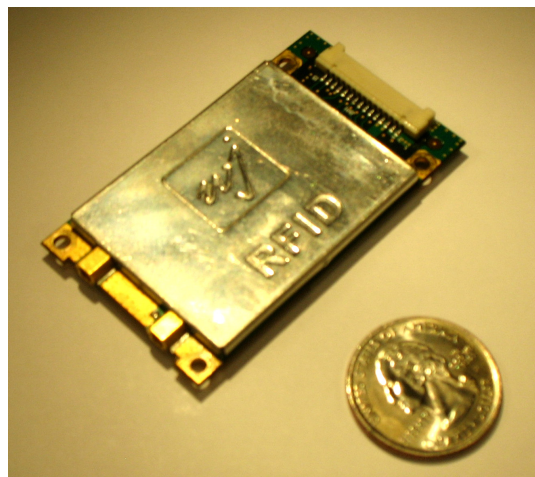


Key Features

- Multi-protocol support: ISO 18000-6C (Gen2) & ISO 18000-6B
- Dynamic RF output power: 10dBm to 24dBm range
- Two antenna ports for added flexibility
- Special high performance single tag access commands designed for printers
- WJC200 Gen2 reader chipset based design



Applications:

- Printers
- Item-level RFID
- Mobile & handheld devices

TriQuint Semiconductor's WJM1000 UHF RFID module is designed to allow OEMs, VARs and System Integrators easy RFID integration into any new or existing products. WJ's high performance single tag access commands make the WJM1000 ideal for any printer application. As well, the extremely low power consumption and tiny form factor provides a perfect fit for any mobile or handheld device.

By leveraging WJ's award winning WJC200 Gen2 chipset, the WJM1000 permits the industries first, and smallest, truly low cost UHF RFID module.

The WJM1000 reader module's simple but powerful command set allows for fast creation of custom applications via an open-source DLL and API.

Boasting an idle current a small fraction of competing modules, the WJM1000 can be set to transmit a dynamic output range of 10dBm to 24dBm, while having a maximum power dissipation of only 2.5W.

The module operates over the North American UHF frequency band (902-928MHz) and includes the RF, digital circuitry and embedded firmware required for ISO 18000-6C (UHF Gen2) and ISO 18000-6B international standards. 3.3V CMOS level serial communications and 4 GPIO lines are available on a 15-pin connector. Mounting holes provide fast and easy mechanical integration. TriQuint's free demo software offers quick evaluation of the module without software development.

Specifications

Operating Conditions: $V_{cc} = 5.0VDC$, $T_{amb} = 25^{\circ}C$, 50 Ω System

Symbol	Parameter	Min	Typ	Max	Units
f_{RFID}	RF Frequency – UHF Operation	902		928	MHz
f_{RATE}	Data Rate	40		40	KHz
f_{ch}	Channel Spacing		500		KHz
CH	Frequency Hopping Channels		50		Channels
V_{cc}	Supply Voltage @ 500mA, Connected to System	+4.50	+5.00	+5.50	V
$I_{Peak Op}$	Peak Operating Current*	470	495	550	mA
P_{Tx-Max}	Maximum Transmit Power		24		dBm
P_{RANGE}	Transmit Output Power Range		14		dB
	Step Size		1		dB
S_f	Frequency Stability			± 10	ppm
P_{tx-tol}	Transmit Power Tolerance				
	10 – 11dBm Output	-2.0		+2.0	dB
	12 – 13dBm Output	-1.5		+1.5	dB
	14 – 24dBm Output	-1.0		+1.0	dB

* Peak operating current for 250mW (24dBm) output power; average operating current draw is significantly less than CW peak current.

Absolute Maximum Rating*

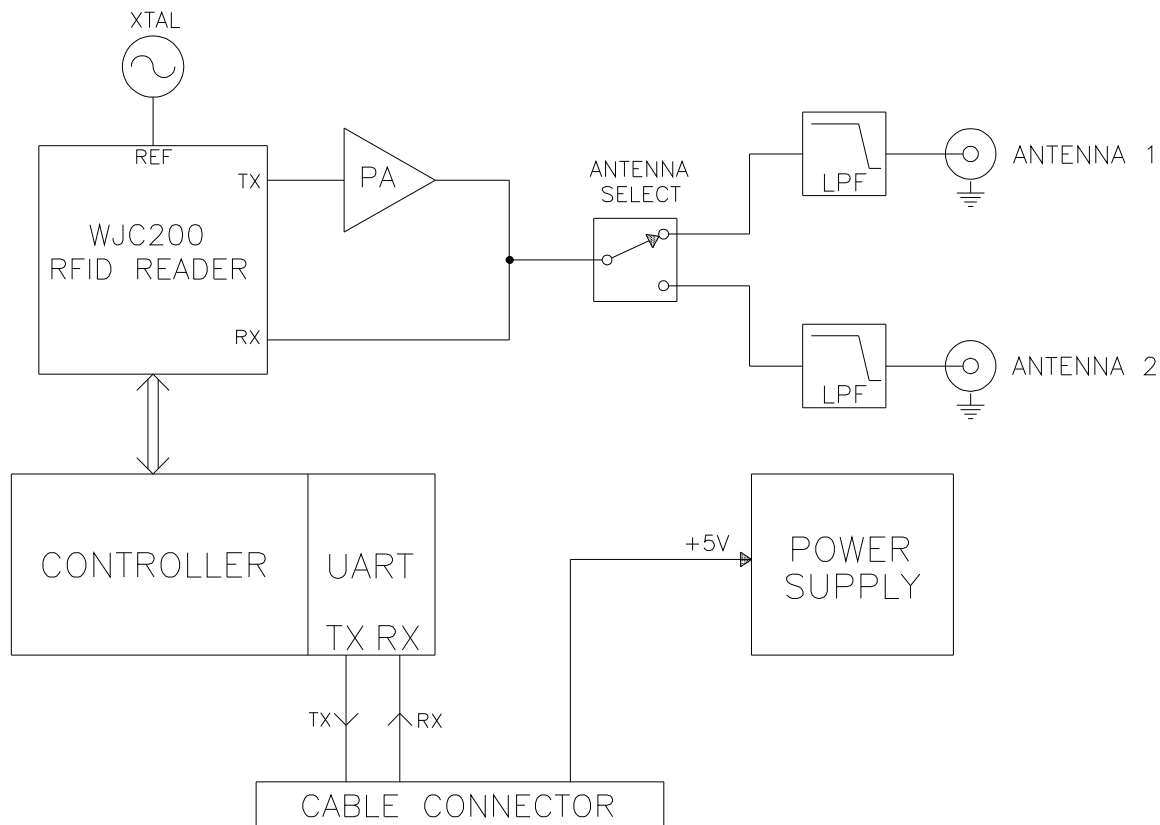
Parameter	Rating	Units
ESD Protection (per ISO 7816-1)	2	KV
Maximum Voltage	6	V
Operating Case Temperature	-20 to + 55	$^{\circ}C$
Storage Temperature	-40 to +65	$^{\circ}C$

*Operation of this device above any of these parameters may cause permanent damage.

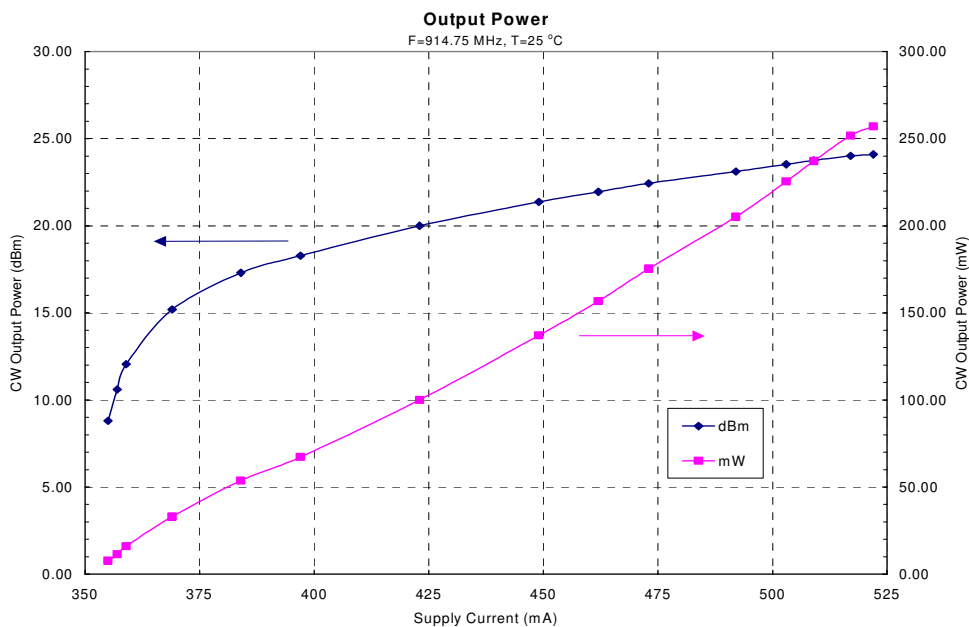
Protocol Support

Protocol	ID Read	ID Write	Data Read	Data Write	Password Write	Lock	Kill
ISO 18000-6B	X	X	X	X	X	X	
ISO 18000-6C (EPC Class1 Gen2)	X	X	X	X	X	X	X

WJM1000 System Block Diagram

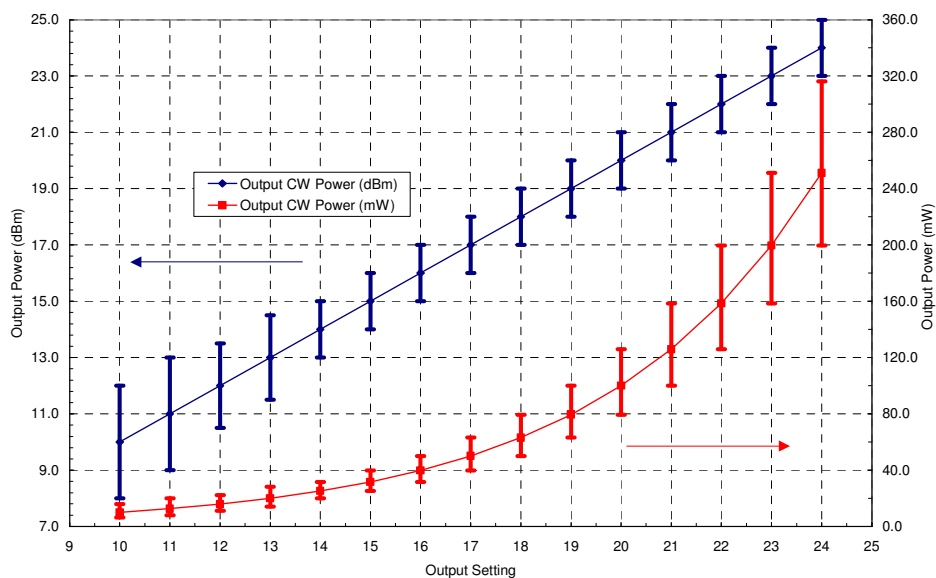


WJM1000 Performance



Output Power Vs Supply Current

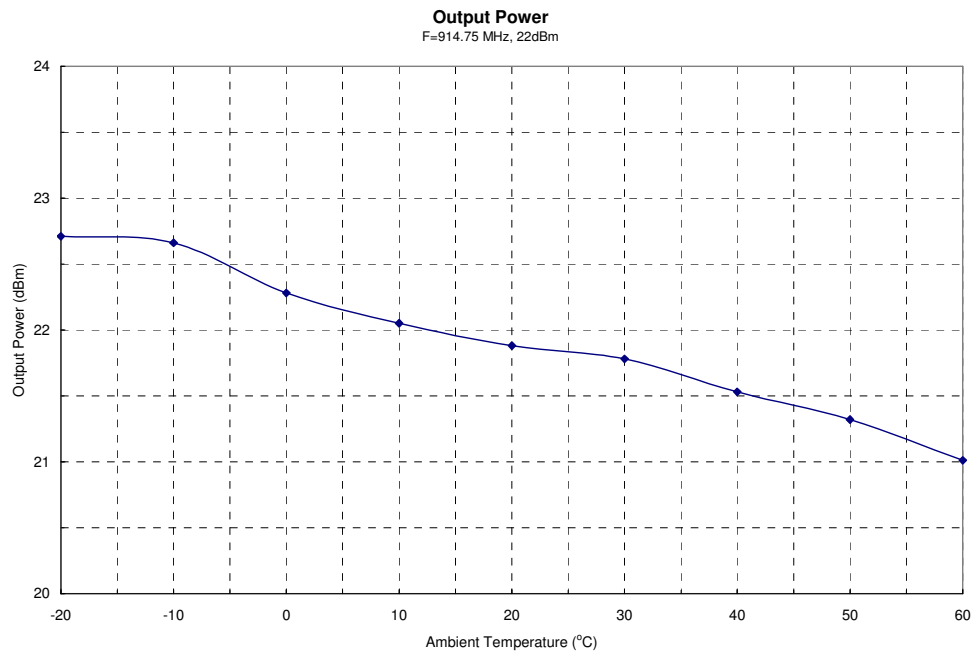
WJM1000 Output Power Specification Limit



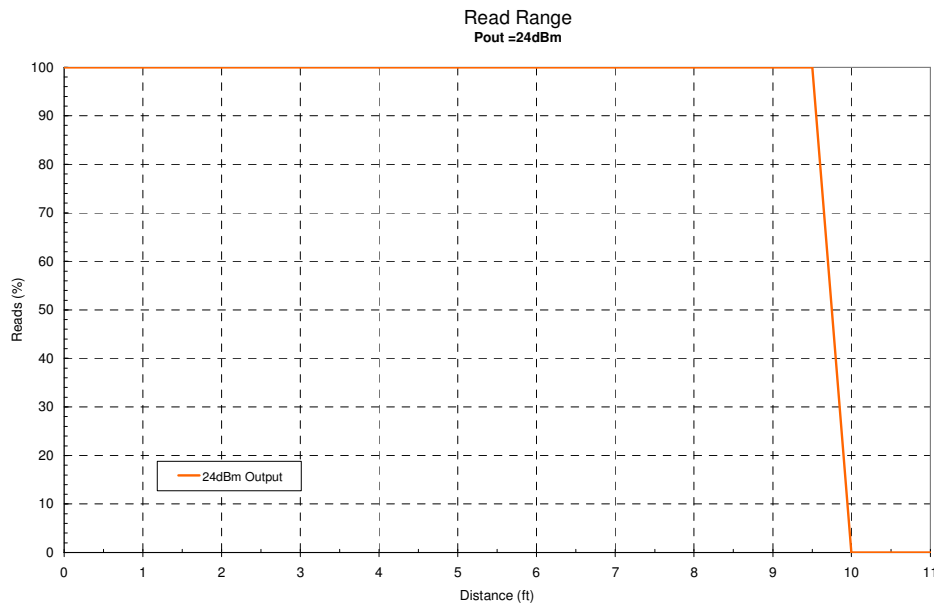
Output Power Tolerances

Next Generation RFID Reader Module

Based on the WJC200 Gen2 RFID reader chipset



Output Power Vs Temperature



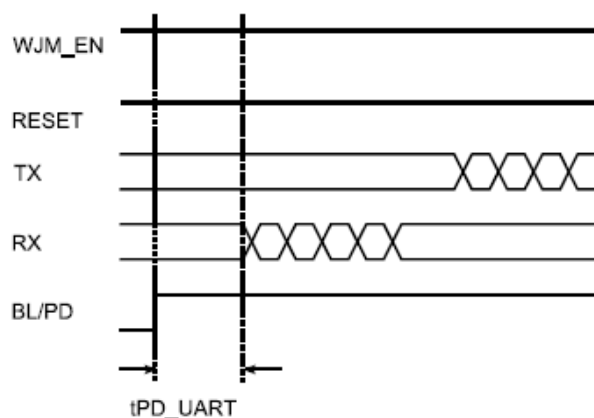
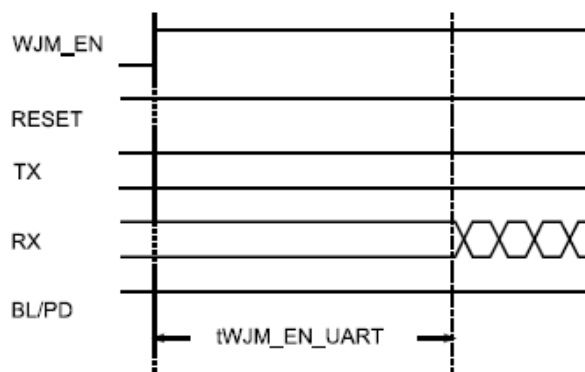
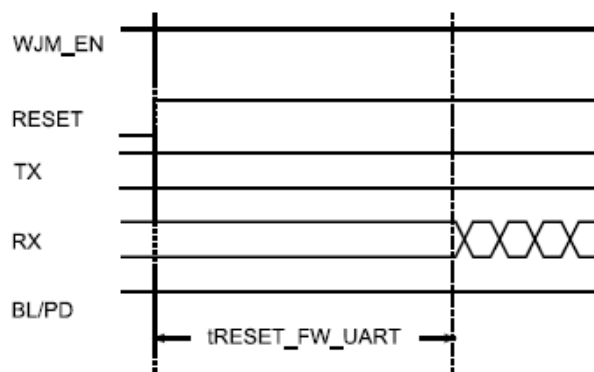
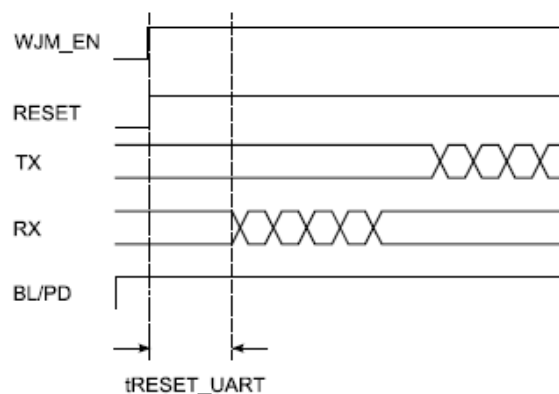
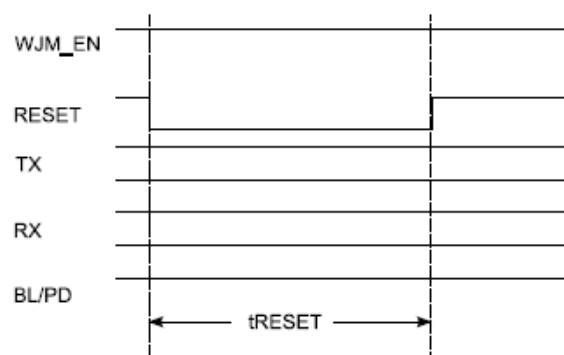
Read Range Performance

*Read Range performance subject to environmental conditions

Interface Connector Pin Out

Pin #	Name	Description
1, 2	+5V	Power Supply. 5V $\pm$ 0.5 V @ 500 mA
3,4	GND	Power Supply Ground Return
5	N/C	Not internally connected.
6	WJM_EN	Active High Power Enable. Grounding this pin shuts off entire module. Minimum logic high voltage is +2.5V. 5V tolerant. Low impedance driver or a pull up resistor less than 2K required.
7	TX	3.3V CMOS logic-level UART transmit pin
8	RX	5V tolerant CMOS logic-level UART receive pin
9	nRESET	5V tolerant Active Low Reset Pin. When held low, WJM draws current but will not respond to commands. If nBL/nPD is held low as nRESET is brought high, the WJM enters Bootloader mode. If nBL/nPD is held high as nRESET is brought high, the WJM application starts.
10	nBL/nPD	5V tolerant Active Low Bootloader/PowerDown pin. This pin serves two functions. 1) If this pin is low at the rising edge of nRESET (including power-on), the Bootloader is activated for writing a new Firmware application (FW). If it is high, FW starts. 2) Once FW starts, bringing this pin low enables sleep mode. The module will not respond to API commands in sleep mode. Keep it high for normal operation.
11	STATUS_LED	3.3V logic-level 3-state output: Logic high: OK Tri-State: Sleep Mode Logic low: Error
12 13 14 15	GPIO1 GPIO2 GPIO3 GPIO4	Firmware initializes these pins as general input/output pins

Interface Timing Diagrams



Next Generation RFID Reader Module

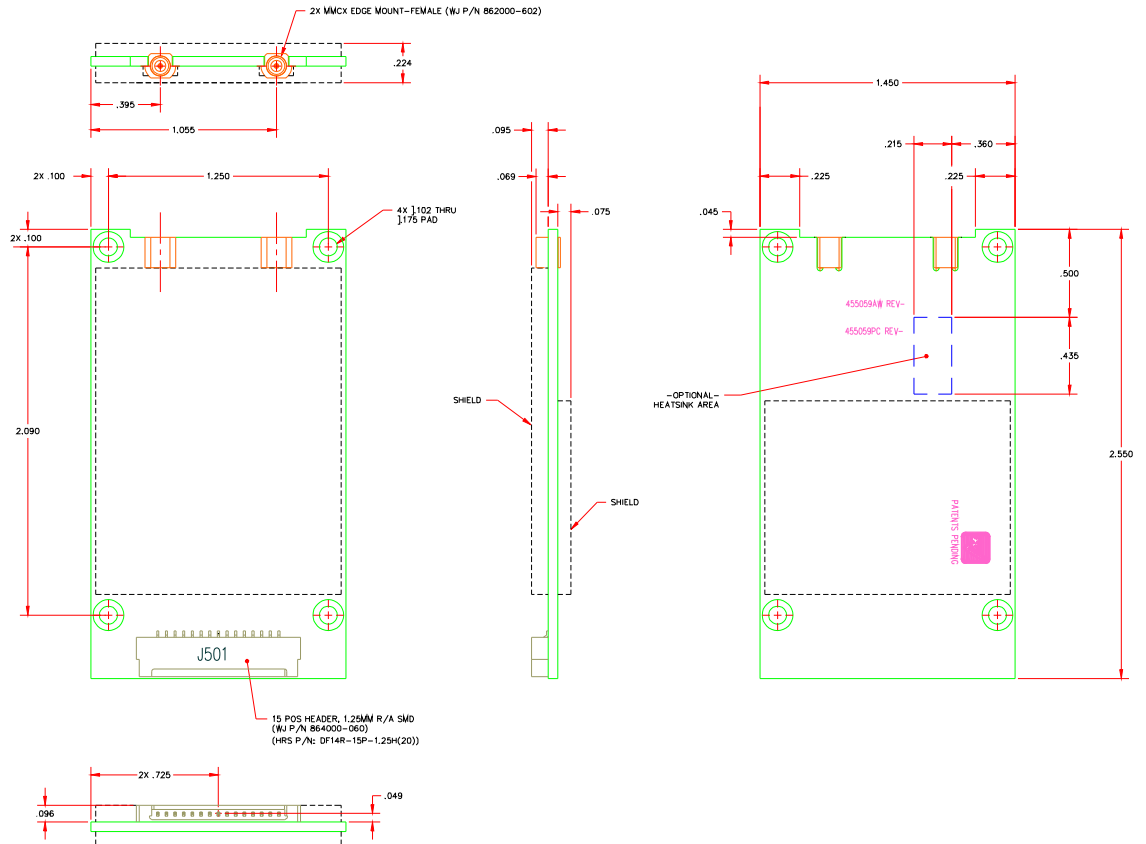
Based on the WJC200 Gen2 RFID reader chipset

NOTES:

1. UNIT WEIGHT .XXX OUNCES MAX.
2. DIMENSIONS ARE EXPRESSED IN INCHES.
3. TOLERANCE .XXX [.015
.XX [.02

CONNECTOR PINOUT

15 PIN	NAME
1	+5V
2	+5V
3	GND
4	GND
5	N/C
6	WJM-ENABLE
7	TX
8	Rx
9	RESET
10	BL/PD
11	STATUS_LED
12	GPIO1
13	GPIO2
14	GPIO3
15	GPIO4



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TriQuint:](#)

[WJM1000](#)