



CONNECTIVITY CARD MGM240P MPCIE

Datasheet, Release 1.0

Remote monitoring of critical infrastructure with edge computing

The MGM240P 5G Suite Connectivity Cards from CTHINGS.CO® are extension cards based on the Silicon Labs® MGM240P SoC. They are multi-protocol chips designed to empower IoT integrators to implement IEEE 802.15.4 connectivity like Bluetooth Low Energy, Bluetooth Mesh, Zigbee®, OpenThread® and other 2.4 GHz protocols. The extension card allows for full-fledged utilisation of the on-board 32-bit ARM® CortexTM-M33 CPU.

The product comes with full CE class-B and RED certification and can be used to quickly and reliably add 2.4 GHz protocol stack support to any existing device with a mini-PCle slot without worrying about certification or radio performance. A full J-Trace connector is available on a programming jig for convenient firmware development.

CTHINGS.CO also provides support for Silabs Bootloader and EmberZNet Software Stack.

contact@cthings.co



SPECIFICATIONS

Hardware Features	 Mini PCI-express connector pinout compliant Single-ended U.FL antenna connector Based on Silicon Labs® MGM240P Ultra-low power consumption RF output power up to +20 dBm ARM® Cortex®-M33 32-bit processor Compatible with CTHINGS.CO Programming Jig
Software Features	Silabs BootloaderSilabs EmberZNet Software Stack
Electrical Specification	 3.3 V nominal supply voltage (electrically mini-PCle compliant) 3.0 V - 5.0 V supply voltage range ESD protected Ultra-Low power consumption
RF Specifications	 +20 dBm TX output power -106.0 dBm 802.15.4 RX sensitivity -106.0 dBm (1% PER) @ 250 kbps O-QPSK DSSS -106.5 dBm (0.1% BER) @ 125 kbps GFSK -102.2 dBm (0.1% BER) @ 500 kbps GFSK -98.5 dBm (0.1% BER) @ 1 Mbps GFSK -95.7 dBm (0.1% BER) @ 2 Mbps GFSK
Embedded Security	 ARM TrustZone Secure Boot with Root of Trust and Secure Loader (RTSL) Hardware Cryptographic Acceleration Peripheral



SPECIFICATIONS

Certifications

The CTHINGS.CO® MGM240P mPCle Connectivity Card is CE Class-B, Radio Equipment Directive (RED), & EU RoHS directive compliant. US FCC and UK CA certification is planned. The device has been tested to meet the following electromagnetic compatibility standards:

Electromagnetic emissions:

- Conducted emission: EN 55022, EN 55014-1, EN 55011
- Radiated emission up to 6 GHz
- Harmonic current emission: EN 61000-3-2
- Voltage fluctuations and flicker: EN 61000-3-3

Immunity to electromagnetic interference (EMI):

- Electrostatic discharge (ESD) immunity: EN 61000-4-2
- Radiated electromagnetic field immunity: EN 61000-4-3
- Electrical fast transient / burst immunity: EN 61000-4-4
- Surge immunity: EN 61000-4-5
- Conducted disturbance immunity: EN 61000-4-6
- Power frequency magnetic field immunity: EN 61000-4-8
- Pulse magnetic field immunity: EN 61000-4-9
- Voltage dips & short interruptions: EN 61000-4-11

Use Cases

- IoT Gateways
- Workstations and Laptops
- Cellular backhaul systems for non-cellular Zigbee meshes
- Bluetooth interface for IoT sensors
- Gateways for Silicon Laboratories MGM240P based IoT systems
- Home Assistant

contact@cthings.co

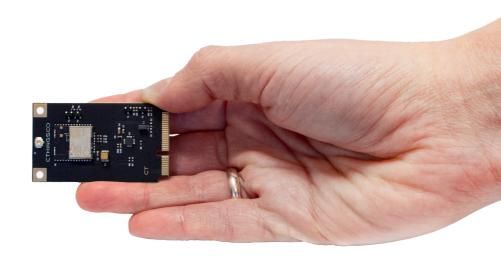


Zigbee Mesh	Plug-and-play support for Zigbee	Mini-PCle Pinout Compliance	Small and standardised form factor compliant with common hardware
Bluetooth® 5.3	2.4 GHz transceiver	Multiprotocol	Bluetooth Low Energy, Bluetooth Mesh, OpenThread, Zigbee, ANT
Certified Radio Equipment	Full CE Class-B & Radio Equipment Directive (RED) certification	In-system firmware upgrades	Supported loading firmware via Silabs Bootloader over serial
Performant CPU	32-bit ARM Cortex-M33 CPU	Out-of-the-box support	Out-of-the-box support for Simplicity SDK and Gecko SDK

External appearance







Start your digital transformation journey

Order now



Confidentiality



This document is based on information provided by CTHINGS.CO Sp. z o.o. (the "Company"). It is being communicated on behalf of the Company to you solely for information and for the exclusive use of the selected persons to whom it is addressed for the purpose of their considering whether to proceed with a further analysis of a potential transaction (the "Transaction") involving the Company. This document should not be used for any other purpose. This document is strictly confidential and cannot be disclosed, revealed, reproduced or redistributed, in whole or in part, by or to any other person without the prior written consent of the Company.

All rights reserved



No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, including brief quotations embodied in critical reviews and other non-commercial uses permitted by copyright law. The publisher makes no representations or warranties with respect to the accuracy or completeness of the contents of this document. The publisher does not make any commitment to update the information contained herein. The publisher's products are not intended, authorised, or warranted for use as components in applications intended to support or sustain life. The publisher's products are not designed for and will not be used in connection with any applications where the failure of such products would reasonably be expected to result in significant personal injury or death.

Disclaimer



The information herein is believed to be correct as of the date issued. The Company will not be responsible for damages of any nature resulting from the use or reliance upon the information contained herein. The Company makes no warranties, expressed or implied, of merchantability or fitness for a particular purpose or course of performance or usage of trade. Therefore, it is the user's responsibility to thoroughly test the product in their particular application to determine its performance, efficacy, and safety. Users should obtain the latest relevant information before placing orders.

Unless The Company has explicitly designated an individual product as meeting the requirement of a particular industry standard, The Company is not responsible for any failure to meet such industry standard requirements.

Unless explicitly stated herein this document, The Company has not performed any regulatory conformity test. It is the user's responsibility to assure that necessary regulatory conditions are met and approvals have been obtained when using the product. Regardless of whether the product has passed any conformity test, this document does not constitute any regulatory approval of the user's product or application using the product.

Nothing contained herein is to be considered as permission or a recommendation to infringe any patent or any other intellectual property right. No license, expressed or implied, to any intellectual property right is granted by The Company herein.

The Company reserves the right to at any time correct, change, amend, enhance, modify, and improve this document and/or products without notice. This document supersedes and replaces all information supplied prior to the publication hereof.