



# Ocean State Signal Co.

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## SPECIFICATION SHEET

TITLE: DIO Wireless Transceiver  
Multifunctional Contact Closure Solution

PART NO.:  
DIO



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 hardware, 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.

### GENERAL SPECIFICATIONS

<b>Enclosure</b>	Ruggedized extruded aluminum	
<b>Size</b>	H: 46 mm (1.81") x W: 157 mm (6.18") x L: 111 mm (4.37")	
<b>Weight</b>	603 g (2.13 lbs.)	
<b>Temperature Operating Range</b>	-40° C to +75° C	
<b>Connectors/Signals</b>		
<b>External Antenna</b>	N Type Female, Professional Installation only	
<b>Setup/Diagnostic Power</b>	RJ12 (TXD, RXD, CTS, RTS, GND), DCE Locking Receptacle (MOLEX® Mini-Fit Jr.)	
<b>Input Voltage</b>	6-30 VDC (900 MHz), 9.5-30 VDC (2.4 GHz)	
<b>Power Consumption</b> (typical)		
<b>Operating Mode</b>	900 MHz at 24 VDC (mA)	2.4 GHz at 24 VDC (mA)
<b>Base</b>	75	80
<b>Remote</b>	55	70
<b>Remote/Repeater</b>	83	98
<b>Operating Modes</b>		
<b>System Configurations</b>	Point-to-Point (bi-directional), Point-to-Multipoint (bi-directional), Multipoint-to-Point (bi-directional)	
<b>Unit Operational Modes</b>	Base, Repeater, Remote, Remote/Repeater	

### WIRELESS TRANSCIVER SPECIFICATIONS

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

<b>I/O Interface Specifications</b>			
<b>Inputs</b>	8 digital, 3-40 VDC, ground activated		
<b>Outputs</b>	8 digital, 550 mA Max Load current per output (mosfet open drain), 2 Amps total		
<b>I/O Connector Type</b>	Quick release terminal block		
<b>Indicators</b>			
<b>Power</b>	Yes		
<b>Input</b>	Yes		
<b>Output</b>	Yes		
<b>Link</b>	Yes		
<b>I/O Timing Specifications</b>	<b>Low Latency Mode</b>	<b>Normal Mode</b>	<b>Long Distance Mode</b>
<b>End-to-End Change Latency</b>	bi-directional < 12 ms	bi-directional < 14 ms	bi-directional < 15 ms
<b>Mas. Change Frequency (Min. I/O Change Time)</b>	25 Hz (20 ms)	20 Hz (25 ms)	10 Hz (50 ms)
<b>Fall Safe</b>	100 ms - 10 s, user select	100 ms - 10 s, user select	100 ms - 10 s, user select

### KEY FEATURES

- "Best-in-Class" RG performance
- Robust on-off control and monitoring of multiple events
- Long range, error free, low latency performance
- 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 Rail Road Crossing
- Work Zone Flashers
- Warning Sign Controls
- School Zone Flashers
- Fire Hall Pre-emption
- Fog Warning Systems
- Advanced Warning Flashers
- Loop/Video/Radar Detection
- Ramp Metering

For more information, visit our website at [www.oceanstatesignal.com](http://www.oceanstatesignal.com)