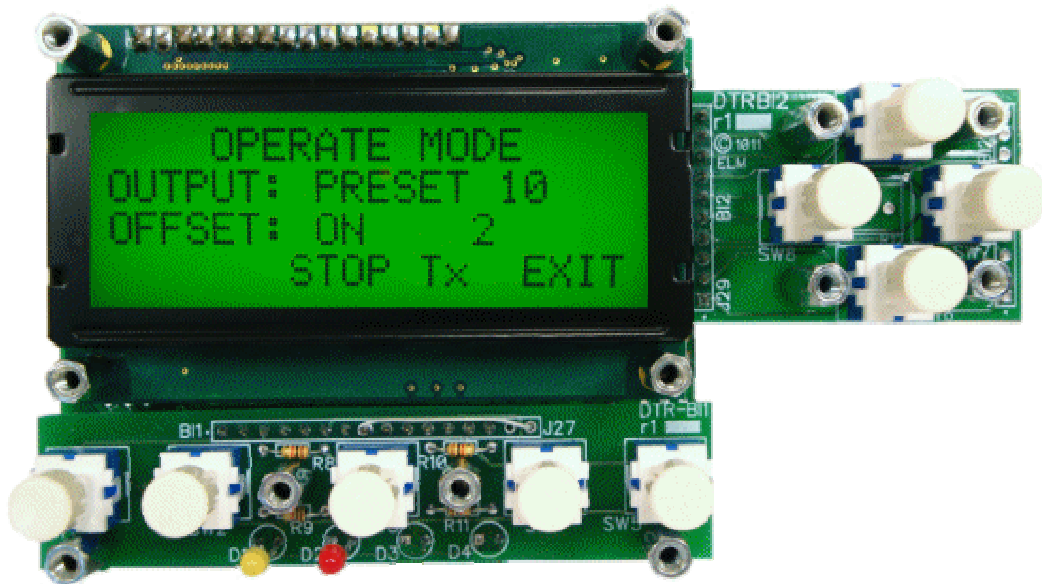


DTR

DMX Transceiver Scene Generator, 10 Preset Scene Save and Recall, and DMX Data Analyzer



**ELM Video
Technology, Inc.**
"Innovative Midi and DMX Products"



DTR OVERVIEW

The DTR is a DMX 512 data receive and send unit with 10 store and recall preset scene snapshots. Each of the 10 presets store 512 channel levels and the packet size and start code. Each preset can be edited to precise values and recalled anytime. Modes include; TEST:TRANSMIT - "GROUP Mode" sends any level to any channel to create a specific snapshot of any scene and then, save, edit, or load a preset. "ALL Mode" sends a specific level to all of the channels at once. "SINGLE Mode" sends a specific level on a single channel and advance it to any channel. TEST:RECEIVE - Analyze incoming DMX data on any of the 512 channels. The OPERATE Mode will send a preselected snapshot (or loop through) the incoming data. Add an optional offset value to change the start channel to any start channel needed. In the operate mode, the status is recalled upon powering. Plus many more features!

The DMX Preset has many different uses for example; Receive: connect the input to any DMX source and analyze and/or save the data (i.e. 512 channel levels, packet size, start code, and frequency) to 1 of 10 presets. Any snapshot or preset can be edited and resaved at any time. To Send (or Transmit): connect the output to any DMX daisy chain as the (only) DMX generating device and send any channel any level, packet size, and start code. Create a scene from scratch or recall it from 1 of 10 stored presets. Receive and Send: connect a DMX source to the input and a daisy chain to the output. Analyze, Send, or in the Operate Mode the input can be "looped through" to the output, or a preset can be loaded to send. Create an offset value for the start of the packet, for example, start sending channel 1 out on channel 25 (ch 2=26, ch 3=27 etc.).

CONNECTION

Connect a DMX512 source into the DMX input. (*If a loop through connector is installed either terminate with a 120 ohm terminator or loop to other devices.*) Once a valid DMX signal is being received the Rx LED will illuminate. Connect the DMX output to a device or daisy chain as the only DMX generating device on the loop. The Tx LED will illuminate when the send (or transmit) circuit is active i.e. TEST:TRANSMIT and OPERATE mode.

OPERATION

Once a DMX signal is established, any of the 512 channels and levels can be displayed. To view the Rx (incoming DMX data) navigate to the TEST:RECEIVE menu. *See the DTR Menu Flow Chart.* The value at the top displays the packet size being received. The **C** indicates the **Channel** and the values are displayed in **D** for **Decimal**, **H** for **Hexadecimal**, and **%** for **Percentage** values. To change the display types navigate to the SETUP:DISPLAY menu options. To scroll through and view the channel levels press the LEFT or RIGHT buttons, or press the s10 to increment 10 channels s100 for 100 channels at a time. (The s next to any menu option indicates that by pressing the shift button and then pressing the respective button an additional function is available.) To subtract 10 or 100 press and hold the Shift button and press either 10 or 100. To return to channel 1 press Shift and hold and then the Left button, to go to the middle of the packet press the Left and Right buttons.

To view the packet information select the PACKET button. The "Rate" is the frequency or the amount of packets being received per second. The "Start" is the start code of the packet being received. The "Length" is the size (or amount of bytes of data) in each packet. Press Exit or Up to return to the previous menu.

The TEST:TRANSMIT will send DMX data out for testing or scene creating and has 3 options: Single, All, and Group. Entering these modes will immediately begin to send (or transmit) data indicated by the Tx LED, upon exiting any of these modes the unit will stop sending data.

The TEST:TRANSMIT:SINGLE option will send a specific value (or level) only on one channel. This can be useful in finding a specific connected device and its' assigned channel. Set the desired value and scroll or jump to any channel and the value will be sent on the respective channel. *Navigation options:* Left, Right, 10, 100, s10 (-10), s100 (-100), Shift Left (jump to channel 1), and Left/Right (jump to the middle of the packet). To edit the packet press the Packet button and set the start code and length. For the start code press the Up, Down, or Default buttons. Up or Down will adjust by 1, Up and Down will set to 127, Shift Up will set to 255, Shift Down and Default will set to 0. To adjust the Length, press the Right button and set the values to the desired packet size. Either Keep or Cancel the changes. Keep will be active immediately. To Exit the Single mode and stop sending press the Up button.

The TEST:TRANSMIT:ALL will send a specific value (or level) to all of the channels and has the same functionality as the Single mode described above.

The TEST:TRANSMIT:GROUP will send any value (or level) to any channel with the ability to Save, Store, and Snap an incoming signal, and then Edit any of these values. In this mode, set the channel levels by using the buttons as described above or press the More button to access the Snap, Save, and Load menu or press Shift More to open a sub menu and press the Packet button to setup the Start code and Length (packet size) as described above.

To load a preset (1-10) navigate to the Load menu and scroll Up or Down to select the Preset to load. The values are immediately loaded and are sent (transmitted). Edit any of the values as well as the packet start code and length. Either resave as the same preset, as a different preset, or exit out of the GROUP menu to stop sending or without saving. By exiting and reentering the Group menu the Tx buffer is cleared.

To save a preset (1-10) navigate to the Save menu and scroll Up or Down to select the Preset to save. The new Tx buffer values are saved - replacing the older selected preset values. *Note - when saving data Rx and Tx are temporarily stopped and resume when finished.* To clear a preset exit the Group menu to clear/default the Tx buffer and reenter the Group mode and navigate to the save menu and save the defaults to the preset to be cleared.

By entering the snap menu the incoming DMX data (Rx) will be displayed and updated continuously until either Save, Edit, or Up is pressed. Press Save to save to a preset. Press Edit or Up to display the “snapped” values and edit them as desired.

The SETUP:MODE has three options: Unit, Output, and Display.

UNIT:VERSION will display the software version. UNIT:LCD:BACKLIGHT, and CONTRAST are used to set these respective values.

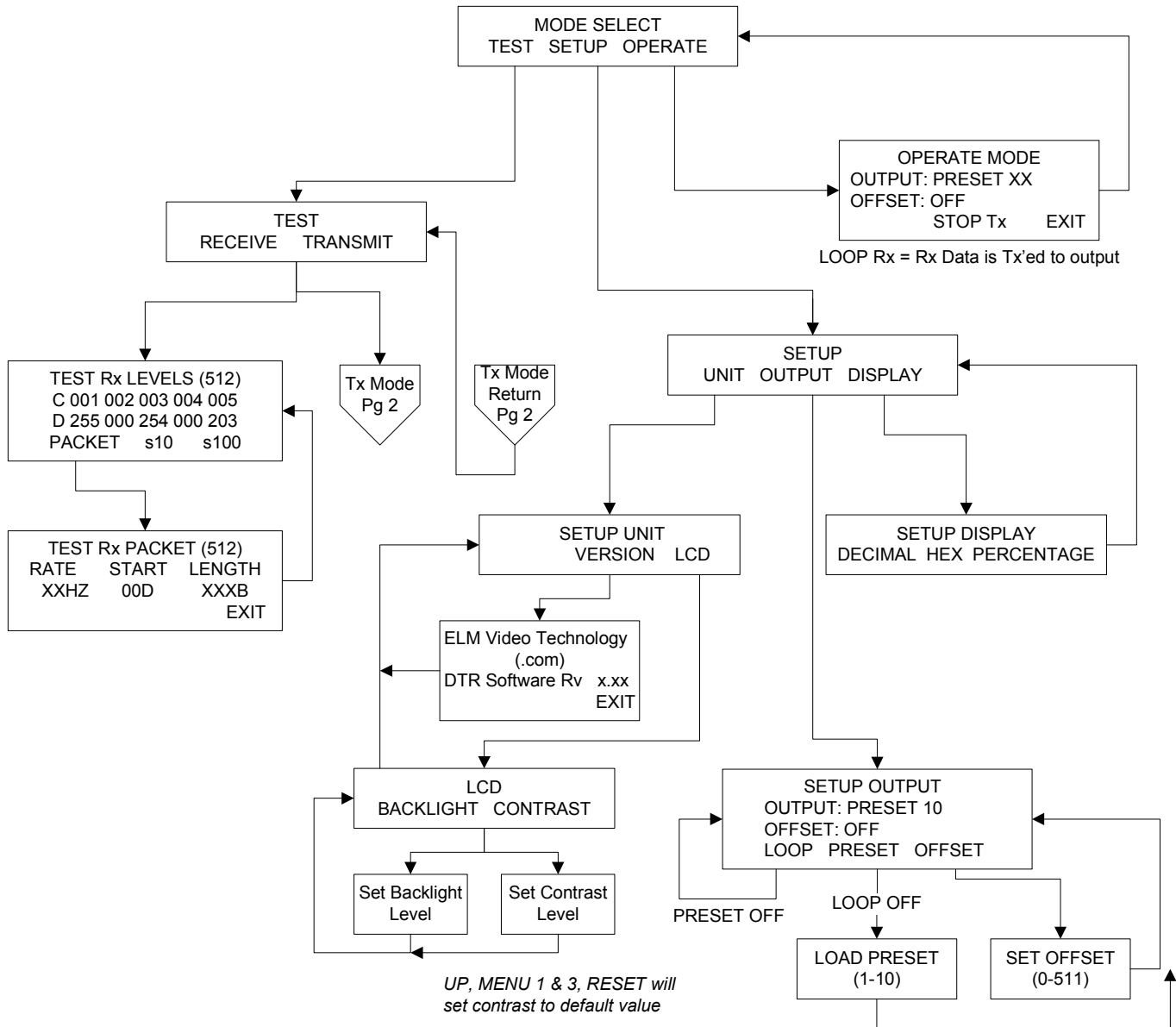
SETUP:OUTPUT sets the OPERATE Mode parameters (described in the OPERATE section).

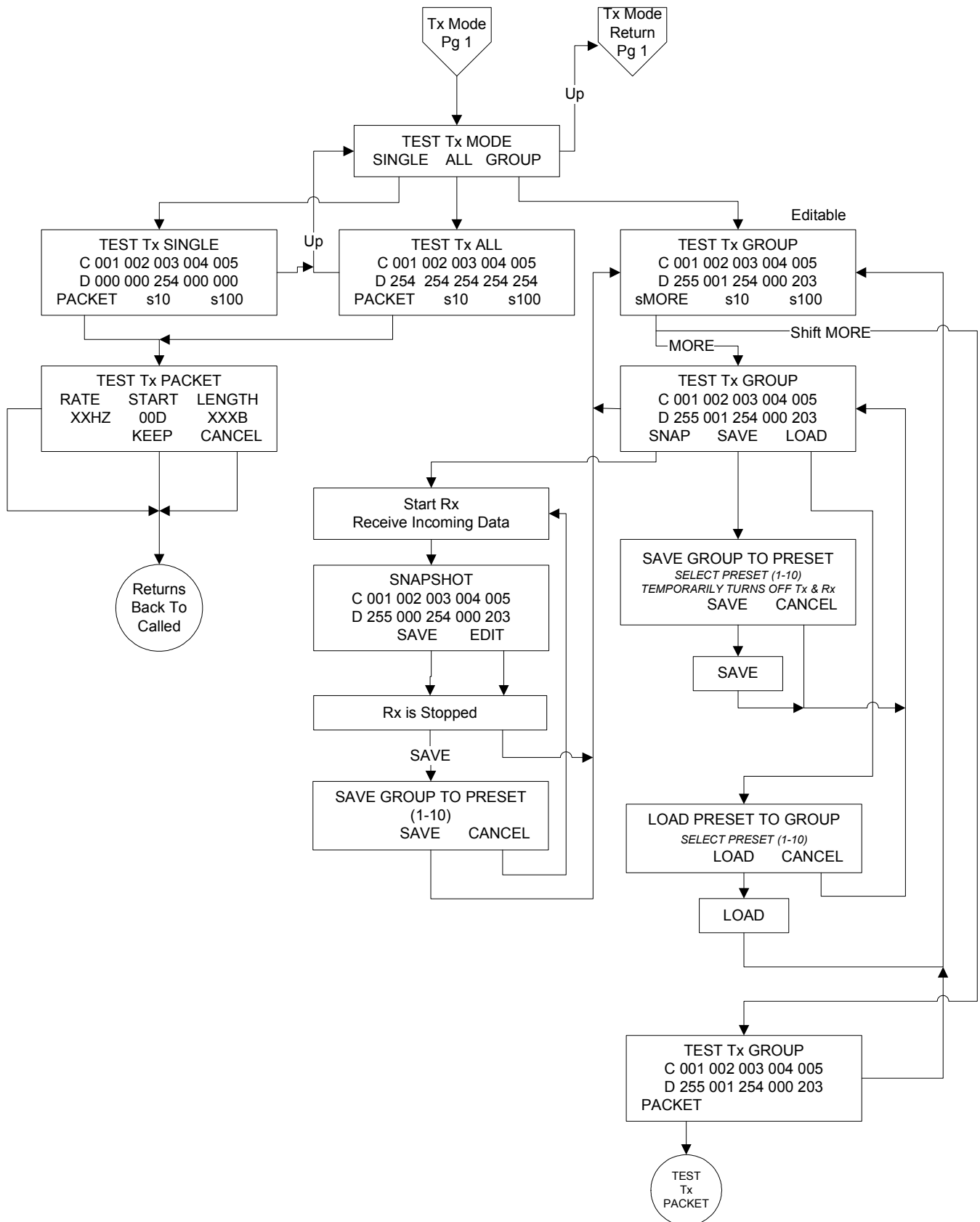
- LOOP - The incoming DMX signal is sent to the output, i.e. Rx to Tx (Optional Offset)
- PRESET - Load a preset (1-10) to be sent to the output
- OFFSET - Set to “None” for no offset, or set a value from 2 to 512. The Offset is the value of the start address channel. If the Loop option is set, the 1st channel of the received signal is sent the channel value set as the offset. If the Preset option is set, the 1st channel of the preset is sent the channel value set as the offset. For example, if in the preset option is set and the channel 1 of the selected preset has a level of 100, and the offset is set to 10, then the output channels 1-9 will be 0 and channel 10 will be 100 (channel 1) and so on. Therefore channel 1 is offset to channel 10.

The SETUP:MODE:DISPLAY sets the Rx and Tx Test mode channel level viewing options to either: Decimal, Hexadecimal, and Percentage values.

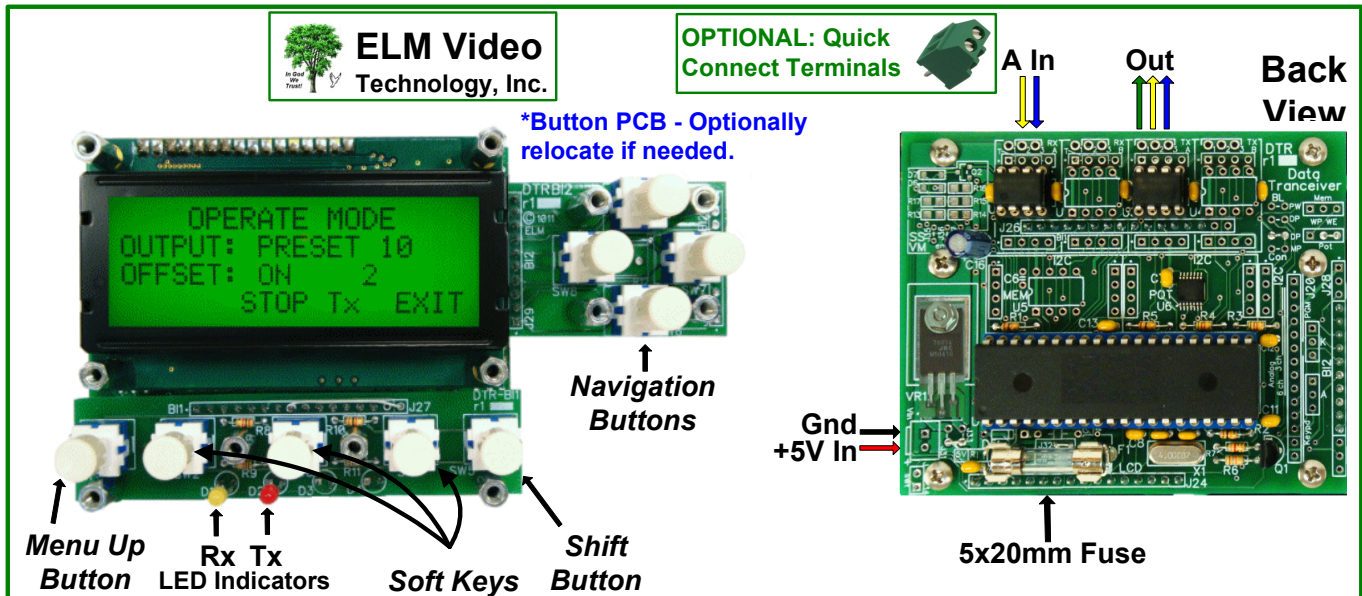
By entering the OPERATE MODE the values set in the SETUP:OUTPUT menu are used to Tx (send) DMX data out. “Output” displays either the Loop or Preset value being sent, and whether Offset is Off or On and if On the offset value. By pressing Exit, Up, or Stop Tx the output is stopped and shut off. If Stop Tx is pressed then press Resume to restart and continue the Tx output. The Operate mode and it’s settings are stored for recall, if the unit is reset it will resume in the Operate mode.

Menu Flowchart





PCB OVERVIEW

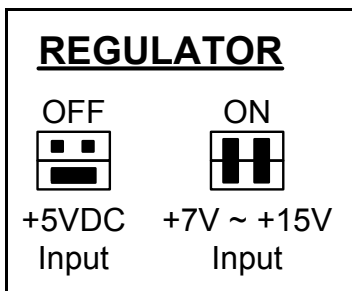


POWER INPUT SETTINGS AND CONNECTIONS

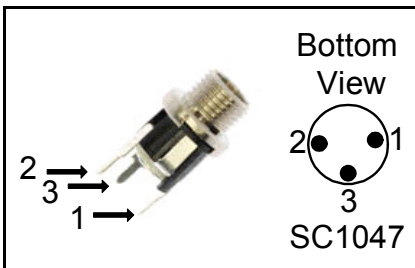
- DO NOT EXCEED THE VOLTAGE RANGE.
- DO NOT SOURCE OTHER DEVICES FROM THIS PCB'S POWER.
- INSURE THAT THE VOLTAGE SOURCE IS A REGULATED DC VOLTAGE

Set the voltage regulator jumpers according to the voltage input that will be used. If +5VDC is to be connected set the jumpers to the OFF position. This will disable the regulator and the connected power source will power the PCB directly. If a power source is connected that is in the range of +7VDC ~ +15VDC then set the jumpers to the ON position. For example, use this setting for a 6 cell battery pack with 1.5V batteries totaling 9V. **NOTE - If a voltage source greater than 9VDC is used it is recommended to remove and mount the regulator to the metal chassis**

or a heat sink to dissipate excessive heat.

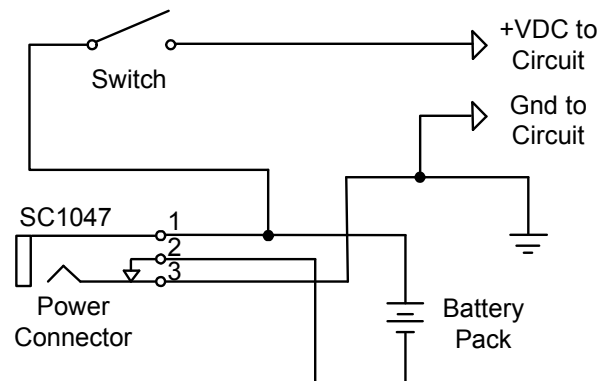


To input power from a battery pack for example, connect using this



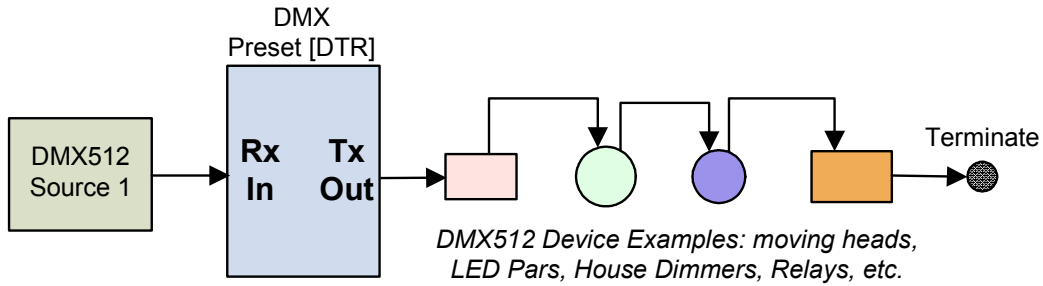
schematic. Set the LCD Back light to the lowest value necessary to conserve battery power.

DLA Suggested Battery Schematic



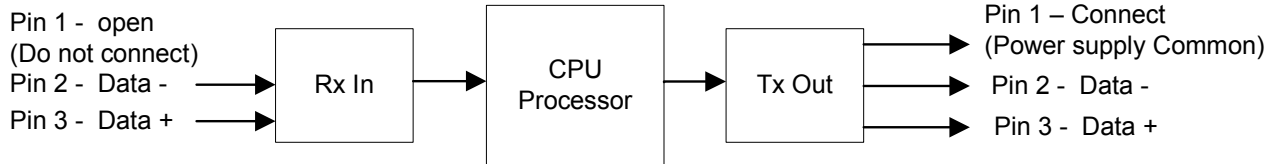
Note – Ground is switched by inserting a connector

DMX Preset 10 Analyzer [DTR] Configuration Example



DMX512 Source Examples: Lighting Board, PC w/ DMX output hardware, DMX Splitters etc.

DMX Preset 10 Analyzer [DTR] Block Diagram



SPECIFICATIONS

POWER INPUT: +5VDC regulated 5%,
If regulator option is installed +7VDC ~ +15VDC

OPTIONAL POWER

CONNECTOR: 5.5 x 2.1 x 9.5 connector - center positive

FUSE: .7 ~ 1 Amp Fast Acting 5 X 20 mm

POWER: Apx 132mA Rx and Tx Active, Back light=0,
140mA back light=25%,
161mA back light=50%,
170mA back light=75%,
173mA back light=100%,

DATA TYPE: DMX512 (250Khz)

Main PCB Dimensions: 3.35" W x 2.75" (4.9" with (4) Btn PCB attached) H x 1.62"
(4) Button PCB Dimensions: 1.65" W x 1.14" H x .94"