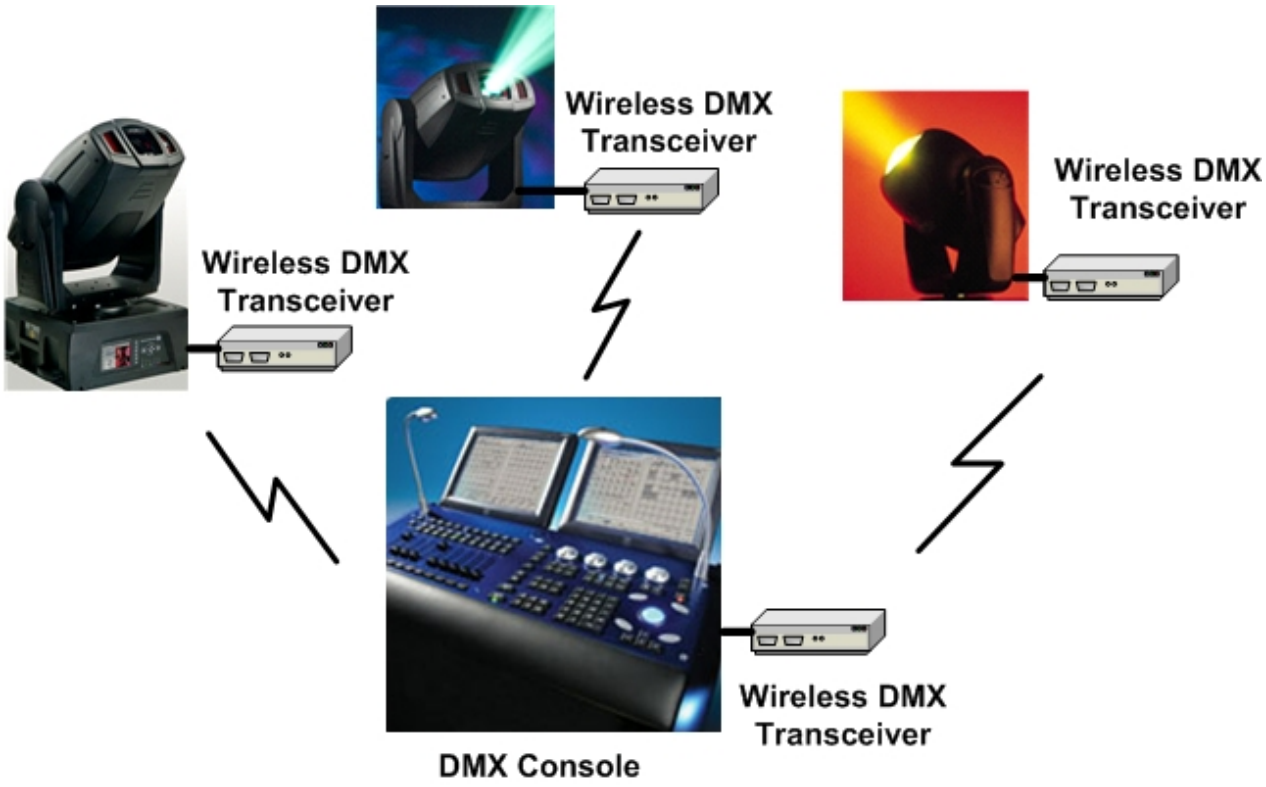


Figure 1: Wireless DMX Transceiver Network

I. Introduction

Wireless DMX Transceiver is proprietary system to provide the wireless network communication (peer-to-peer or peer-to-many) for DMX512 devices and systems. The 2.4GHz broadcasting function allows the DMX console to send the DMX512 commands to the DMX512 device simultaneously. The Wireless DMX Transceiver can be set to be transmitter or receiver. The data length and the sampling frequency can be adjusted. The communication frequency for RF transmission can also be adjusted in order to prevent the interference problem. It is a wireless, user friendly, plug and play system for all DMX applications in order to reduce the installation cost and effort.

II. Description

Product Features:

1. DMX-512 communication for DMX console and Moving Head
2. One-to-Many wireless communication between DMX console Transceiver and Moving Head Transceivers
3. Wireless DMX Transceiver is interference-free from other wireless devices in the 2.45 GHz band such as W-LAN and Bluetooth
4. Wireless DMX Transceiver uses Direct Sequence Spread Spectrum and there are 16 frequency channels for wireless DMX transceiver to set the transmission frequency and receiving frequency.

5. The communication distance between DMX Console Transceiver and Moving Head Transceiver is around 20m to 30m line-of-sight.
6. One DMX Transmitter (TX) supports up to 512 DMX channels (one universe) in the same 2.4GHz frequency channel. Up to 16 DMX universes (8192 DMX channels) can be controlled at the same time when all the 2.4GHz frequency channels (16 frequency channels) are occupied.
7. Four data lengths can be selected (from 128bytes, 256bytes, 384bytes and 512bytes) which allow different sampling frequencies (from 13Hz, 9Hz, 6Hz and 5Hz)

Setting of TX and RX:

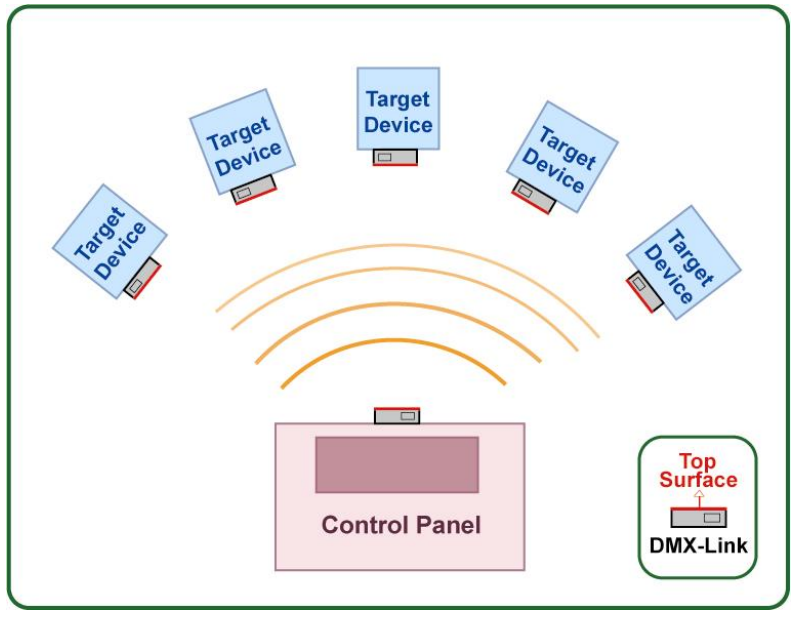


Figure 2: Wireless DMX Transceiver for DMX Console and Target Devices

The Wireless DMX Transceiver can be set to be transmitter (TX) for DMX console or receiver (RX) for the DMX devices such as moving head, spot light and fogger machine etc. Users can use magic tape to set the DMX Transceiver on devices. In order to maximize the transmitting power; the top surface of TX must face the top surface of RX. (As shown in Figure 2)

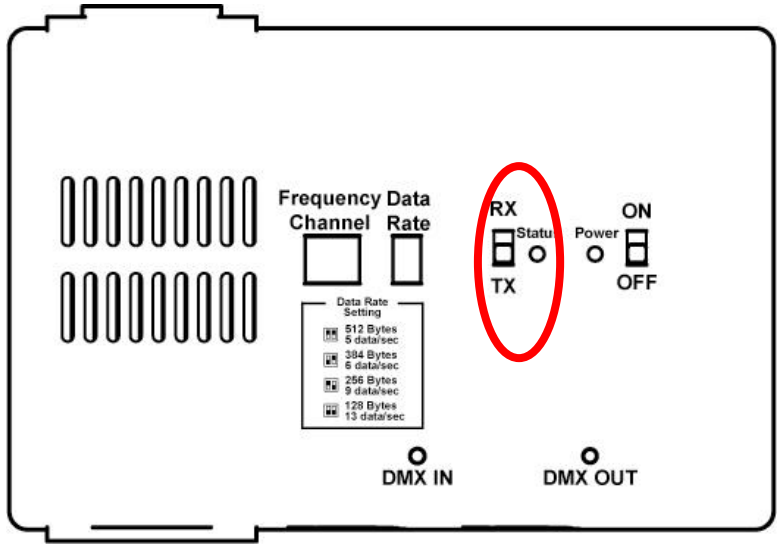


Figure 3: Top view of Wireless DMX Transceiver – Selection of transmitter and receiver function

Setting of Frequency:

The Wireless DMX Transceiver allows you to select up to 16 transmission frequencies in order to prevent the interference problem. The Dip switch setting is in binary digit. The most LEFT hand side is LSB (least significant bit) and the most RIGHT hand side is MSB (most significant bit). Put the switch up to set the digit to 1 and down to set the digital to 0

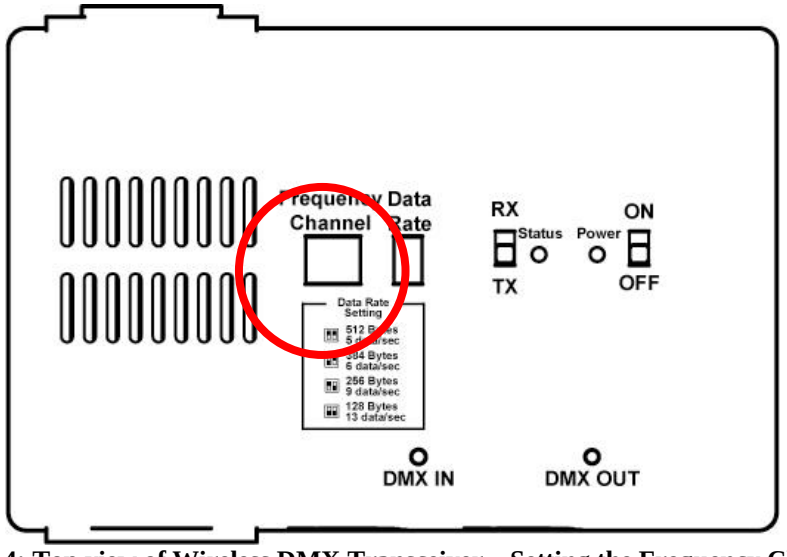
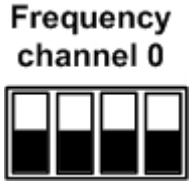
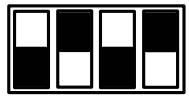


Figure 4: Top view of Wireless DMX Transceiver – Setting the Frequency Channel

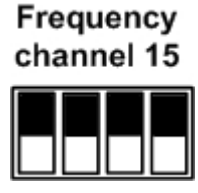
Here are the examples on how to set the frequency channels:



The value is '0000' = channel 0



The value is '1010' = channel 10



The value is '1111' = channel 15

Note that the frequencies for the TX and RX must be the same!

Setting of Data length / Sampling rate:

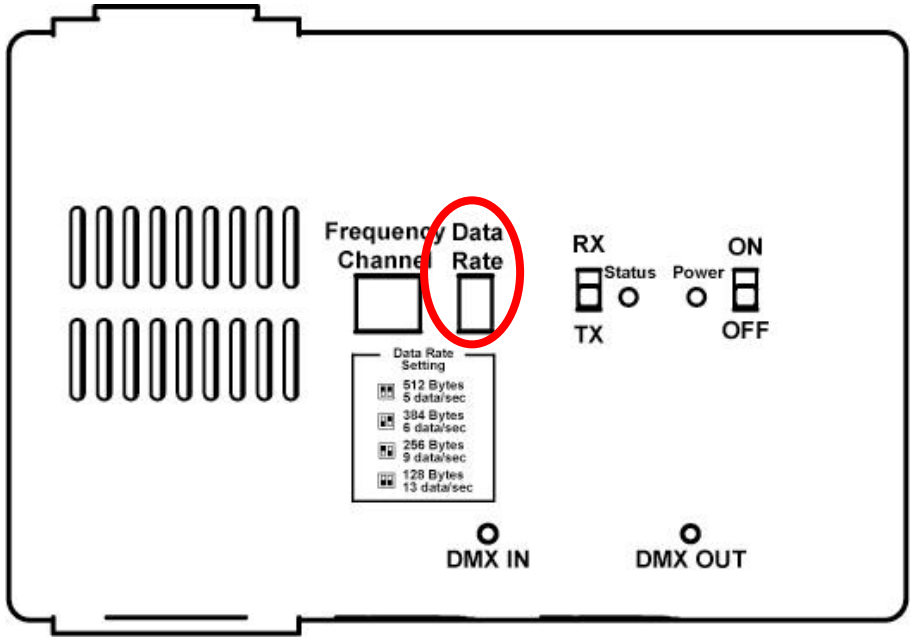


Figure 5: Top view of Wireless DMX Transceiver – Selection of Data Rate

The Wireless DMX Transceiver provides four different data rates (5Hz, 6Hz, 9Hz and 13Hz) for different data length requirement. More data will offer less data rate. The setting is similar to the frequency setting in binary. The LEFT hand side is LSB (least significant bit) and the RIGHT hand side is MSB (most significant bit). Put the switch up to set the digit to 1 and down to set the digital to 0. Here are the examples for the setting for the data rates:

128 Bytes
13 data/sec

256 Bytes
9 data/sec

384 Bytes
6 data/sec

512 Bytes
5 data/sec

The value is '00'
=> lowest data rate
(13 data/sec)
=> highest data length
(128 Bytes/data)

The value is '01'
=> higher data rate
(9 data/sec)
=> lower data length
(256 Bytes/data)

The value is '10'
=> higher data rate
(6 data/sec)
=> lower data length
(384 Bytes/data)

The value is '11'
=> highest data rate
(5 data/sec)
=> lowest data length
(512 Bytes/data)

Note that:

1. If many DMX devices are used in the DMX network, such as 50 moving heads are controlled by 1 DMX console and each DMX moving head needs 10 bytes. Thus, 500 bytes data is needed for the transmission. In this case, the 5 data/sec data rate can be selected.
2. If not many DMX devices are used in the DMX network, such as 30 fogger machines are controlled by 1 DMX console and each DMX fogger machine needs 1 bytes. Thus, 30 bytes data is needed for the transmission. In this case, the 13 data/sec data rate can be selected.
3. If more DMX devices are used in the DMX network, such as 20 moving heads and 10 fogger machines are controlled by 1 DMX console and each DMX moving head needs 10 bytes and each DMX fogger machine needs 1 byte. Thus, 210 bytes data is needed for the transmission. In this case, the 9 data/sec data rate can be selected.
4. The data rate will affect the response time of the machine. However, the 2.4GHz broadcasting function of the Wireless DMX Transceiver allows the DMX console to send the DMX512

commands to the DMX512 device simultaneously. No inconsistent between the receivers and DMX devices.

Setup of the system:

1. Install the device on a plane surface.
    - Plug the power unit into the socket.

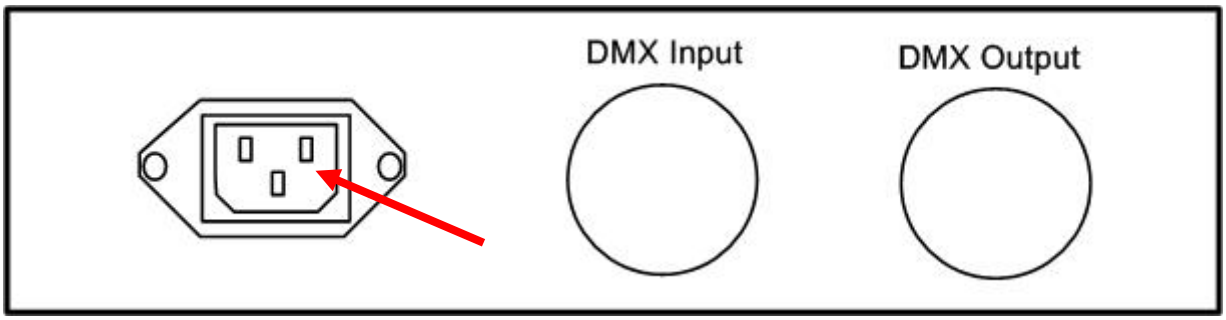


Figure 6: Side view of Wireless DMX Transceiver – Connection to power

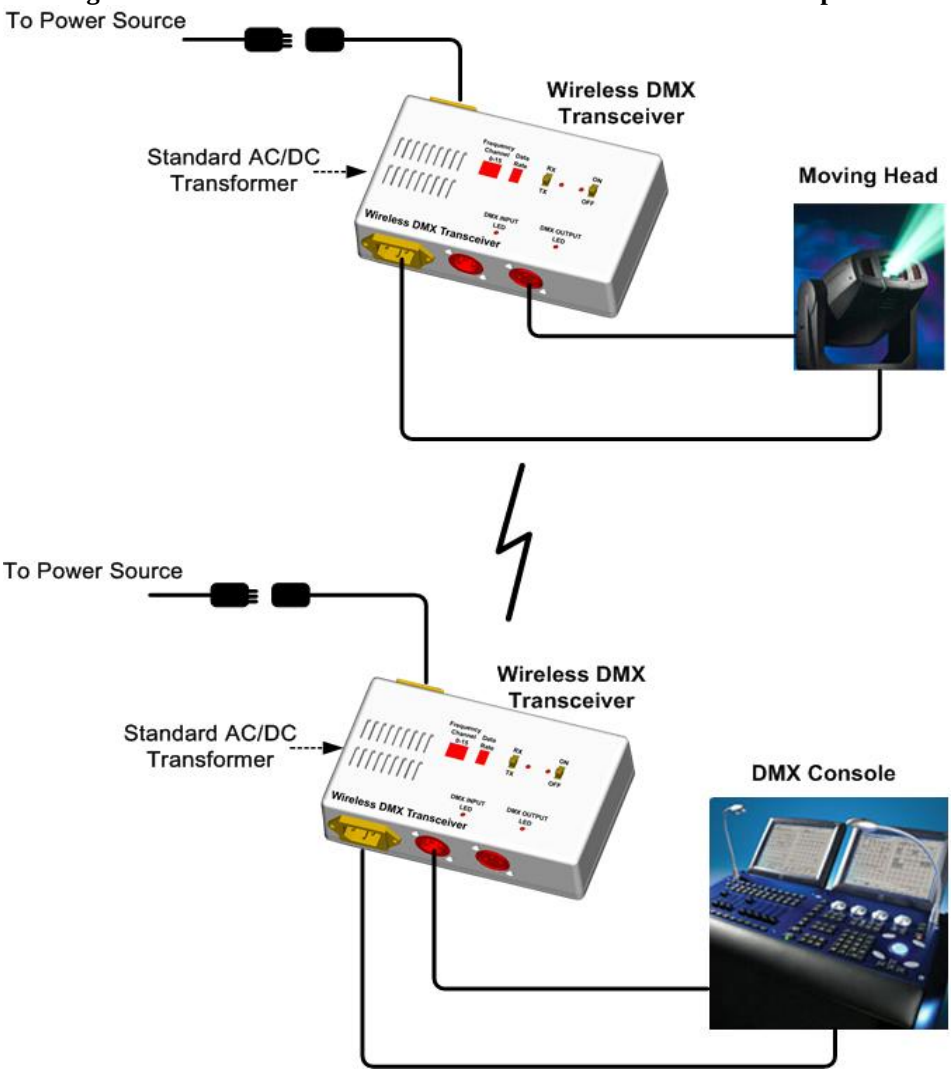


Figure 7: Connection of the Wireless DMX Transceiver

- The standard AC/DC transformer is included and allows the power cord to connect the system to the AC power source. The power source will supply the power to the moving head and the AC/DC transformer which drive the DC power to the wireless DMX Transceiver.

- Set the TX or RX function for the Wireless DMX Transceiver and the Frequency channel and the Data Rate.

    i. Set TX when it is connected to DMX Console

    ii. Set RX when it is connected to DMX devices such as Moving heads, fogger machines or spot lights etc.

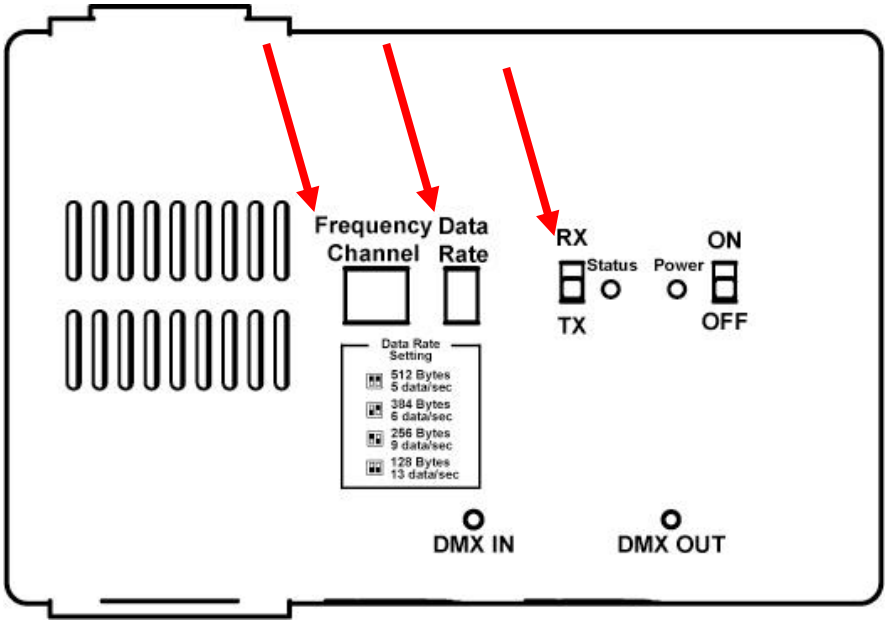


Figure 8: Top view of Wireless DMX Transceiver – Setting Sectors

- Connect DMX cable to DMX Input / DMX Output.

    i. Connect DMX Input (The TX has been selected and the DMX IN LED is ON) when it is connected to DMX Console

    ii. Connect DMX Output (The RX has been selected and the DMX OUT LED is ON) when it is connected to DMX devices such as Moving heads, fogger machines or spot lights etc.

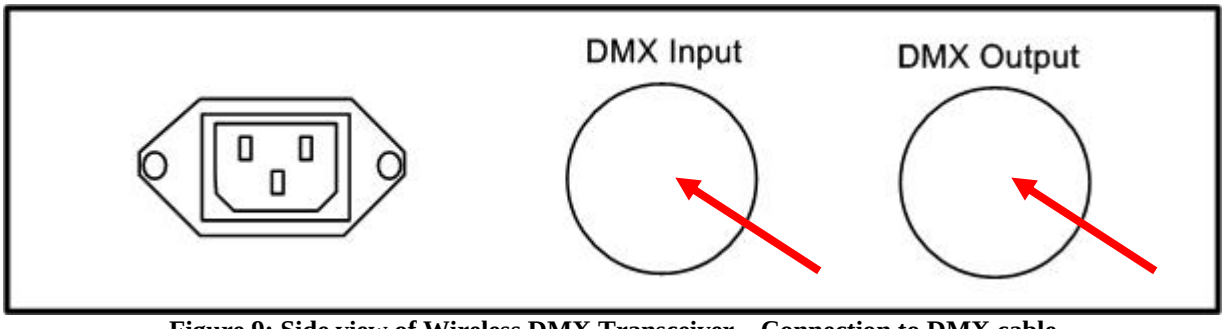
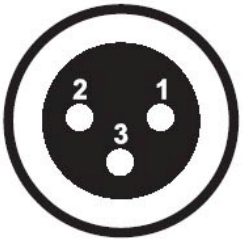


Figure 9: Side view of Wireless DMX Transceiver – Connection to DMX cable

- DMX connector for input and output:

DMX-output

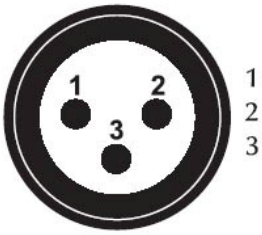
XLR mounting-socket:



1: Ground
2: Signal (+)
3: Signal (–)

DMX-input

XLR mounting-plug:



1: Ground
2: Signal (+)
3: Signal (–)

- With the POWER-switch, you can switch the device on and off. The Power LED will be ON. The Status LED will be flashed when the RF signal is receiving or transmitting.

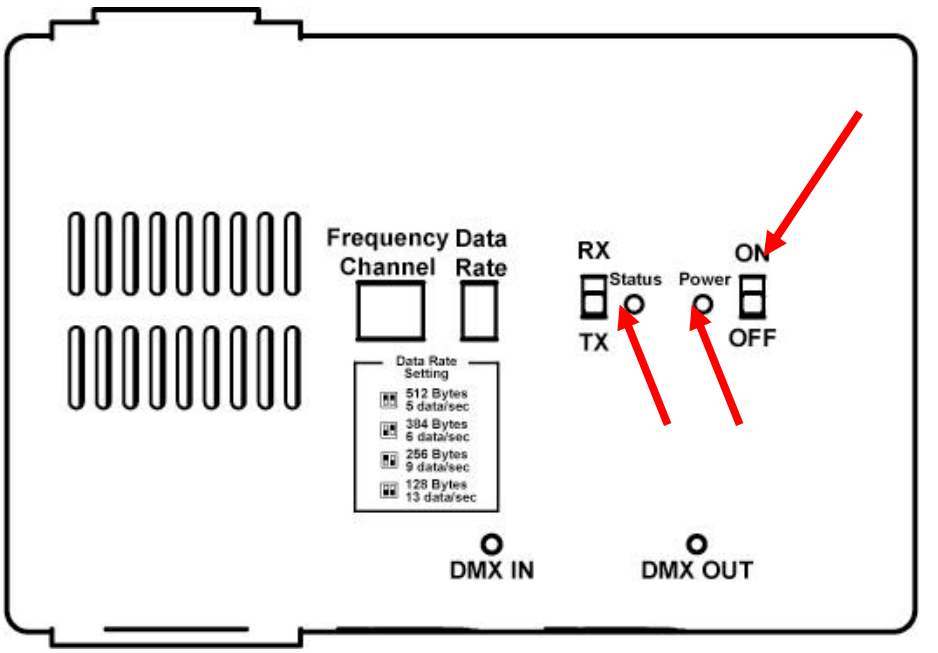
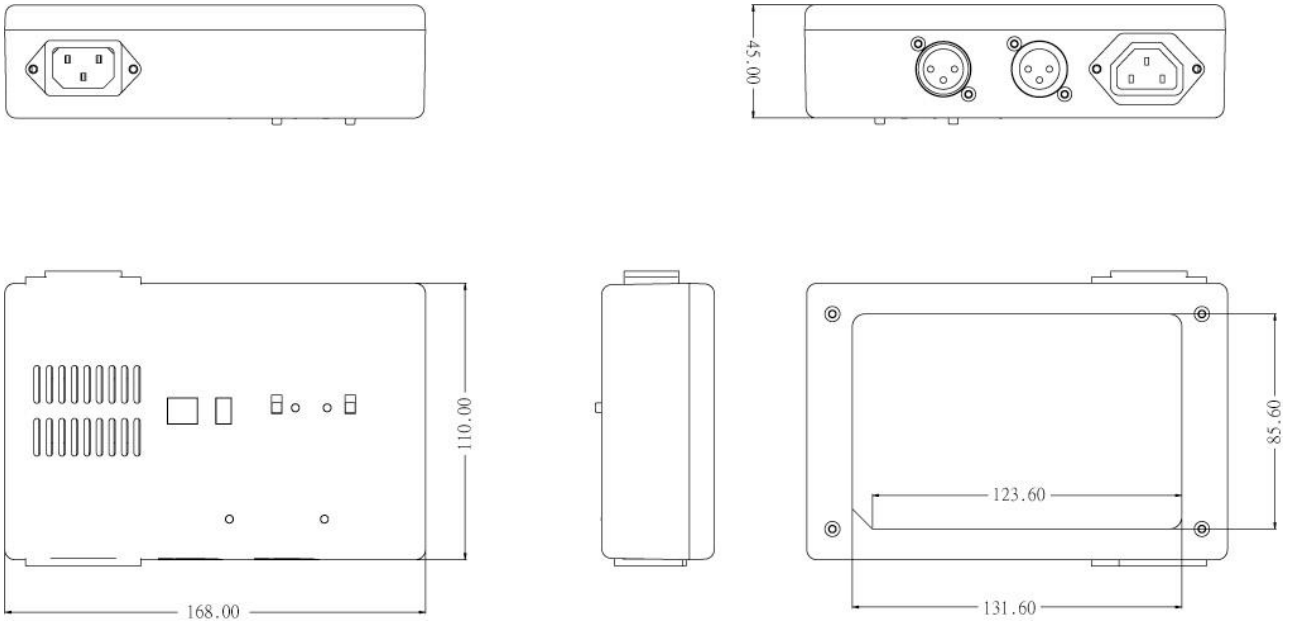


Figure 10: Top view of Wireless DMX Transceiver – Status LED

III. Specification:

Performance	Indoor/Urban Range		20m ~ 30m
	Wireless DMX Data Rate		13312bps ~ 20480bps
	RF Data Rate		250,000 bps
	Sampling Frequency	128bytes DMX data	13Hz (set data/sec)
		256bytes DMX data	9Hz (set data/sec)
		384bytes DMX data	6Hz (set data/sec)
		512bytes DMX data	5Hz (set data/sec)
Power	Operating Voltage		230V AC
General	Radio Frequency		ISM 2.4 GHz
	Dimensions		(168mm x 110mm x 45mm)
	Operating Temperature Range		-20°C - +75°C
Networking features	Supported Network Topologies		Point-to-Point, Point-to-Multipoint,
	Number of Channels		16 Direct Sequence Channels (set by using DIP switch)
DMX 512 input requirement	Start Break		> 88us
	Data Rate		250,000bps
	Data Format		8 Bit, No Parity, 1 start bit, 2 Stop Bits (> 7us)
	Input Voltage Rating		-0.3V – 4.8V
DMX 512 output	Output Voltage Rating		-0.3V – 3.0V

IV. Mechanical Specification (mm*mm*mm):



V. Additional User Information:

- In locations subject to radio frequency interference, the communication link may be disturbed but the link can recover itself. Avoid locating the transmitter near a strong radio interference source such as radio towers.

- Separate the collection of electrical and electronic equipment