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The WDS Wireless Dimming System™ Operator's Manual

Rev 1.5

CONTENTS

FIGURES

WARNING: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) This device must accept any interference received, including interference that may cause undesired operation.

Agency Identification Numbers

Part Number	US/FCC	CAN/IC	EUR/EN
AC5124C-10	KQL-PKLR2400	CAN2268391158A	X
AC5124C-200	KQL-PKLR2400-200	CAN2268391180A	

Agency Approval Overview

Part Number	US/FCC	CAN/IC	EUR/EN**	Portable	Mobile	Fixed
AC5124C-10	X	X	X	X	X	X
AC5124C-200	X	X			X-32cm*	X-32cm*

** Does not Include France or Spain

Other Countries:

Some countries not listed accept emissions / broadcast radio compliance certifications from the countries listed above. Other national compliance certification applications are pending and may be secured in the future. For current information about a country not listed above, please contact City Theatrical.

Thank you for using the WDS Wireless Dimming System™. The WDS System has been engineered to be reliable, roadworthy, easy to use, and compatible with other standard 2.4GHz wireless data and communications systems. Every effort has been made to anticipate your questions in this manual, but if you have any questions that we don't answer here, or you want to discuss a special application, please feel free to contact use directly at City Theatrical.

Getting Started with the WDS Wireless DMX Dimming System

Setting up a WDS system is quite similar to setting up any DMX512 based system. The principle thing to remember is that the WDS Transmitter and Receiver(s) *replace* DMX cable.

System Flow: DMX 512 control data from any standard DMX 512 console is input to the WDS Transmitter, which converts that DMX data to a radio signal and broadcasts it to the WDS Receiver (or Receivers). The WDS Receiver gets the radio broadcast and converts it back into standard DMX 512 data, which can than be connected via standard cables to WDS 15A Dimmers or *any other* DMX devices such as moving lights, effects, etc.

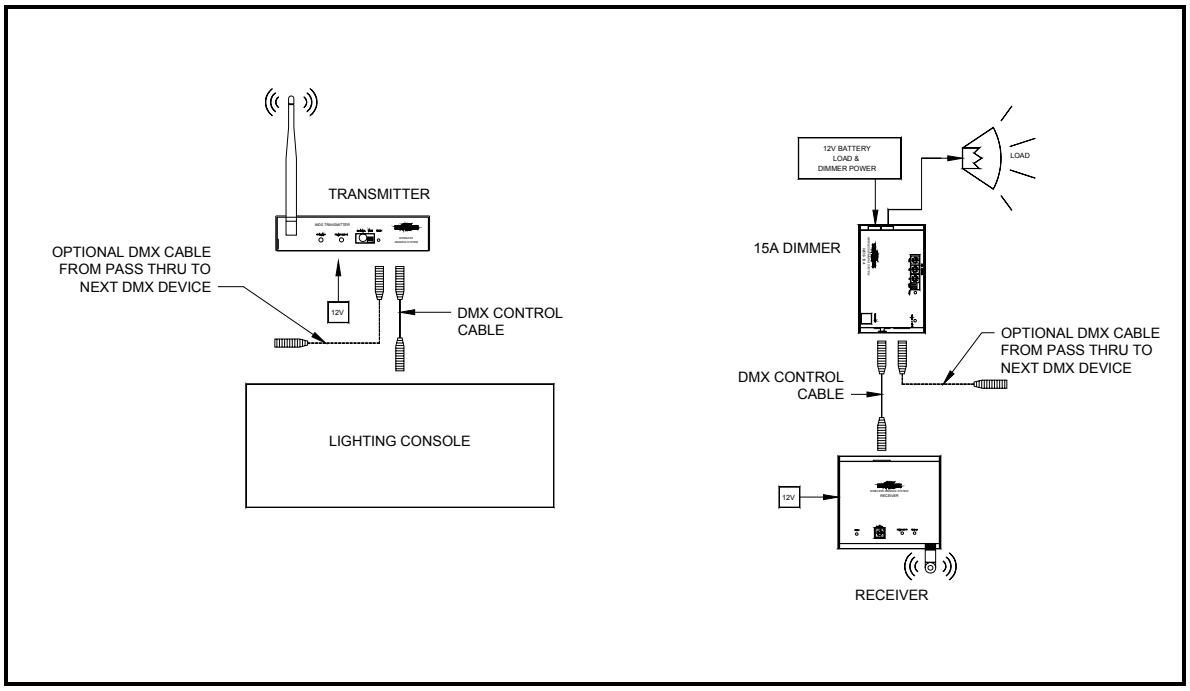

Figure 1, Typical WDS System Riser

Connection and configuration of a typical WDS System:

1. Locate the WDS Transmitter in a convenient location within range[1] of the desired Receiver location(s). Set the Transmitter's broadcast channel via the Radio Channel rotary switch (1 thru 8) and System ID 2 position DIP switch. *The Transmitter and Receiver Radio Channel and System ID settings must match for them to communicate.*
2. Connect the DMX 512 Console's DMX output to the WDS Transmitter via a standard DMX 512 cable, and connect the transmitter power supply. After Power up and initialization, The Transmitter status LEDs should be:

[1] (see *Working in the Wireless World*, page 23)

   a. POWER/DMX IN: Amber
   b. RF OUT: Amber
3. Set the WDS Receiver's broadcast channel to match the Transmitter via its Channel rotary switch and System ID 2 position DIP switch.
4. Connect Receiver power using either a WDS DC power adapter or a WDS Battery Cable (twofer). After Power up and initialization, The Receiver status LEDs should be:
   a. POWER/IN RANGE: Amber
   b. RF IN/DMX OUT: Amber
5. Set the Dimmer's DMX address to any desired value between 1 and 512 using the DMX Address Switches
6. Connect the Dimmer to (Battery) Power via the POWER IN connectors, and connect the load via the DIMMER OUT connectors. After Power up and initialization, the Dimmer POWER/STATUS LED should be blinking Green,
7. Connect the Receiver's DMX output to the DMX Input of the WDS Dimmer. The Dimmer POWER/STATUS LED Should now be solid green.
8. Test the load connection using the TEST/Bump button.
9. When the Dimmer is brought up to a level, the POWER/STATUS LED will track the level dimming between Green at OFF and Amber at FULL.

About the LEDs: All of the WDS Status LEDs are bi-color, meaning they each contain a Red and a Green LED element. When both elements are fired, the LED will appear Amber.

The Transmitter

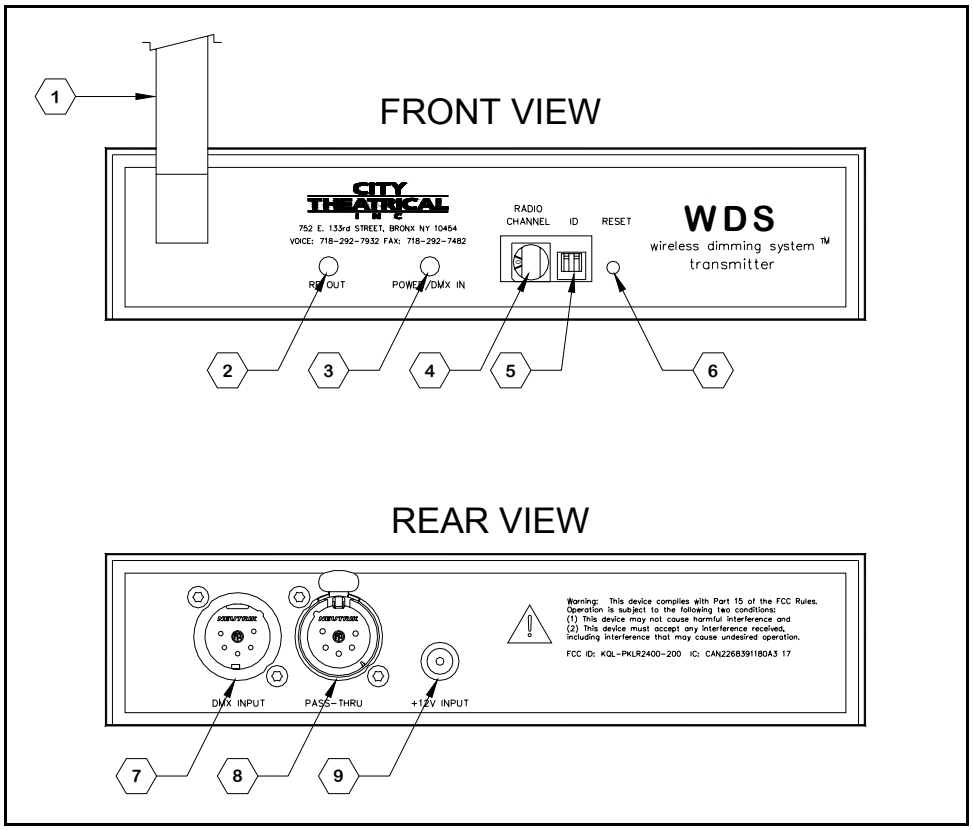

Figure 2, WDS Transmitter Front and Back Panels

The WDS Transmitter receives standard DMX 512 via its DMX INPUT connector, and broadcasts that DMX data as a radio signal. The Transmitter is equipped with the following features (see Figure 2):

Front Panel:

1. Antenna: The antenna is position-able and may be removed for shipping or storage; unscrew to remove. Do not over-tighten when attaching the antenna as the internal cabling can be broken,

2. RF OUT LED (D3): This LED indicates inter-processor communication and RF Broadcast. During normal operation, the LED will flash Green briefly to indicate the internal processors are communicating. Once valid DMX is connected, this LED will go to steady Amber to indicate that the transmitter is broadcasting.

3. Power/DMX IN LED: This LED will light Green to indicate power is connected, and change to Red/Amber when ever DMX input is detected. It flashes between Green and Amber if DMX is lost after being detected.

LED Indicator	Color/Status	Indication
RF OUT LED (item 2)	Momentary Flash Green/Red	CPUs Communicating, System Ready
	Steady Amber	Transmitting
Power/DMX IN LED (item 3)	Steady Amber	DMX Data Present
	Flashing between Green and Amber	Power ON, No DMX

Figure 3, Transmitter LED Key

4. RADIO CHANNEL select switch: Switch positions 1-8 select (settings 9 & 0 are reserved for diagnostics and special functions).

5. ID DIP switch: This 2 position DIP switch works with the Radio Channel select switch to permit selection of any of the 32 available radio channels, as per the following chart:

Radio Channel Select Switch	ID DIP Switch	Radio Channels
1 - 8	OFF OFF	1 - 8
1 - 8	ON OFF	9 - 16
1 - 8	OFF ON	17 - 24
1 - 8	ON ON	25 - 32

6. RESET switch: This switch is recessed to prevent un-intentional operation. Press with a pen or other similar device to reset the Transmitter's internal processors.

Back Panel:

7. DMX INPUT, 5P XLR Male: This is a standard DMX 512 input. Connect to the desired output port of your console to process / broadcast that port's DMX 512 data.

8. DMX PASS-THRU, 5P XLR Female: This Pass-Thru is provided to allow connection of down-stream DMX devices. The WDS Transmitter DMX Output is fully opto-isolated from the Input, CPU set and other Transmitter circuitry.

   DMX INPUT/PASS-THRU special features:
   - The DMX INPUT is provided with auto-termination, so no other end-of-line termination setting is required.
   - During normal operation, the WDS Transmitter re-generates the DMX 512 DATA presented at the Pass-Thru output, so the output may supply a full compliment of DMX load.
   - If the power supply is removed or other system failure occurs, the DMX input will automatically be switched over to a hardwired connection to the pass-thru, assuring continued delivery of the DMX data to down stream devices.

9. +12V power supply connection. Connect the Mains Power/+12V adapter here to power the unit.

The Receiver

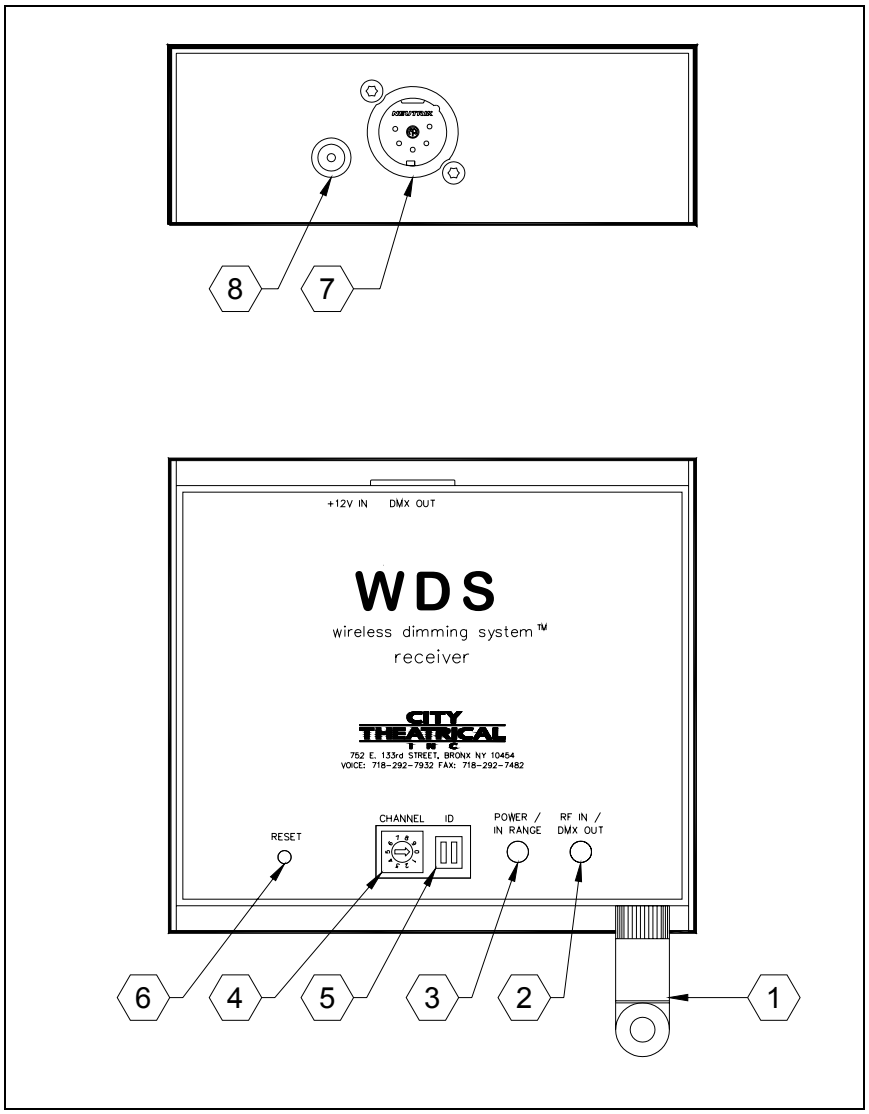

Figure 4, WDS Receiver Top and Back Panels

The WDS Receiver receives DMX data as a radio signal, and outputs that data as standard DMX 512 via its DMX OUTPUT connector. The Receiver is equipped with the following features (see Figure 2):

1. Antenna: The antenna is position-able and may be removed for shipping or storage; unscrew to remove. Do not over-tighten when attaching the antenna as the internal cabling can be broken,

2. POWER/IN RANGE LED (D4): This LED indicates the unit has Power and is in range of a Transmitter. This LED will light Green to indicate power is connected, and change to Amber whenever a correctly configured Transmitter is detected.

3. RF IN/DMX OUT LED (D3): This LED lights Green when the unit is receiving RF DMX data and Red when outputting standard DMX. Since the unit begins outputting DMX as soon as it receives RF, this LED normally appears amber when receiving/outputting.

LED Indicator	Color/Status	Indication
POWER/IN RANGE (2)	Green	Power Connected
	Amber	Transmitter Detected
RF IN/DMX OUT (3)	Green	Receiving RF DMX
	Amber	Outputting DMX

Figure 5, Receiver LED Key

4. RADIO CHANNEL select switch: Switch positions 1-8 select (settings 9 & 0 are reserved for diagnostics and special functions).

5. ID DIP switch: This 2 position DIP switch works with the Radio Channel select switch to permit selection of any of the 32 available radio channels, as per the following chart:

Radio Channel Select Switch	ID DIP Switch	Radio Channels
1 - 8	OFF OFF	1 - 8
1 - 8	ON OFF	9 - 16
1 - 8	OFF ON	17 - 24
1 - 8	ON ON	25 - 32

6. RESET switch: This switch is recessed to prevent un-intentional operation. Press with a pen or other similar device to reset the Receiver's internal processors.

7. DMX OUTPUT, 5P XLR Female: This is a standard DMX 512 output. Connect to WDS Dimmers or other DMX devices.

8. +12V power supply connection. Connect the Mains Power/+12V adapter *or* +12V battery here to power the unit.

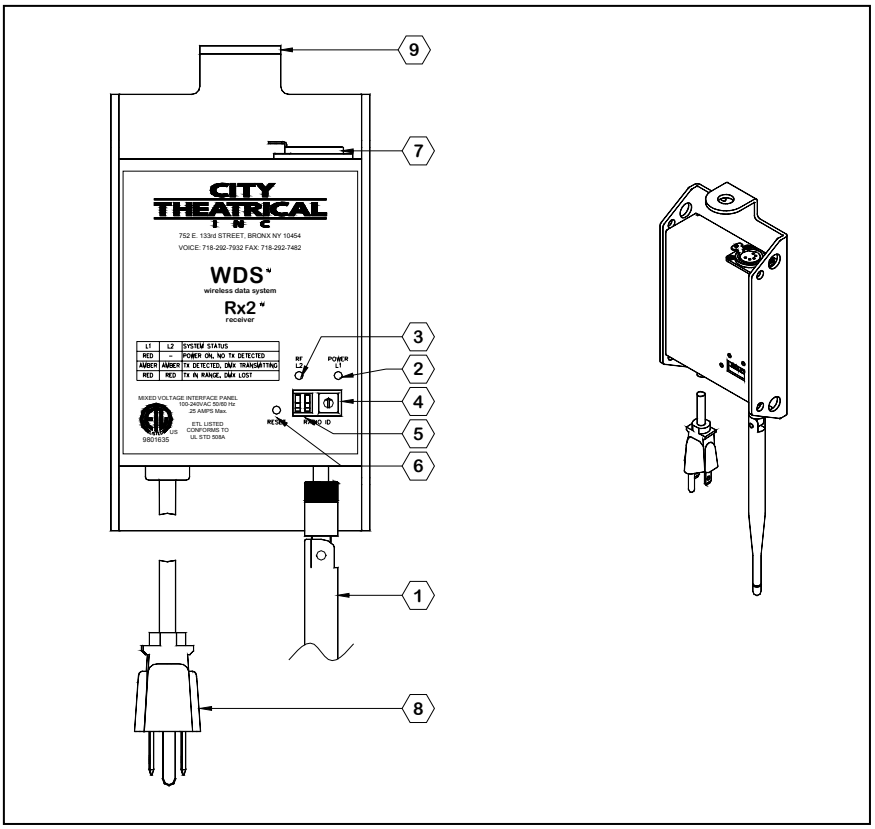

Figure 6, Rx2 Receiver

The Rx2 Receiver

The WDS Rx2 Receiver is a full-featured WDS Wireless DMX Receiver for use wherever a mains powered wireless DMX Receiver is needed. The WDS Rx2 receives DMX data as a radio signal, and outputs that data as standard DMX 512 via its DMX OUTPUT connector. The Rx2 is ETL Listed to UL 508A.

The Rx2 is equipped with the following features:

1. Antenna: The antenna is position-able and may be removed for shipping or storage; unscrew to remove. Do not over-tighten when attaching the antenna as the internal cabling can be broken,

2. POWER LED (L1): This LED indicates the unit has Power and is in range of a Transmitter. This LED will light Red to indicate power is connected, and change to Amber whenever a correctly configured Transmitter is detected.

3. RF LED (L2): This LED lights Red when the unit is receiving RF DMX data and Green when outputting standard DMX. Since the unit begins outputting DMX as soon as it receives RF, this LED normally appears amber when receiving/outputting.

L1	L2	Status
Red	-	Power ON, No Tx Detected
Amber	Amber	Tx Detected, DMX Transmitting
Red	Red	Tx Detected, DMX Lost

Figure 7, Rx2 LED Key

4. RADIO CHANNEL select switch: Switch positions 1-8 select (settings 9 & 0 are reserved for diagnostics and special functions).

5. ID DIP switch: This 2 position DIP switch works with the Radio Channel select switch to permit selection of any of the 32 available radio channels, as per the following chart:

Radio Channel Select Switch	ID DIP Switch	Radio Channels
1 - 8	OFF OFF	1 - 8
1 - 8	ON OFF	9 - 16
1 - 8	OFF ON	17 - 24
1 - 8	ON ON	25 - 32

6. RESET switch: This switch is recessed to prevent un-intentional operation. Press with a pen or other similar device to reset the Rx2's internal processors.

7. DMX OUTPUT, 5P XLR Female: This is a standard DMX 512 output. Connect to WDS Dimmers or other DMX devices

8. Auto-ranging Mains Power Connection. Connect to 100~240 VAC 50/60 Hz. Although provided with a standard North American NEMA 5-15P ("Edison") power plug, the Rx2 will work with any mains power voltage within the 100~240 VAC 50/60 Hz range.

9. C-Clamp Attachment: The Rx2 can be fitted with a standard theatrical C-clamp for pipe and truss mounting.

The 15A Dimmer

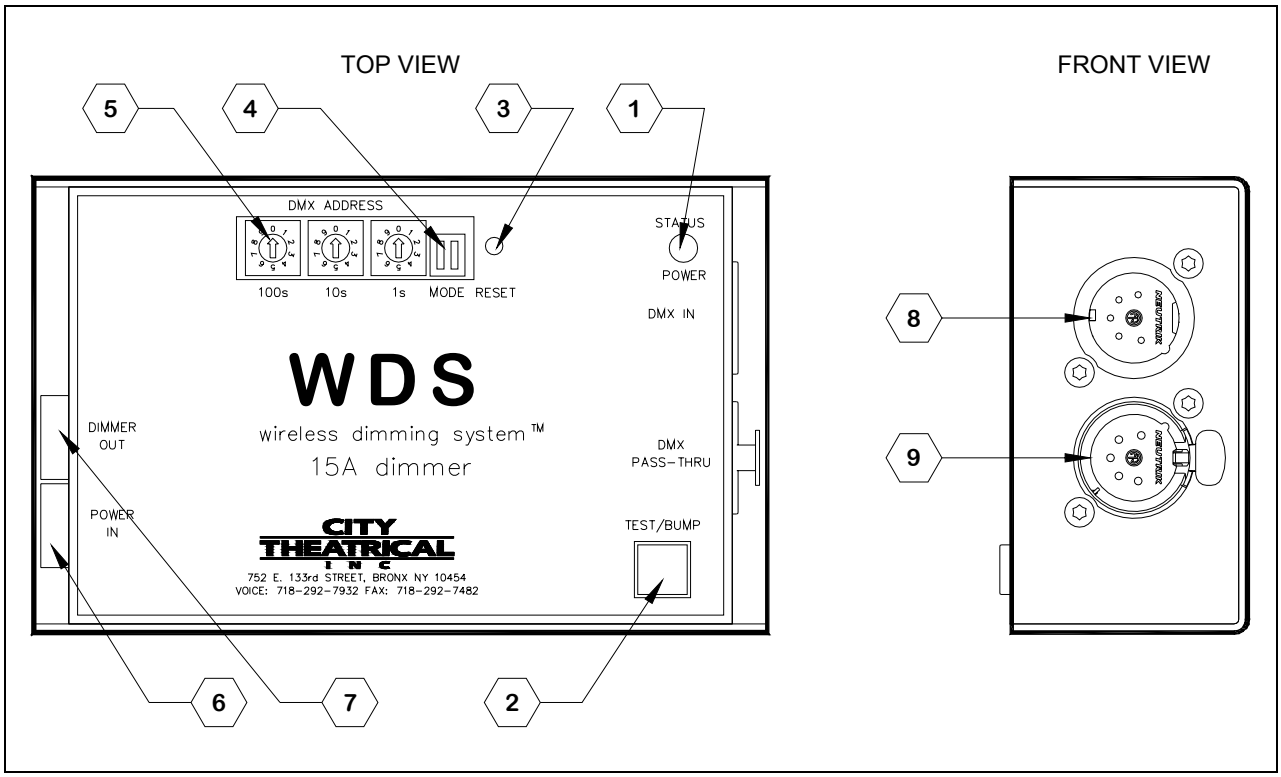

Figure 8, 15 Amp Dimmer Top and Front Panel

1. STATUS/POWER LED: This single Bi-Color LED indicates the status of a number of things including Power, DMX, and Output.

   The LED conditions are as follows:

LED State/Color	Condition
Regular blinking Green	Dimmer has power, CPU is running
Solid Green	DMX Present, Output OFF
Solid Amber	DMX Present, Output FULL
Flashing between Red and Green/Amber	DMX Lost, Dimmer holding Last Level
Flashing Red	Low Battery

Figure 9, 15 Amp Dimmer LED Key

2. TEST/BUMP Button: Press to test fire load (the LED will Turn Amber when the button is pressed).

3. RESET switch: This switch is recessed to prevent un-intentional operation. Press with a pen or other similar device to reset the Dimmer's internal processors.

4. MODE DIP switch: This 2 position DIP switch selects the operation mode as follows

Switch Setting	Function
OFF OFF	Normal Dimming, ISL Curve
ON OFF	NON - DIM
OFF ON	Linear Dimming Curve
ON ON	*Reserved*

5. DMX ADDRESS BCD Rotary Switches: these BCD rotary switches are used to set the unit's specific DMX address to any value from 1 to 512.

6. POWER IN Anderson Power Pole Connector Set: Connect to Battery Power. Red = +12-24VDC, Black = DC Common.

7. DIMMER OUT Anderson Power Pole Connector Set: Connect to the load to be dimmed. Red = + VDC (0-Full), Black = DC Common

8. DMX INPUT, 5P XLR Male: This is a standard DMX 512 input. Connect to the DMX output port of the Receiver, or any standard DMX output device.

9. DMX PASS-THRU, 5P XLR Female:
This Pass-Thru is provided to allow connection of down-stream DMX devices.

DMX INPUT/PASS-THRU special features:

- The DMX INPUT is provided with auto-termination, so no other end-of-line termination setting is required.
- During normal operation, the WDS 15 Amp Dimmer re-generates the DMX 512 data presented at the Pass-Thru output, so the output may supply a full compliment of DMX load.
- If the power supply is removed or other system failure occurs, the DMX input will automatically be switched over to a hardwired connection to the pass-thru, assuring continued delivery of the DMX data to down stream devices.

Protective Features

- Low Battery Power: If the connected Battery drops below a preset voltage, the Dimmer will shut down, and will not restart until reset (the Low Battery indication will light). This feature protects rechargeable batteries from discharging to the point where they cannot be recharged with a standard charger. The standard factory set cut-off point is 8.5VDC. Other settings are available on a custom basis, please consult City Theatrical.

- Internal Watchdog for DMX processor and Dimmer Processor

  It the DMX processor fails, the LED will flash @ 1 sec interval (Red or Amber depending on DMX failure mode) and the load output will be turned off, protecting

the battery and load.

If the Dimmer processor fails, the load output will be turned off, protecting the battery and load.

- Internal reverse power polarity protection: The internal power supply circuitry is designed to protect the control electronics from damage if the battery leads are accidentally reversed or plugged into the DIMMER OUTPUT connection.

- Hold Last valid DMX Level: If DMX is lost, the WDS 15A Dimmer will hold the last valid level for ~ 5 minutes, and then fade to black.

Switch Diagnostics

Setting the BCDs to the settings shown below and resetting the unit will start the following diagnostic self tests:

BCD Settings	MODE DIP Settings	Function Tested	Indication
601		Ones (1s) BCD	LED Will flash = to the number the *1s* BCD is set to
602		Tens (10s) BCD	LED Will flash = to the number the *10s* BCD is set to
603		Hundreds (100s) BCD	LED Will flash = to the number the *100s* BCD is set to
604	0 0	DIP Switch	No LED Flashes
	0 1	DIP Switch	1 LED Flash
	1 0	DIP Switch	2 LED Flashes
	1 1	DIP Switch	Fast Red/Green/Amber Flashes
605		Manually Set Output Level	After reset move the tens and ones BCD switches to manually set the lamp to a % level

The BCD test setting must be set (as above) ether before power is applied or Reset is pressed.

The Personal Dimmer

The WDS Personal Dimmer combines a WDS DC Dimmer with it's own dedicated 2.4GHz Receiver to provide wireless dimming in a very small, light weight and concealable package that can be worn with the provided belt clip, or hidden in a prop or set piece. The PD is internally fused at 5A.

Features:

- Integral 32 Channel 2.4GHz WDS Receiver
- Integral Class 2 power limited 5A Dimmer
- Operating power range +9~12 VDC
- Very small size
- Use with belt clip or mount flat in prop or set piece
- Works with Standard WDS Transmitter
- Can be used in any WDS system with all other WDS products

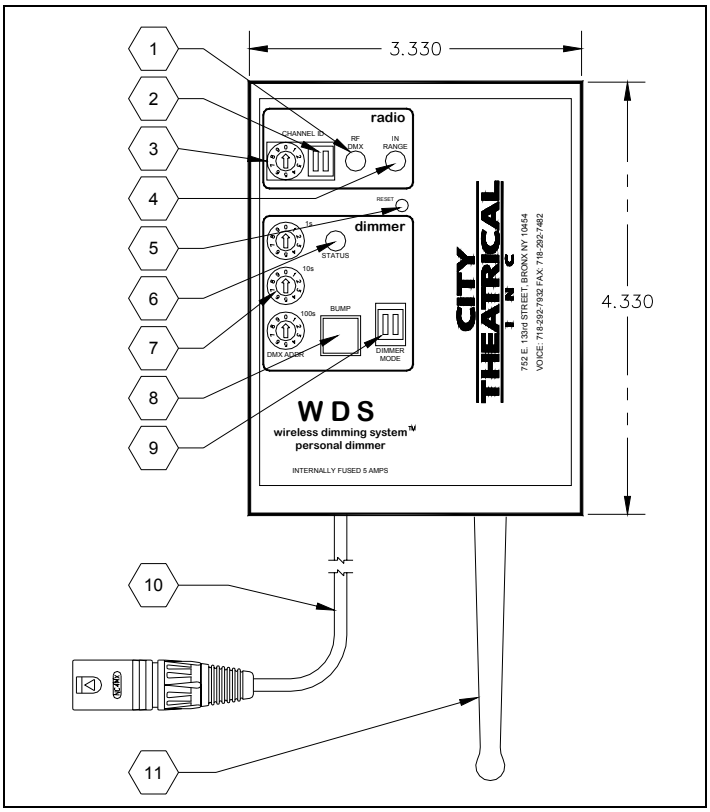

Figure 10, WDS Personal Dimmer

PD RADIO CONTROLS

1. RF IN/DMX OUT LED (D3): This LED lights Green when the unit is receiving RF DMX data and Red when outputting standard DMX. Since the unit begins outputting DMX as soon as it receives RF, this LED normally appears amber when receiving/outputting.

2. ID DIP switch: This 2 position DIP switch works with the Radio Channel select switch to permit selection of any of the 32 available radio channels, as per the following chart:

Radio Channel Select Switch	ID DIP Switch	Radio Channels
1 - 8	OFF OFF	1 - 8
1 - 8	ON OFF	9 - 16
1 - 8	OFF ON	17 - 24
1 - 8	ON ON	25 - 32

3. RADIO CHANNEL select switch: Switch positions 1-8 select (settings 9 & 0 are reserved for diagnostics and special functions).

4. POWER/IN RANGE LED (D4): This LED indicates the unit has Power and is in range of a Transmitter. This LED will light Green to indicate power is connected, and change to Amber whenever a correctly configured Transmitter is detected.

Radio LED Indicator	**Color/Status**	**Indication**
POWER/IN RANGE	Green	Power Connected
	Amber	Transmitter Detected
RF IN/DMX OUT	Green	Receiving RF DMX
	Amber	Outputting DMX

Figure 11, PD Radio LED Key

5. RESET switch: This switch will reset the entire PD unit (both Radio receiver and Dimmer). It is recessed to prevent un-intentional operation. Press with a pen or other similar device to reset the PD's internal processors.

PD DIMMER CONTROLS

6. STATUS/POWER LED: This single Bi-Color LED indicates the status of a number of things including Power, DMX, and Output.

   The LED conditions are as follows:

Dimmer LED State/Color	**Condition**
Regular blinking Green	Dimmer has power, CPU is running
Solid Green	DMX Present, Output OFF
Solid Amber	DMX Present, Output FULL
Flashing between Red and Green/Amber	DMX Lost, Dimmer holding Last Level
Flashing Red	Low Battery

Figure 12, PD Dimmer LED Key

7. DMX ADDRESS BCD Rotary Switches: these BCD rotary switches are used to set the unit's specific DMX address to any value from 1 to 512.

8. TEST/BUMP Button: Press to test fire load (the LED will Turn Amber when the button is pressed).

9. MODE DIP switch: This 2 position DIP switch selects the operation mode as follows

Switch Setting	Function
OFF OFF	Normal Dimming, ISL Curve
ON OFF	NON - DIM
OFF ON	Linear Dimming Curve
ON ON	*Reserved*

10. 4P XLR Tail for Power Input and Load Output connections:

Pin	Function
1	Input DC Common
2	Input 9~12 +VDC
3	Output DC Common
4	Output Dimmed +VDC

11. Flexible antenna

Personal Dimmer Operating and Protective Features

- Class 2 Power Limitation: Because the Personal Dimmer is intended for use in installations where actors, dancers and technicians may come into regular contact with the unit while it is operating, it is pre-configured as an NEC 725 Class 2 low power device with a 12V 5A / 60W maximum power limitation. If control is needed for higher voltage or higher wattage devices, the standard 15A Dimmer or 30A Custom Dimmer should be used.

- 9V Battery operation: The WDS Personal Dimmer will operate with small loads from a single 9V Battery. In a typical application, the PD with a .150 amp load will run for up to two hours on a single 9V Battery. Two or more batteries may be connected in parallel for extended operation or higher loads/

- Low Battery Power Sense: If the connected Battery drops below a preset voltage, the Dimmer will shut down, and will not restart until reset (the Low Battery indication will light). This feature protects rechargeable batteries from discharging to the point where they cannot be recharged with a standard charger. The standard factory set cut-off point for the PD is 5.5VDC. Other settings are available on a custom basis, please consult City Theatrical.

- Internal Watchdog for DMX processor and Dimmer Processor

  It the DMX processor fails, the LED will flash @ 1 sec interval (Red or Amber depending on DMX failure mode) and the load output will be turned off, protecting the battery and load.

If the Dimmer processor fails, the load output will be turned off, protecting the battery and load.

- Internal reverse power polarity protection: The internal power supply circuitry is designed to protect the control electronics from damage if the battery leads are accidentally reversed or plugged into the DIMMER OUTPUT connection.

- Hold Last valid DMX Level: If DMX is lost, the WDS PD will hold the last valid level for ~ 5 minutes, and then fade to black.

Switch Diagnostics

Setting the BCDs to the settings shown below and resetting the unit will start the following diagnostic self tests:

BCD Settings	MODE DIP Settings	Function Tested	Indication
601		Ones (1s) BCD	LED Will flash = to the number the *1s* BCD is set to
602		Tens (10s) BCD	LED Will flash = to the number the *10s* BCD is set to
603		Hundreds (100s) BCD	LED Will flash = to the number the *100s* BCD is set to
604	0 0	DIP Switch	No LED Flashes
	0 1	DIP Switch	1 LED Flash
	1 0	DIP Switch	2 LED Flashes
	1 1	DIP Switch	Fast Red/Green/Amber Flashes
605		Manually Set Output Level	After reset move the tens and ones BCD switches to manually set the lamp to a % level

The BCD test setting must be set (as above) ether before power is applied or Reset is pressed.

Application Notes

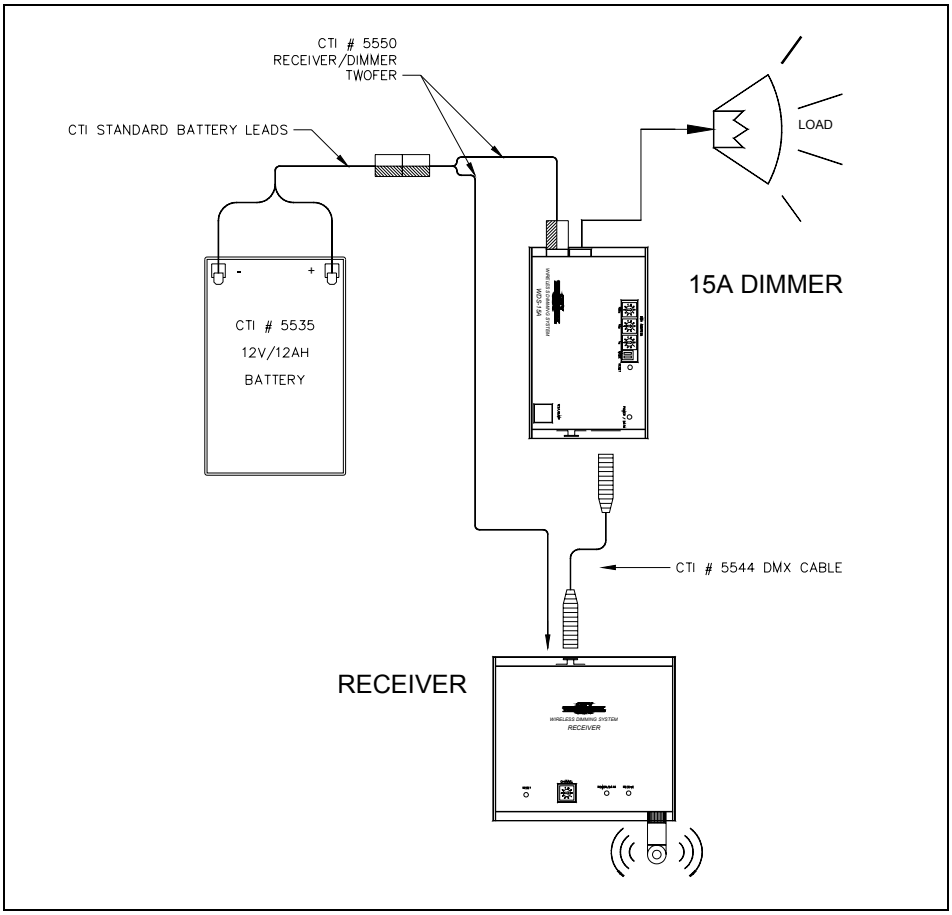

Figure 13, Typical Single 12V Battery System

Batteries and Power Considerations

Rechargeable 12V batteries used with this system may not charge readily with modern chargers if they are allowed to discharge past ~ 8.5VDC. When allowed to discharge more the battery may load the charger too much, causing the charger to self-protectively shut down[2]. Furthermore, with some loads the current draw will tend to rise as the available voltage drops. If the battery is allowed to discharge too far under these conditions, the current may exceed the limits of the system and cause overheating and/or blow the fuse.

For all these reasons, the WDS Dimmer is designed with a low power sensing system that shuts down the dimmer if the battery gets below a safe voltage limit (the standard factory setting is ~9VDC; custom units may be configured with a different limit voltage if needed, consult CTI for details).

[2] If this should happen, the charger may be jump-started by connecting the too-low battery in parallel with a charged battery, starting the charger, and then removing the full battery once the charging has reached a stable point.

The WDS 15A Dimmer will control a load of up to 15 amps at *any* voltage within its rated operating range of 12-24VDC. At 24V the maximum load is 360 watts, while at 12V the maximum load is 180 watts. Typical continuous use battery life for the standard 12 Amp/Hour CTI 12V rechargeable battery (CTI # 5535) is shown in the table below:

Number of Batteries	Load Voltage	Battery Wiring	Total watts Load	Typical Battery Life per charge	Example of typical load types
1	12	n/a	150	20~25 minutes	2 x 75W MR 16 lamps
2	24	Series	300	20~25 minutes	24V Lamps
2	12	Parallel	150	40~50 minutes	2 x 75 W MR 16 lamps

For extended 12V operation, 2 (or more) batteries may be connected together in parallel as suggested in the table above (see Figure 14). For 24V operation, 2 batteries may be connected in series so that the battery voltages add together (see Figure 15).

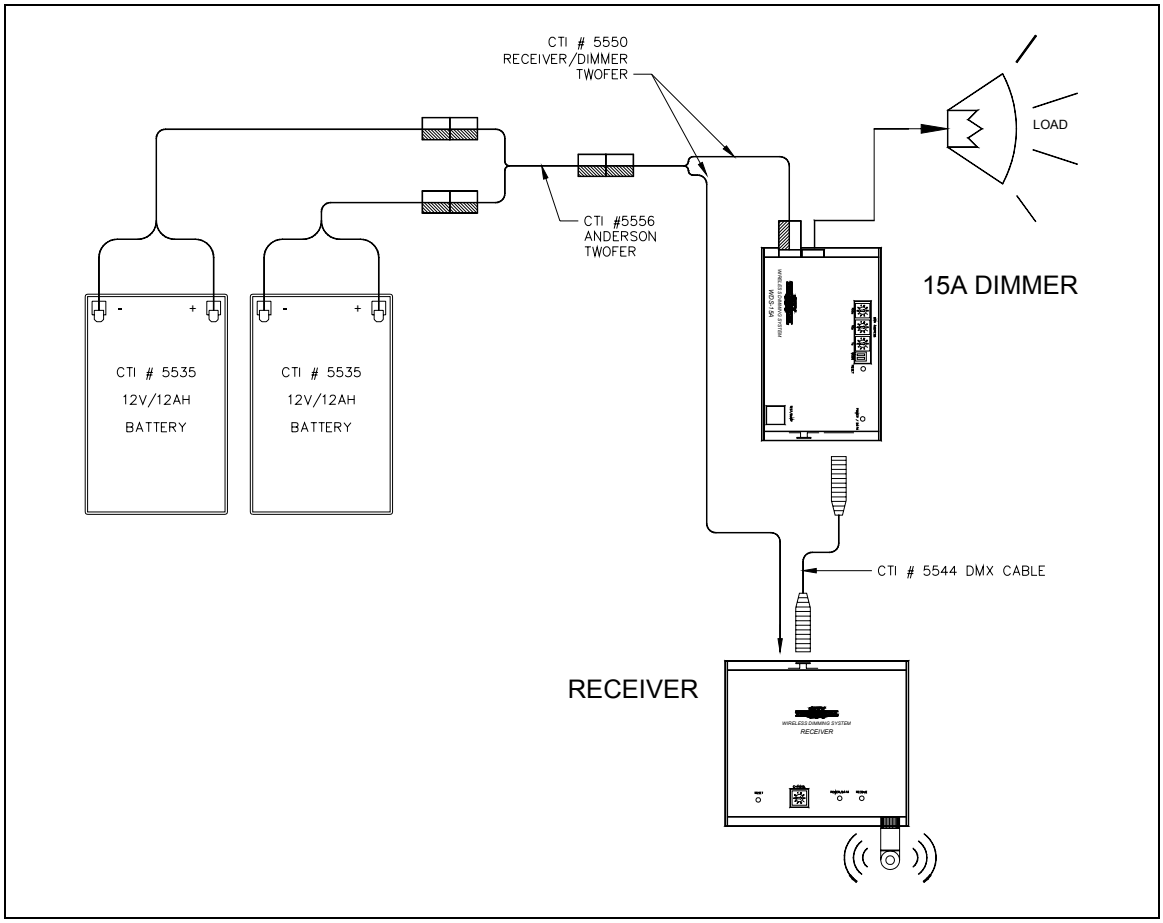

Figure 14, Two Battery 12V (parallel) System

For 24V Dimmer operation, it is recommended that the associated WDS Receiver be powered with 12V from only one of the batteries in the series array (see Figure 15).

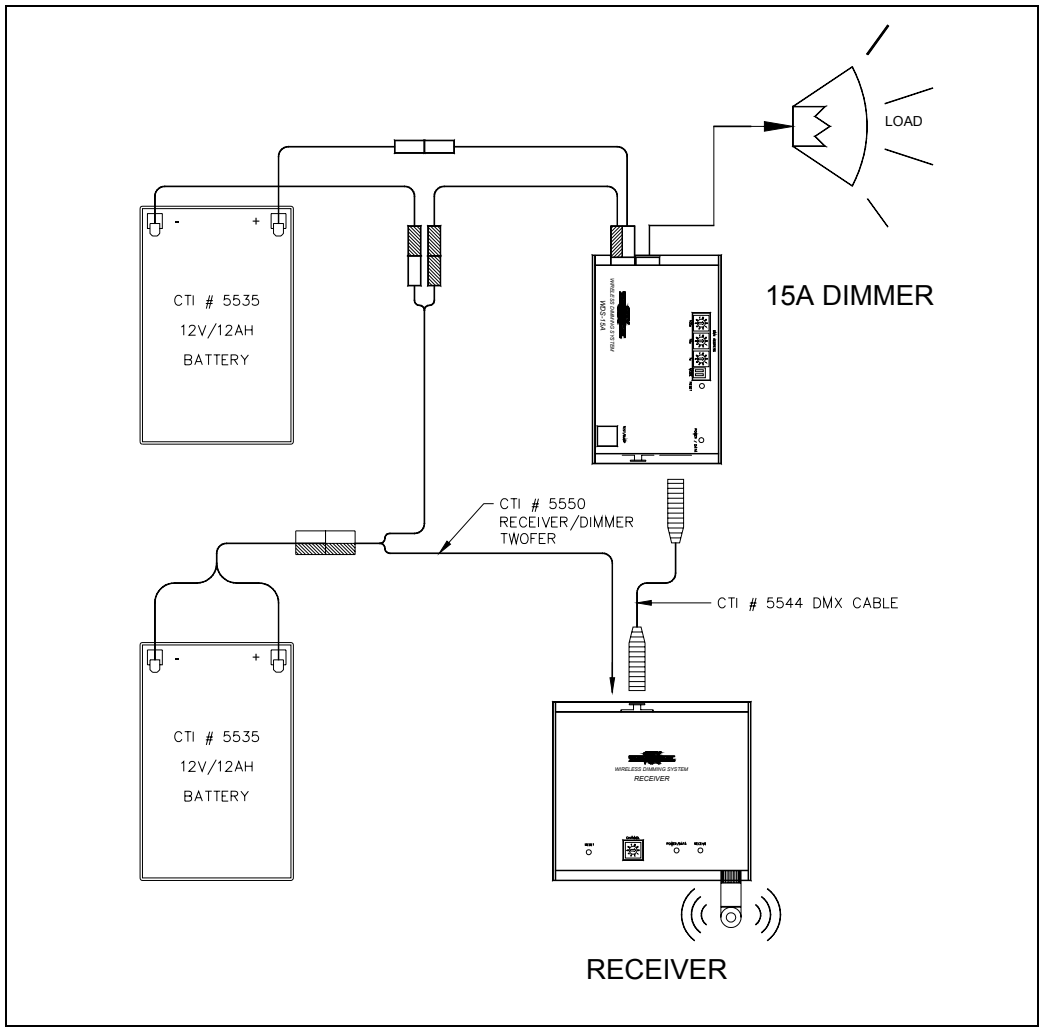

Figure 15, Two Battery 24V (series) System

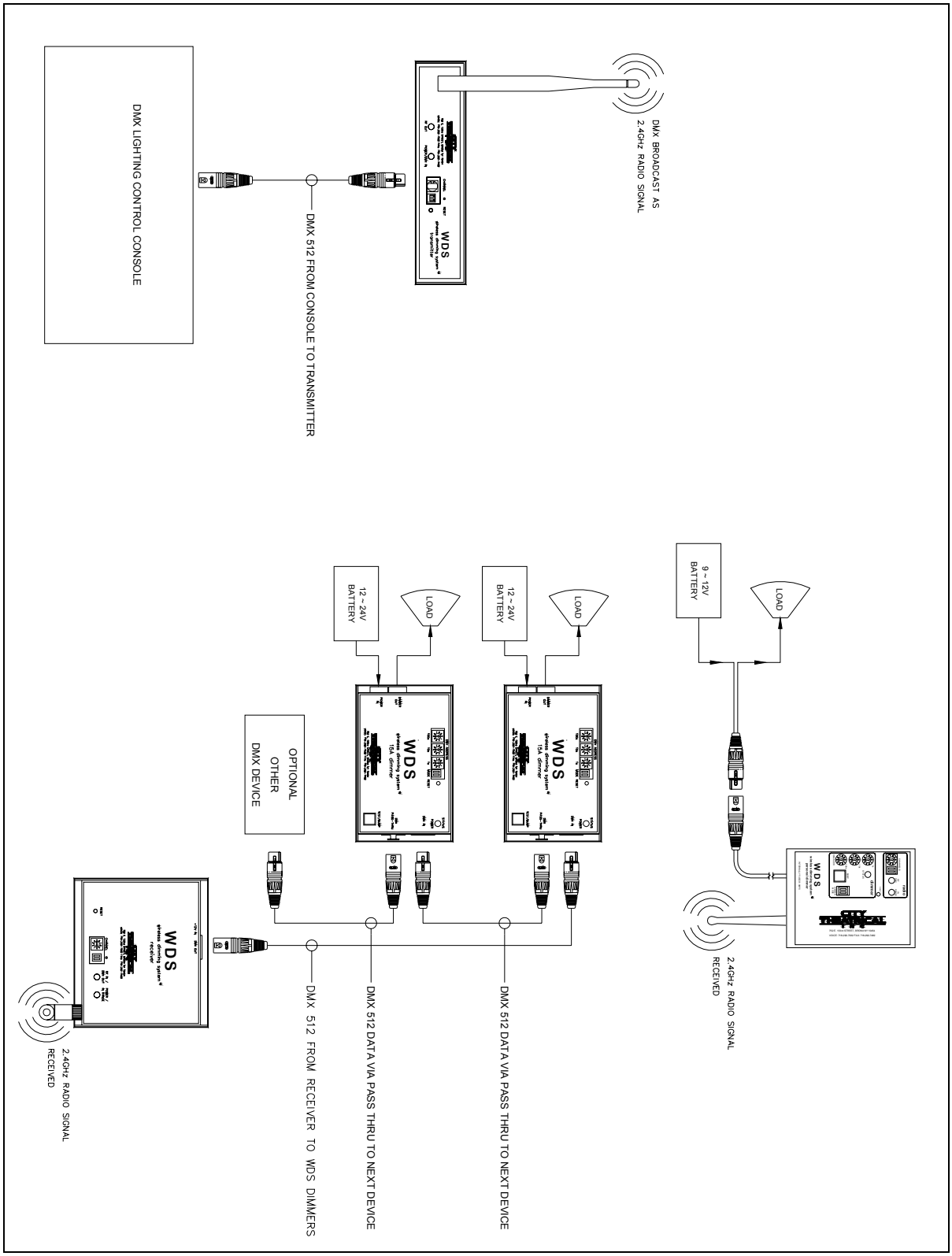

Figure 16, Typical WDS System with Personal Dimmer

Working in the Wireless World

Range

The theoretical maximum range for the 200mW system, indoor line-of-sight, is ~ 400 feet. In practice, range can vary depending on many environmental features, including structural metal in the area, ambient electrical activity, etc. For best results, it is recommended that the system be tested at the installation site to confirm usable range for that site, prior to final location of the equipment. The Transmitter and Receiver(s) should be positioned with a clear line of site between the units, and may need to be re-positioned for best results, particularly in electrically noisy or otherwise harsh environments.

Interference

The WDS system works in the 2.4GHz Broadcast frequency band, which is designated for license-free operation (within regulatory agency limits, of course). This band is used by other equipment, notably 802.11B wireless Ethernet systems. The WDS system uses spread-spectrum channel hopping radio technology to eliminate/minimize interference issues. For best results, the WDS Transmitter should be located at least 6 feet from any Ethernet equipment, and care should be taken not to place *either* system's transmitter in the line-of – sight between the other system's equipment.

Accessories

A full range of accessories is available for the WDS Dimming system (see below). Many different complete system configurations can be assembled entirely from the City Theatrical Catalog. In addition, City Theatrical will be happy to develop and provide custom parts, interfaces, or accessories for any unique WDS requirement.

WDS System Accessory	City Theatrical Part #
Universal Input (90-240VAC, 50-60Hz) +12VDC CL 2 Power Supply for Transmitter and Receiver	CTI # 5525
7" Antenna	CTI # 5530
12V 12AH Rechargeable Battery with Standard Anderson Power Pole Connector Tails	CTI #5535
12V 4 A Auto-charger with Standard Anderson Power Pole Connector Tails	CTI # 5540
DMX Cable, 18"	CTI #5545
Power Twofer, Battery to Receiver and Dimmer	CTI # 5550
10' 2/12awg Jumper w/ color coded Anderson Power Pole Connectors	CTI # 5552
25' 2/12awg Jumper w/ color coded Anderson Power Pole Connectors	CTI # 5554
18" 2/14awg Twofer w/ color coded Anderson Power Pole Connectors	CTI # 5556
Anderson 30A Power Pole Connector, Red, w/ crimp terminal	CTI # 5560
Anderson 30A Power Pole Connector, Black, w/ crimp terminal	CTI # 5561
WDS Transmitter 1U Rackmount Bracket (for 1 or 2 Transmitters)	CTI # 5565
WDS Transmitter Pipe Mount Bracket	CTI # 5570
WDS Receiver Pipe Mount Bracket	CTI # 5570
WDS 15A Dimmer Surface Mount Bracket	CTI # 5580

General Specifications

RF Broadcast Frequency: 2.402 – 2.478 GHz

Compliance:

- 200 mW Transceiver - US (FCC15.247), Canada (IC)
- 10 mW Transceiver - US (FCC15.247), Canada (IC), Europe (EN)**
  ** Does not Include France or Spain

System Features:

- Rugged and compact steel and aluminum cases
- Standard DMX 512 inputs and outputs via Neutrik XLR connectors
- Fully Opto-isolated DMX Input
- Fully Isolated DMX Pass-Through Outputs on the Transmitter and Dimmer
- Auto-terminated DMX
- 32 Radio Channels
- Internal diagnostics

Unit Specifications

Transmitter:

- Dimensions: 3.813” x 7.50” x 1.687”
- Power: 12V AC or DC, 200mA
- DMX 512 Input: Neutrik NC5MBH 5 pin XLR male connector
- DMX 512 Pass-Through: Neutrik NC5FBH 5 pin XLR female connector
- LED Pilot light
- LED Data Present light
- LED Data Transmit Light
- Internal diagnostics
- Transmission capability: 512 channels of DMX 512 data as channels 1– 512
- Broadcast channels: 32, selectable via rotary BCD switch and 2 pos. DIP switch
- Antenna: Removable for packing

Receiver:

- Dimensions: 4.50” x 5.00” x 1.687”
- Power: 12V AC or DC, 200mA
- DMX 512 Output: Neutrik NC5FBH 5 pin XLR female connector
- Output capability: 512 channels of DMX 512 data received from Transmitter
- Broadcast channels: 32, selectable via rotary BCD switch and 2 pos. DIP switch
- LED Pilot light
- LED Data Receive light
- LED Data Output Light
- Internal diagnostics
- Antenna: Removable for packing

Rx2 Receiver:

- Dimensions: 4.” x 7.50” x 1.625” (without C-clamp)
- Power: 100~240VAC 50/60 Hz .250 A
- DMX 512 Output: Neutrik NC5FBH 5 pin XLR female connector
- Output capability: 512 channels of DMX 512 data received from Transmitter
- Broadcast channels: 32, selectable via rotary BCD switch and 2 pos. DIP switch
- LED Pilot light
- LED Data Receive light
- LED Data Output Light
- Internal diagnostics
- Antenna: Removable for packing

15A Dimmer:

- Dimensions: 3.25” x 5.25” x 1.687”
- Power: 12V DC, 200mA, From Load Battery Power
- DMX 512 Input: Neutrik NC5MBH 5 pin XLR male connector
- DMX 512 Pass-Through: Neutrik NC5FBH 5 pin XLR female connector
- DMX Addressing: any DMX address 1 – 512, configured with (3) standard BCD switches
- Bump button for load test
- LED Pilot light
- LED Data Present indication
- LED Output indication
- LED Low Power indication
- Internal diagnostics
- Power and Load Connectors: Anderson Power 1327 series
- Max output: 24VDC 15 Amps
- Output: PWM Dimming from 00 (Off) to FF (Full)
- Three user-selectable output modes: two dimmer curves (ISL and linear) and non-dim

Personal Dimmer:

- Integral WDS Receiver and 5A 12V Dimmer
- Dimensions: 3.30” x 4.30 x .8125”
- Power: 9~12V DC, 100mA, From Load Battery Power
- Broadcast channels: 32, selectable via rotary BCD switch and 2 pos. DIP switch
- Internal diagnostics
- DMX Addressing: any DMX address 1 – 512, configured with (3) standard BCD switches
- Bump button for load test
- LED Pilot lights
- LED Data Receive light
- LED Data Output Light
- LED Data Present indication
- LED Dimmer Output indication
- LED Low Power indication
- Power and Load Connector: 4 Pin XLR Cable mount Male
- Output: PWM Dimming from 00 (Off) to FF (Full)

- Max output: 12VDC 5 Amps
- Three user-selectable output modes: two dimmer curves (ISL and linear) and non-dim

Switch Setting and LED Guides

The following quick reference guides provide system switch setting and LED information in a convenient pocket-sized format and may be copied, cut out, laminated, etc.

WDS Transmitter Status LEDs

LED Indicator	Color/Status	Indication
RF OUT LED	Momentary Flash Green/Red	CPUs Communi-cating, System Ready
	Steady Amber	Transmitting
Power/DMX IN LED	Steady Amber	DMX Data Present
	Flashing between Green and Amber	Power Present No DMX Data

WDS Transmitter Switch Settings

Radio Channel Select Switch	ID DIP Switch	Radio Channels
1 - 8	OFF OFF	1 - 8
1 - 8	ON OFF	9 - 16
1 - 8	OFF ON	17 - 24
1 - 8	ON ON	25 - 32

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752 EAST 133RD STREET BRONX, NY 10454
718/292/7932 FAX:718/292/7482
www.citytheatrical.com

WDS Receiver Status LEDs

LED Indicator	Color/Status	Indication
POWER/IN RANGE	Green	Power Connected
	Amber	Transmitter Detected
RF IN/DMX OUT	Green	Receiving RF DMX
	Amber	Outputting DMX

WDS Receiver Switch Settings

Radio Channel Select Switch	ID DIP Switch	Radio Channels
1 - 8	OFF OFF	1 - 8
1 - 8	ON OFF	9 - 16
1 - 8	OFF ON	17 - 24
1 - 8	ON ON	25 - 32

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WDS 15A Dimmer Status LEDs

LED State/Color	Condition
Regular blinking Green	Dimmer has power, CPU is running
Solid Green	DMX Present, Output OFF
Solid Amber	DMX Present, Output FULL
Flashing between Red and Green/Amber	DMX Lost, Dimmer holding Last Level
Flashing Red	Low Battery

WDS 15A Dimmer Switch Settings

Switch Setting	Function
OFF OFF	Normal Dimming, ISL Curve
ON OFF	NON - DIM
OFF ON	Linear Dimming Curve
ON ON	*Reserved*

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