VersaNode 400-US

Sub-GHz Wireless Radio Module

The VersaNode 400 is the world's first standards-based IEEE 802.15.4g compliant radio module to receive certification in the US, Canada, Europe and Japan. The module utilizes the Freescale Kinetis platform in conjunction with a Freescale MC12311 transceiver to provide a solution that can be incorporated into a wide range of sensing and control devices that are part of the emerging Internet of Things.

VersaNode users can have their devices sending commands and receiving data over the Internet in a matter of days, using 6LoWpan/IPv6 connectivity and CoAP based web services to integrate quickly to existing functionality.

MAXIMUM RATINGS	
Supply Voltage	-0.3 to 3.8 Vdc
RF Output Level (Max)	+15 dBm maximum @ antenna port
Input RF Level (Max)	+6 dBm
Voltage on any digital I/O	-0.3 to (VDDINT + 0.3)
Operating Temp Range	-40 to 85 °C
Storage Temp Range	-55 to 115 °C
NORMAL OPERATING CONDITIONS	
Supply Voltage	3.3 V nominal
Voltage on analog pins	0 to Vcc V
Voltage supply noise	max 200 mVpp 50Hz – 15MHz
Storage and operating temperature	-40 to 85 °C
Operating relative humidity	10 to 90 %RH non condensing
Transmit current	140 mA @ 17 dBm typical
Receive current	50 mA typical
Hibernate current	less than 10 µA typical
ELECTRICAL / MECHANICAL	
Input High-level Voltage (all digital inputs)	70% Vcc to Vcc
Input Low Voltage (all digital inputs)	0 to 20% Vcc Vdc
Output High-level Voltage (Imax = 1 mA) (All digital outputs)	Vcc - 0.5 Vdc
Output Low Voltage (Imax = -1 mA) (All digital outputs)	0 to 10% Vcc Vdc
Input hysteresis (all digital inputs)	0.06 Vcc Vdc
Dimensions	1.5" x 1" x 7/16" (LxWxH)

Key Benefits

» IEEE 802.15.4g compliant
» Hardware cryptographic acceleration engine supports state of the art AES128 bit encryption
» CoRe/REST compliant web services
» Leverages proven standards: IPv6, RoLL/RPL, 6LoWPAN, 802.15.4e, 802.15.4g, CoAP, EXI
» Battery or line powered

RADIO	
Radio module	IEEE802.15.4g radio module
Frequency band	902-928 MHz
Number of channels	64 / 129 depending on data rate
Channel spacing	200/400 kHz
Frequency accuracy	± 15 PPM
Modulation	FSK
Data rate	50/150/200 kbps
Receiver sensitivity	-100 dBm @ 50 kbps -94 dBm @ 150 kbps -92 dBm @ 200 kbps
Range	1.2 mile line of sight
Output power range	-20 to +15 dBm
ANTENNA	
Impedance	50 Ω
Gain	+2.2 dBi
Pattern	Omni-directional
Maximum VSWR	2:1
Connector	MMCX connector, right angle on cable
CERTIFICATIONS	
EMC US	FCC-Part 15 section 247
EMC Canada	IC, must comply with FCC 15.247

VN400-US model is compliant with the EMC for the following countries/geographical regions:

- United States of America (US)
- Canada