

MG2470B

High Data Rate Support

V1.0

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Appendix A

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Revision History

Revision No.	Date	Description	Author(s)
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1 Introduction

MG2470 supports high data rates, 2 Mbps, for application beyond IEEE 802.15.4 compliances. In 2 Mbps mode, the data is encoded with code rate 1/2; thus the modulated signal with 2Mbps data rate occupies occupies an RF channel bandwidth of 4MHz.

The modulated output spectrum for 2 Mbps mode is shown in [Figure 1]. In 2 Mbps mode, the signal occupies twice the bandwidth, so channel spacing should be 10 MHz.

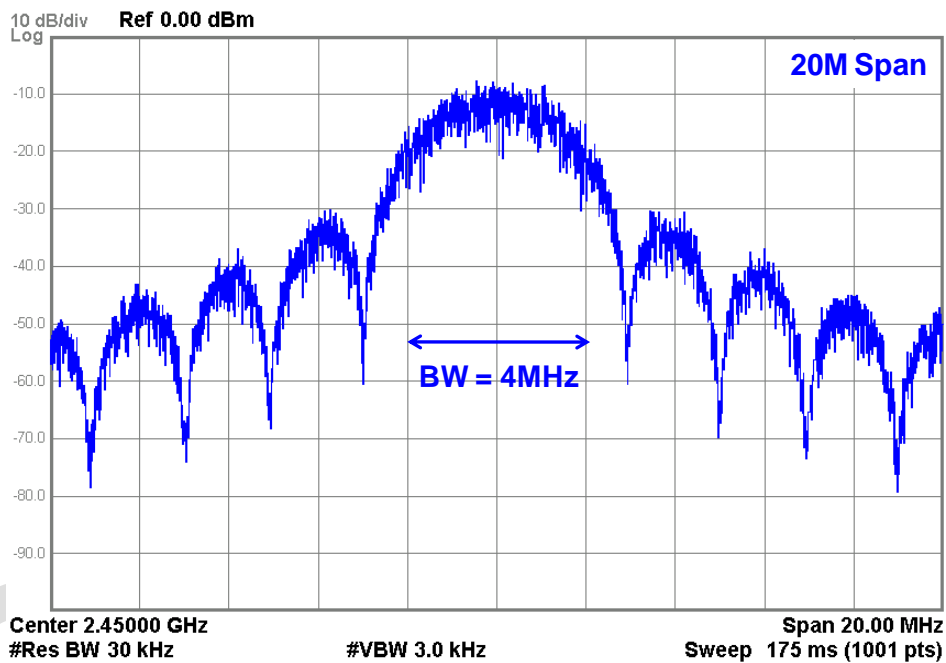


Figure 1 Modulated signal spectrum for 2Mbps mode.

2 ELECTRICAL CHARACTERISTICS

2.1 Current Consumption

Table 1 Current Consumption

Measured on 2-layer reference design with TOP=25°C, VDD=3.0V, and fc=2450MHz, unless otherwise noted.

Parameter(Condition)	MIN	TYP	MAX	UNIT	Note
MCU active. No radio and peripherals (UART1&RNG) active. @ MCU clock = 16MHz		5.2		mA	
RX mode. MCU active @ MCU clock = 16MHz		28.2		mA	
TX mode. MCU active @ MCU clock = 16MHz @ maximum transmit output power @ 0dBm		37 23		mA	

2.2 RF Receive Section

Table 2 RF Receive Section

Measured on 2-layer reference design with TOP=25°C, VDD=3.0V, and fc=2450MHz, unless otherwise noted.

Parameter(Condition)	MIN	TYP	MAX	UNIT
RF frequency range (channel center frequency)	2405		2480	MHz
Maximum input level (PER=1%) @ 2000kbps		2		dBm
Receiver sensitivity (PER≤1%, Packet length of 80-byte) @ 2000kbps		-88		dBm
Adjacent channel rejection (Sensitivity+3, adjacent modulated channel at ±10MHz, PER=1%, Packet length of 80-byte, 802.15.4 modulated interferer at 802.15.4 channels) +10MHz -10MHz		21 21		dB
Alternate channel rejection (Sensitivity+3, adjacent modulated channel at ±20MHz, PER=1%, Packet length of 80-byte, 802.15.4 modulated interferer at 802.15.4 channels) +20MHz -20MHz		48 46		dB
Others channel rejection (Sensitivity+3, adjacent modulated channel at ±30MHz, PER=1%, Packet length of 80-byte, 802.15.4 modulated interferer at 802.15.4 channels) ≥+30MHz ≥-30MHz		49 44		dB
Co-channel rejection (Sensitivity+3. Undesired IEEE 802.15.4 modulated signal at the same frequency. Signal level for PER=1%, Packet length of 80-byte, 802.15.4 modulated interferer at 802.15.4 channels)		-11		dB
Blocking/desensitization -250MHz -100MHz -50MHz +50MHz +100MHz +250MHz		-25 -36 -40 -35 -32 -27		dBm

2.3 RF Transmit Section

Table 3 RF Transmit Section

Measured on 2-layer reference design with TOP=25°C, VDD=3.0V, and fc=2450MHz, unless otherwise noted.

Parameter(Condition)	MIN	TYP	MAX	UNIT
RF frequency range(center frequency)	2405		2480	MHz
TX output power (using the recommended matching circuit)		9		dBm
Harmonics				
2nd harmonic		-45		dBm
3rd harmonic		-45		
Spurious emission (complies with EN 300-440, FCC and ARIB STD-T66)				
30Hz ~ 1GHz		-60		dBm
1GHz ~ 12.75GHz		-50		
5.15 ~ 5.3GHz		-50		



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RadioPulse is a Being Wireless solution provider offering wireless communication & network technologies and developing next generation wireless networking technologies.

The new wireless networking solutions envisioned by RadioPulse will enable user to enjoy wireless technologies with easy interface.

Founded in April of 2003, the company maintains it headquarters and R&D center in Seoul, Korea.

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