DIO Wireless Transceiver

MULTIFUNCTIONAL CONTACT CLOSURE SOLUTION

The Intuicom DIO is a high performance wireless contact closure radio for ON-OFF and Detection applications. Designed for short and long-range error-free communications, the DIO delivers a complete bi-directional wireless I/O capability for point-to-point, point-to-multipoint and multipoint-to-multipoint applications, providing an alternative to hardwire, fiber and other RF solutions.

EASE OF USE

Intuicom makes it easy to integrate wireless I/O (on-off) capabilities for a variety of applications. Incorporating Intuicom's "Single Unit Operation™", the DIO is capable of serving as any component (master, remote, repeater or remote/repeater) in a wireless system. Designed with a simple and easy setup, the DIO is an excellent plug-and-play type device for rapid integration. Intuicom's CommPro™ software, provides a complete toolset to assist in designing, configuring, monitoring and optimizing your wireless solutions. Going from the box to the field has never been easier.

FUNCTIONALITY AND FLEXIBILITY

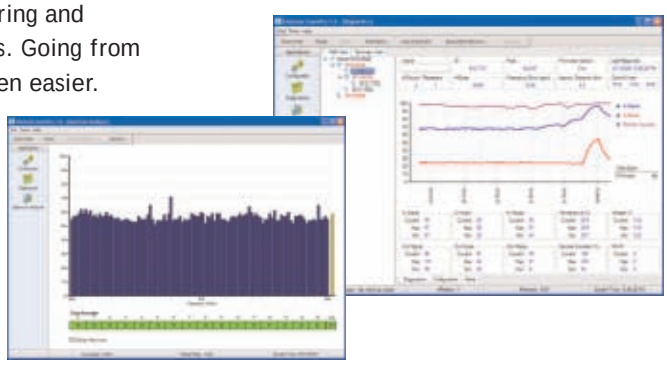
The Intuicom DIO provides bi-directional communication with 16 individual channels, eight (8) input and eight (8) output, for a virtually limitless number of I/O routing possibilities including positive confirmation of command execution.

"BEST-IN-CLASS" RF PERFORMANCE

Employing Intuicom's robust and secure frequency hopping spread spectrum technology, the Intuicom DIO is inherently resistant to interference from other RF equipment including other spread spectrum radios. Empowered with an ultra-sensitive, highly-selective RF transceiver, the Intuicom DIO provides real-time, robust communication links with 32-bit CRC with error correction. The Intuicom DIO is capable of delivering the maximum output power allowable by the FCC for unlicensed operation—the benefit of which is realized in exceptional performance, with up to 60 miles range (LOS).

With proven performance in dense RF environments, Intuicom's Wireless networks power through the congestion to provide reliable data transport where other technologies fall short.

To learn more about enabling wireless networking for your applications, please contact us at: info@intuicom.com or call (303) 449-4330



DIO Wireless Transceiver comes bundled with Intuicom's CommPro™ Sofware for easy use and programming.

KEY FEATURES

- "Best-in-Class" RF performance
- Robust on-off control and monitoring of multiple events
- Supports industry-standard Modbus
- Eight (8) dry contact/low voltage input channels
- Eight (8) open collector output channels
- Software mapping of input and output channels
- Confirmation ability
- Single Unit Operation™, Any one unit may serve as Master, Remote, Repeater or Remote/Repeater
- 900 MHz or 2.4 GHz license free operation
- Point-to-point, point-to-multipoint and multipoint-to-multipoint operation
- 2-year warranty
- Made in USA

APPLICATIONS

- Signal Pre-emption for Rail Road Crossing
- Railroad switch automation
- Warning Sign Controls
- School Zone Flashers
- Fire Hall Pre-emption
- Fog Warning Systems
- Advanced Warning/Work Zone Flashers
- Loop/Video/Radar Detection
- Ramp Metering
- Counting Stations

Intuicom® Wireless Solutions

DIO Wireless Transceiver

MULTIFUNCTIONAL CONTACT CLOSURE SOLUTION

GENERAL SPECIFICATIONS

Enclosure	Ruggedized extruded aluminum		
Size	H: 46 mm (1.81") x W: 157 mm (6.18") x L: 111 mm (4.37")		
Weight	603.8 g (21.3 lbs.)		
Temperature Operating Range	-40º C to +75º C		
Connectors/Signals			
External Antenna	N Type Female, Professional installation only		
Setup/Diagnostic	RJ12, (TXD, RXD, CTS, RTS, GND), DCE		
Power	Locking Receptacle (MOLEX® Mini-Fit Jr.)		
Input Voltage	900 MHz: 6-30 VDC 2.4 GHz: 9.5-30 VDC		
Power Consumption (typical)			
Operating Mode	900 MHz at 24 VDC (mA)	2.4 GHz at 24 VDC (mA)	
Base	75	80	
Remote	55	70	
Remote/Repeater	83	98	
Operating Modes			
System Configurations	Point-to-Point (bi-directional), Point-to-Multipoint (bi-directional), Multipoint-to-Point (bi-directional)		
Unit Operational Modes	Base, Repeater, Remote, Remote/Repeater		

WIRELESS TRANSCEIVER

SPECIFICATIONS	900 MHZ	2.4 GHZ
Frequency Range	902–928 MHz	2.4–2.4835 GHz
Transmitter		
Output Power	1000 mW	500 mW
Range, Line of Sight	60 Miles	20 Miles
Modulations	Spread Spectrum, GFSK	Spread Spectrum, GFSK
Occupied Bandwidth	230 KHz	230 KHz
Spreading Method	Frequency Hopping	Frequency Hopping
Receiver		
Sensitivity	-108 dBm at 10^{-6} BER; -110 dBm at 10^{-4} BER	-108 dBm at 10^{-6} BER; -110 dBm at 10^{-4} BER
Selectivity	20 dB at fc ± 115 KHz; 60 dB at fc ± 145 KHz	40 dB at fc ± 115 KHz; 60 dB at fc ± 145 KHz
System Gain	140 dB	137 dB
Data Transmission		
Error Detection	32 Bit CRC, retransmit on error	32 Bit CRC, retransmit on error
Data Encryption	Substitution, dynamic key	Substitution, dynamic key

I/O SPECIFCATIONS and CAPABILITIES

I/O Interface Specifications			
Inputs	8 digital, 3-40 VDC, ground activated		
Outputs	8 digital, 550 mA Max Load current per output (mosfet open drain), 2 Amps total		
I/O Connector Type	Quick release terminal block		
Indicators	Power, Input, Output, Link		
Supported Architectures/Protocols	DIO to DIO / DIO to Multiple DIO		
	Modbus: PC Interface to Multiple DIO		
User-defined output control	Time based		
I/O Timing Specifications (bi-directional)	**Low Latency Mode**	**Normal Mode**	**Long Distance Mode**
End-to-End Change Latency (typical)	bi-directional < 12 ms	bi-directional < 14 ms	bi-directional < 15 ms
Max. Change Frequency (Min. I/O Change Time)	25 Hz (20 ms)	20 Hz (25 ms)	10 Hz (50 ms)
Failsafe Time	100 ms – 10 s, user selectable	100 ms – 10 s, user selec	100 ms – 10 s, user select

Note: Specifications subject to change without notice.

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Intuicom® Wireless Solutions