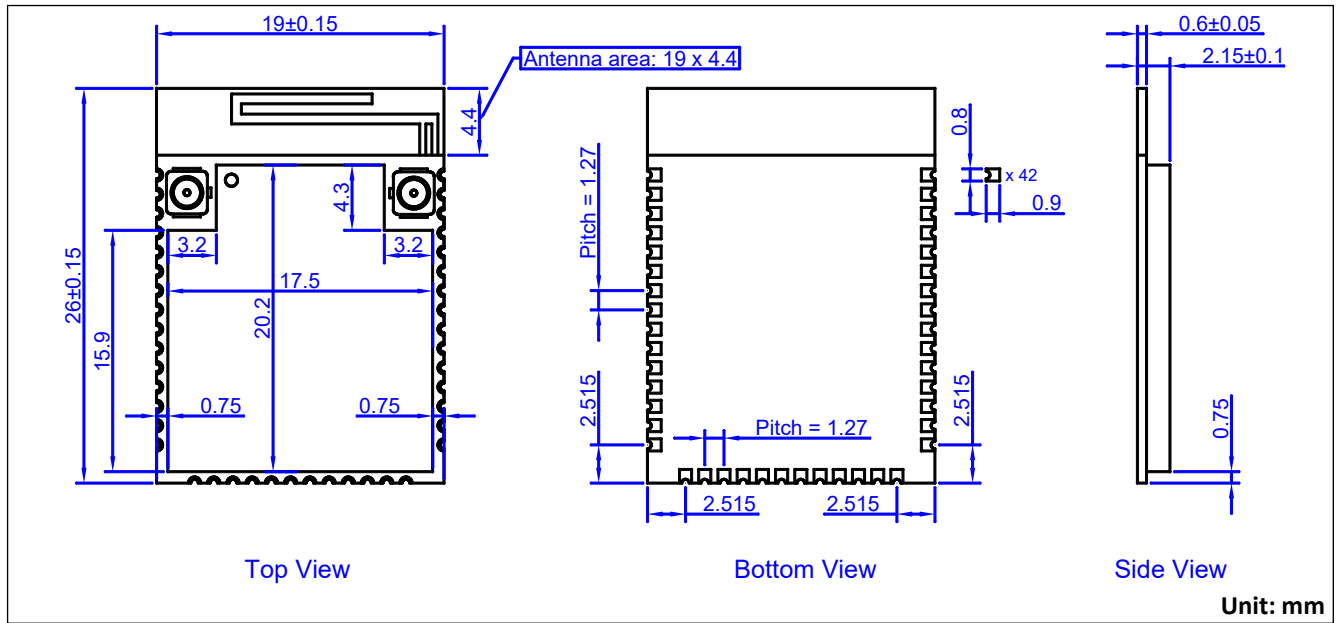
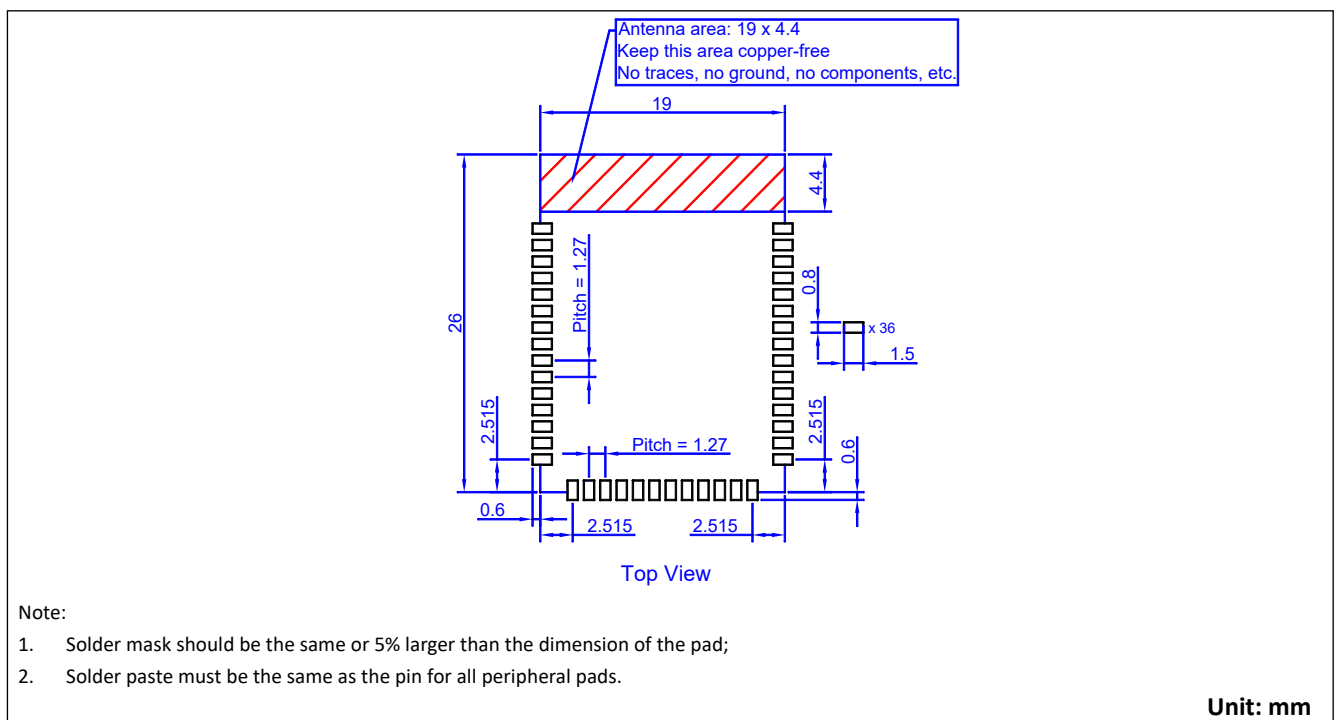


Figure 3. Mechanical Drawing of BDE-MB13R

5.2. PCB Footprint



Note:

1. Solder mask should be the same or 5% larger than the dimension of the pad;
2. Solder paste must be the same as the pin for all peripheral pads.

Figure 4. Recommended Module Footprint of BDE-MB13R

6. Typical Reflow Profile

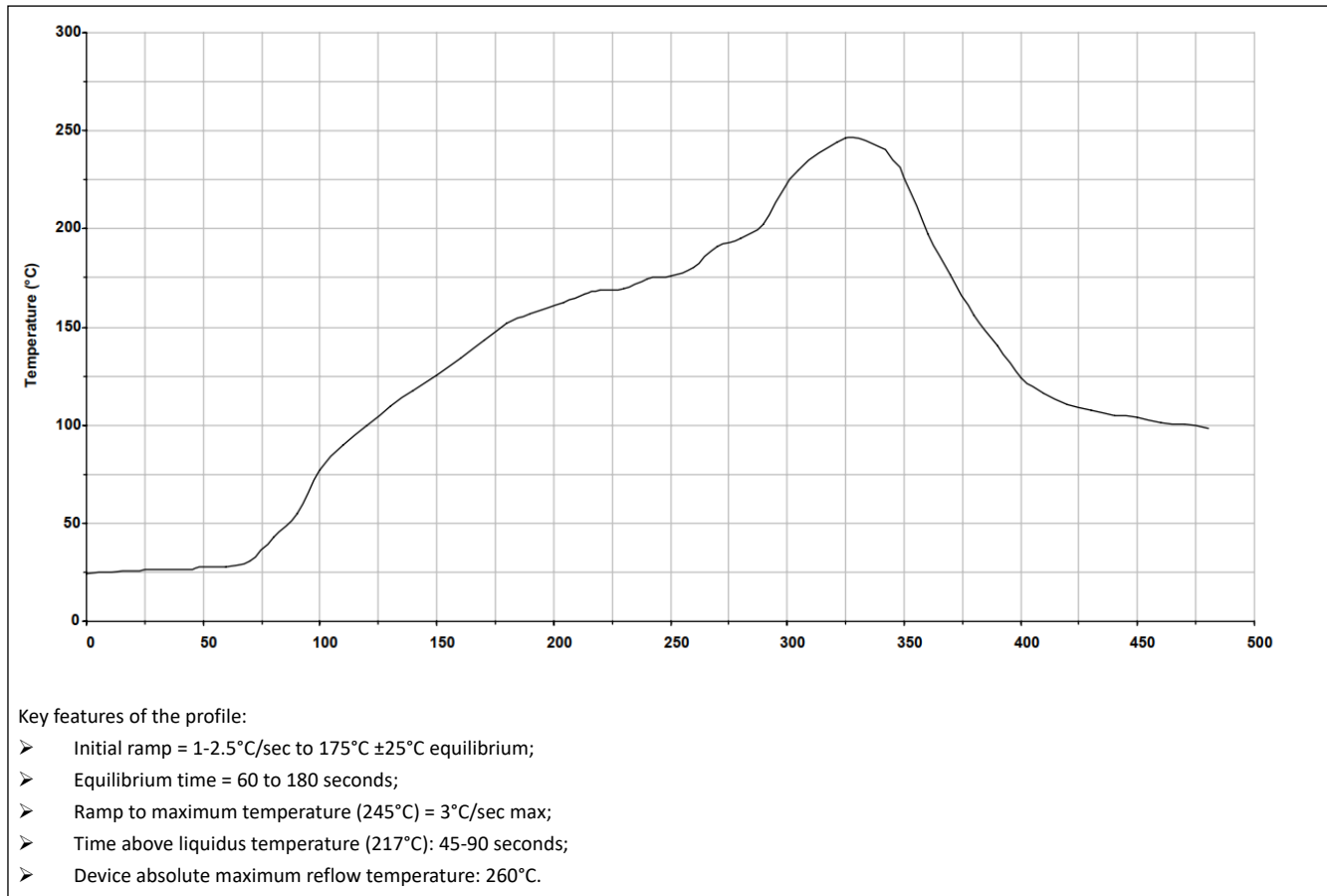


Figure 5. Typical Reflow Profile

7. Certification

7.1. 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 2. Certification Information

Regulatory Body / Region	ID	MPN
FCC (USA)	2ABRU-MB13R	BDE-MB1354R10UA32
IC/ISED (Canada)	25657-MB13R	BDE-MB1354R10NA32
ETSI/CE (Europe)	NA	BDE-MB1354R10UU32
		BDE-MB1354R10NU32
		BDE-MB1354R10UN32
		BDE-MB1354R10NN32
		BDE-MB1354R10UA0
		BDE-MB1354R10NA0
		BDE-MB1354R10UU0
		BDE-MB1354R10NU0
		BDE-MB1354R10UN0
		BDE-MB1354R10NN0
		BDE-MB1354R10UA32-IN
		BDE-MB1354R10NA32-IN
		BDE-MB1354R10UU32-IN
		BDE-MB1354R10NU32-IN
		BDE-MB1354R10UN32-IN
		BDE-MB1354R10NN32-IN
		BDE-MB1354R10UA0-IN
		BDE-MB1354R10NA0-IN
		BDE-MB1354R10UU0-IN
		BDE-MB1354R10NU0-IN
		BDE-MB1354R10UN0-IN
		BDE-MB1354R10NN0-IN
		BDE-MB1352RUA32
		BDE-MB1352RNA32
		BDE-MB1352RUU32
		BDE-MB1352RNU32
		BDE-MB1352RUN32
		BDE-MB1352RNN32
		BDE-MB1352RUA0
		BDE-MB1352RNA0
		BDE-MB1352RUU0
		BDE-MB1352RNU0
		BDE-MB1352RUN0
		BDE-MB1352RNN0

Regulatory Body / Region	ID	MPN
		BDE-MB1352RUA32-IN BDE-MB1352RNA32-IN BDE-MB1352RUU32-IN BDE-MB1352RNU32-IN BDE-MB1352RUN32-IN BDE-MB1352RNN32-IN BDE-MB1352RUA0-IN BDE-MB1352RNA0-IN BDE-MB1352RUU0-IN BDE-MB1352RNU0-IN BDE-MB1352RUN0-IN BDE-MB1352RNN0-IN

7.2. Antenna

Table 6. Certified Antenna List

Manufacturer	Manufacturer Part Number	Antenna Type	Frequency Range (MHz)	Gain (dBi)	Note
BDE	BDE-ANT-MB13	PCB trace antenna	2400 - 2450	0.8	Integrated
BDE	BDE-W25-19513-HRP	Whip antenna	2400 - 2500	3.0	External
BDE	BDE-W89-20713-HRP	Whip antenna	863 – 870 902 - 928	3.8	External

7.3. FCC Compliance

7.3.1. 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.

7.3.2. 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.

7.3.3. 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 6

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-MB13R”.

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.

7.4. IC/ISED Compliance

7.4.1. 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.

7.4.2. 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

integrated into the host device.

7.4.3. 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-MB13R".

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-MB13R".

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-MB13R] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed in Table 6, 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-MB13R] 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.

7.5. ETSI/CE Compliance

The module is certified with required EU radio and EMC directives. See Table 5 for detailed standards the module complies with, or refer to UK Declaration of Conformity.

8. Ordering Information

Part Number	Size (mm)	Chipset	Shipping Form	MOQ
BDE-MB1354R10NN32	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NU32	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NA32	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UN32	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UU32	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UA32	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NN0	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NU0	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NA0	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UN0	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UU0	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UA0	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NN32-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NU32-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NA32-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UN32-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UU32-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UA32-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NN0-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NU0-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10NA0-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UN0-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UU0-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1354R10UA0-IN	26 × 19 × 2.15	CC1354R106TORGZ	Tape & Reel	1K
BDE-MB1352RUA32	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNA32	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUU32	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNU32	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUN32	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNN32	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUA0	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNA0	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUU0	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNU0	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUN0	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNN0	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUA32-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNA32-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUU32-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNU32-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUN32-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNN32-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUA0-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNA0-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUU0-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RNU0-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUN0-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K
BDE-MB1352RUN0-IN	26 × 19 × 2.15	CC1352R1F3RGZR	Tape & Reel	1K

Note: This module series supports extended industrial temperature grade which can operates from -40℃ to 105℃. The part number should comes with “-IN” suffix. For example, the part number BDE-MB1354R10UA32-IN is the extended industrial temperature grade version.

9. Revision History

Revision	Date	Description
V1.0	8-June-2024	Initial release

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Contact

BDE Technology Inc.

USA: 67 E Madison St, # 1603A, Chicago, IL 60603, US
Tel: +1-312-379-9589

China: B2-403, 162 Science Avenue, Huangpu District, Guangzhou 510663, China
Tel: +86-20-28065335

Website: www.bdecomm.com

Email: shu@bdecomm.com