

*NOW Usable World Wide!*

You Can Send  
**DMX512 WithOut Wires**  
Using Spread Spectrum Radio Techniques

**DMX WithOut Wires™** is designed for those special situations where a DMX cable isn't practical. The system combines Goddard Design's proprietary DMX data compression and error checking software with the high reliability and noise immunity of spread spectrum wireless techniques.

Our transcoder converts a DMX512 signal to a compressed error checking format adapted for wireless transmission. It is then sent by spread spectrum radios. A second transcoder reconstructs the DMX512 protocol. Multiple receiving radios and decoding transcoders may be used.



Spread spectrum techniques were developed for defense applications needing wireless systems that were nearly immune to jamming. "Dead spots," static interference, and cross channel interference commonly seen in other radio types are seldom a problem for spread spectrum radios. Spread spectrum radio does not transmit on a single frequency but spreads the signal across literally hundreds of frequencies. Interference on a single frequency is rejected. Digital techniques are used so that even if two different spread spectrum transmitters operate on the same channel a receiver will see only the messages addressed to it. Robust error checking routines assure that all DMX data passed to output are 100% correct.

This system is not for every user. If you can get cable there, do so. But there are places where it has been impossible to get DMX512 **before now**. So if you need a reliable DMX link to a barge in the center of a river - here's the answer.

The update rate of a compressed system is data dependent. Rates of 25 to 40 updates a second are common. The worst case update rate is 12 Hz. The current system supports 128 of 512 possible DMX channels. Goddard Design offers radios operating in two different frequency bands. These are 900Mhz and 2.4Ghz.

### **900 Mhz Radios**

The 900Mhz band radios are for use only in North America. With the standard antennae their range is about 1000 feet line of sight. With special antennae ranges of more than 3000 feet are possible. They are less expensive than the 2.4Ghz radios. Some wireless telephones also use the 900 MHz band.

## 2.4 Ghz Radios

The 2.4Ghz band radios are approvable for world wide operation. Our radios already are fully approved for operation in the **US** and the **EU**. With the standard antennae they will also provide a range of about 1000 feet (305 meters) line of sight. In countries where special antennae are permitted greater ranges are possible. This band is set aside for data operation. Future systems carrying more than 128 channels will use 2.4 Ghz radios. Note that operation of microwave ovens in close proximity to a **WOW** system can decrease data rates in this band.

### System layout:

A **DMX WithOut Wires™** system consists of transcoders and wireless radios (modems). Since our transcoder functions both as an encoder and a decoder and our radios are all bidirectional only two different parts must be stocked. The transcoder provides the hardware and software interface between DMX512 and the radios. Setting up a system generally entails no more than connecting the transcoders to the DMX cables and setting one transcoder as the encoder with all others as decoders. All settings are stored in nonvolatile RAM. Previously configured systems may be started by simply applying the AC mains power. For maximum system reliability all DMX512 inputs and outputs are optically isolated and ESD resistant.

The basic Goddard Design **DMX WithOut Wires™** technology is available now. The standard unit is a simple cable replacement system. The basic design was done in a way to allow for growth. If your job requires advanced features let us know; it is possible that we can help.

Professional Net Pricing - Quantity pricing available					
<b>Transcoder</b>	\$2000.00	<b>900Mhz Radio</b>	\$750.00	<b>2.4Ghz Radio</b>	\$900.00

### Into The Future --

Our transcoder technology can be adapted to telephone modems. This would allow sending DMX512 down a normal telephone line, using standard 28k baud modems. So if a phone company got there first maybe you don't have to string that cable between those two skyscrapers, or across the river!

Our standard units run in a broadcast mode, but our protocol allows up to 62 addressable decoders. Addressed decoders could be switched on and off remotely and could report their status to the encoder. Decoding transcoders could be fitted with an enhanced version of Goddard Design's ShowSaver™ backup software so that a decoder can operate as a mobile self contained lighting control system able to lock onto the main system, on a command sent from the encoding transcoder.

DMX WithOut Wires is a trademark of Goddard Design Co.

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**GODDARD DESIGN CO.**  
51 NASSAU AVE. BROOKLYN NY 11227 18 599-0170 - 718 599-0172 FAX  
sales@goddarddesign.com - <http://www.goddarddesign.com>