


EGIGATEK eGM-A33 Brief

(nRF52840 BT5.0 long range based BLE dual mode Module)

1. Description

eGM-A33 is a BT 5.0 stack module and based on Nordic nRF52840 SoC solution, which incorporates: GPIO, SPI, UART, I2C, I2S, PMD, PWM, ADC, NFC and USB interfaces for connecting peripherals and sensors.

2. Features

- Embedded 2.4GHz transceiver supports Bluetooth 5 ( Bluetooth®), IEEE 802.15.4 (THREAD & Zigbee) & 2.4Ghz RF & ANT⁺ upon customer's preference.
- Low power requirements, ultra-low peak, average and idle mode power consumption.
- Be compatible with a large installed base of mobile phones, tablets and computers.
- Fully coverage of BLE software stack.
- BLE & RF transmission switching helps products fit all operation system and most hardware.
- Bluetooth 5, IEEE 802.15.4, 2.4 GHz transceiver
 - -95dBm sensitivity in 1Mbps Bluetooth low energy (BLE) mode
 - -103dBm sensitivity in 125Kbps BLE mode (long range)
 - +8 dBm TX power (down to -20 dBm in 4 dB steps)
 - On-air compatible with nRF52, nRF51, nRF24L and nRF24AP Series
 - Programmable output power from +8dBm to -20dB
 - RSSI (1dB resolution)
 - Supported data rates:
 - Bluetooth 5: 2 Mbps, 1 Mbps, 500 kbps, 125 kbps
 - IEEE 802.15.4-2006: 250 kbps
 - Proprietary 2.4 GHz: 2 Mbps, 1 Mbps
- ARM Cortex –M4 32-bit processor with FPU, 64 MHz
- Memory: 1MB flash / 256KB RAM
- HW accelerated security
 - ARM TrustZone Cryptocell 310 security subsystem
 - 128 bit AES / ECB / CCM / AAR co-processor (on-the-fly packet

encryption)

- 12 bit, 200ksps ADC – 8 configurable channels with programmable gain
- 4 x 4 channel pulse width modulator (PWM) units with EasyDMA
- Audio peripherals : I2S, digital microphone interface (PDM)
- 5 X 32-bit timers with counter mode
- Up to 4 x SPI masters / 3 x SPI slaves with EasyDMA
- Up to 2 x I2C compatible 2-wire masters / slaves
- 2 x UART(CTS/RTS) with EasyDMA
- Quadrature decoder (QDEC)
- 3 x 24-bit real-time counters (RTC)
- Flexible power management
- Working distance of eGM-A33(integrated printed antenna) :
 - 1Mbps: eGM-A33: up to 250 meters in open space
 - 2Mbps: eGM-A33: up to 100 meters in open space
- Dimensions: with printed antenna : L15.5 mm x W10.5 mm x 2.0 mm
- Storage temperature range: -40°C ~ +125°C
- Operating temperature range: -40°C ~ +85°C
- Certified BT5.0 BLE and/or IEEE802.15.4: BQB/ FCC/ IC/ CE(EU) & RCM/ TELEC/ KC/ WPC(ETA)/ NCC /SRRC/
- Manufactured in conformance with RoHS

3. Applications

- IoT Networks
 - Smart home (such as door locks, lighting) sensors and controllers
 - Smart city sensor networks
 - Industrial IoT sensors and controllers Connected white goods
- Personal Area Networks
 - Health / fitness sensor and monitor device
 - Medical device
- Interactive entertainment devices
 - Advanced remote controls
 - Gaming controller
- Advanced wearables
 - Connected watches
 - Advanced personal fitness devices
 - Wearables with wireless secure payment
 - Connected Health
 - Virtual/Augmented Reality applications

- High performance HID Controllers
- Mesh Network

4. Pin Placement and Dimensions (in mm)

