

WJR7000

Preliminary

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WJ communications

Key Features

- 1/2 Watt Gen 2 Dense Reader Mode
- Multi-protocol Support
- Fast 40/240 KHz Miller Sub-Carrier Data Rate
- Dynamic RF Output Power: 18 to 30dBm Range
- Two Antenna Ports: Near or Far-field capable
- World Wide Capability: Configurable to meet country specific RFID UHF requirements*
- Read Range up to 20ft**



WJ Communications' WJR7000 UHF RFID reader module is designed to enable RFID UHF Gen2 capability for handheld readers, printers and forklift readers. This allows original equipment manufacturers, value added resellers and system integrators to reach a broad spectrum of end customers. WJ's capability to configure WJR7000 modules for different country specific UHF frequency requirements, to provide 1/2 watt Gen2 dense reader mode and to implement a 40/240 KHz data rate will enable high performance solutions that can be deployed worldwide. The WJR7000 is backwards compatible with the MPR7000.

The 0.5-watt (+27dBm) WJR7000 reader module operates in the UHF frequency band (902-928 MHz) used by North America and some Asia-Pacific regions. The reader includes the RF, digital circuitry and embedded firmware required for ISO18000-6C (UHF Gen2) and Class 0/0+ standards. The API command set enables customers to control RF output power per command according to their application needs. WJ provides free demonstration software for quick evaluation, an open source DLL and API for simple integration and standard 3.3-5V CMOS serial communication for universal connectivity.

Applications

Low Power Mobile RFID Devices for item level tracking
RFID Enabled Handheld Readers
RFID Enabled Fork Lift Readers
RFID Portal Readers

* Please refer to table for list of countries supported

** Read range is dependent on environment, antenna gain and other factors



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Key Product Features

- ⇒ **Compliant to Global Standards**
 - Class 0/0+
 - ISO 18000-6C (UHF Gen2)
- ⇒ **Supports Multiple Frequencies (Countries)**

Worldwide Coverage

- ⇒ **1/2 Watt Dense Reader Mode (DRM)**
- ⇒ **40/240 KHz Data Rate**
- ⇒ **1 Watt Maximum Transmit Power (+30dBm)**
- ⇒ **Flexible Antenna Ports**
 - Single (Monostatic) Antenna Operation
 - Dual Antenna Ports
 - 50Ω MMCX Coaxial Connectors
 - Supports both Near and Far-Field

Superior Performance

- ⇒ **68-pin PCMCIA Type II PC Card form factor**
- ⇒ **Serial Interface 3.3V CMOS Levels**

Ease of Integration

Specifications

Symbol	Parameter	Min	Typ	Max	Units
f_{RFID}	RF Frequency—UHF Operation	902		928	MHz
f_{CH}	Channel Spacing		500		kHz
CH	Frequency Hopping Channels (See Hop Frequency Channels Table)		50		Channels
V_{CC}	Supply Voltage @ 1.3A, Connected to System*	4.9	5.0	5.5	V
$I_{\text{PEAK OP}}$	Peak Operating Current**		1.1	1.3	A
$P_{\text{TX-Max}}$	Maximum Transmit Power		+29.6	+30	dBm
P_{RANGE}	Power Control Range		12		dB
P_{STEP}	Step Size		1		dB
$T_{\text{OPERATING}}$	Operating Temperature Range	-20		+50	°C
S_f	Frequency Stability			±10	ppm

Operating Conditions: $V_{\text{CC}} = 5.00 \text{ VDC}$, $T_{\text{AMB}} = 25^\circ\text{C}$, 50 Ω System.

* Measured at connector for 1.3A load

** Peak operating current for 1 watt output power; 0.5 watt will draw less current

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Protocol Support

Protocol	ID Read	ID Write	Data Read	Data Write	PWD Write	Lock	DRE	Kill
EPC Class0/0+	X	X	X	X		X		X
EPC C1G2 (ISO-18000-6C)	X	X	X	X	X	X	X	X

Absolute Maximum Ratings*

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

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

Countries Supported**

Country	Frequency (MHz)
United States	902-928
Puerto Rico	902-928
Canada	902-928
Taiwan	917-922
Singapore	922-928
Hong Kong	923-925
Malaysia	920-925
Philippines	915-928
Thailand	902-928
Brazil	902-928
Argentina	902-928
Chile	902-928
Costa Rica	902-928
Mexico	902-928
Australia	920-926
South Africa	917-921
Uruguay	902-928

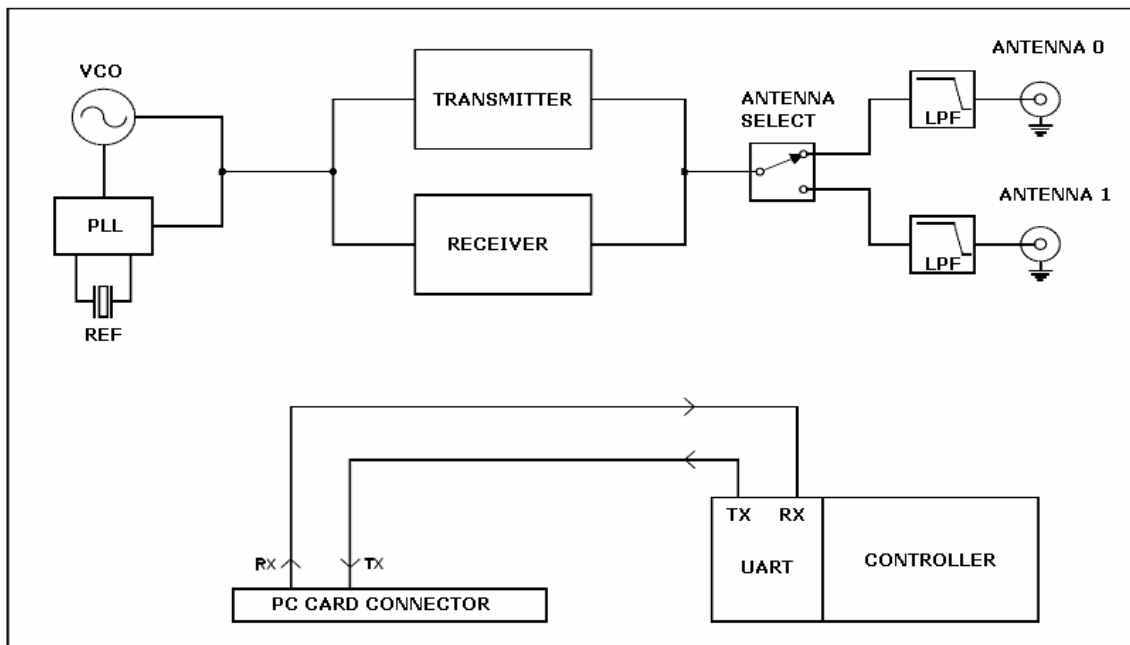
** Requires a hop table configuration



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WJR7000 Block Diagram



Mechanical Information

PC Card™ Mechanical Specifications

The MPR7000 is housed in a standard 68-pin PCMCIA Type II PC Card™. The form factor and the physical dimensions are listed in the diagram below.

