

## **GW-DMX1602DRV/GW-DMX1602DRV-1 HIGH CURRENT DRIVER/DECODER**

GW-DMX1602DRV-1 decoder conforms to USITT DMX512/1990 and DMX512/1986 Standards.

Addressing: Can be addressed to start anywhere within 512 channels.  
Multiple cards can be used without channel overlap.

Digital Outputs: 16 high current, high voltage on-off.  
500mA at 24vdc maximum rating.

Analog Outputs: 2 high current, high voltage.  
Adjustable gain to anywhere within 0-approximately 1 volt below the power supply.  
Maximum 500mA current capability.

Power Supply: +-15 to +-24VDC @ 9 amps maximum.

The GW-DMX1602DRV driver card is compatible with our GW-DMX1602 decoder card when purchased with the GW-DMX1602DRV-2 connector card.

The GW-DMX1602DRV driver card has adjustments for current, offset and dampening for the digital channels and gain for the analog channels.

All channels are overload and short circuit protected.



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## **GW-DMX1602DRV/GW-DMX1602DRV-1 DMX 512 DECODER**

The LOGIC SYSTEMS GW-DMX1602DRV-1 decoder card decodes a standard DMX512 signal into 18 channels and is intended to be used with the GW-DMX1602DRV card.. The card channels 1-16 are TTL digital outputs. The card channels 17 and 18 are PWM direct from the decoder IC and are filtered on the GW-DMX1602DRV card. The card can be used anywhere within the DMX 512 controller channel group. The starting address is set via dip switches. The digital output switching polarity can also be programmed. The DMX start code for the decoder card is zero. Multiple cards can be used with no overlapping of channels. In the event of a DMX512 signal loss the outputs will remain at their last state.

### **ADDRESSING**

The decoder card uses base-zero addressing. When dip switches 1 through 9 are OFF the first card channel will be DMX controller channel 1.

Example:

To set the starting address to 342 set dip switches as follows.

Set DIPSWITCH SW1 switches to the following:

SW9	SW8	SW7	SW6	SW5	SW4	SW3	SW2	SW1
256	126	64	32	16	8	4	2	1
on	-	on	-	on	-	on	-	on
-	on	-	on	-	on	-	on	-

To get the starting address add up the values of the switches that are on. We have base-zero addressing so add one more. Our starting address is  $256+64+16+4+1+1=342$ . The card will use DMX-512 channels 342 through 359

### **POWER SUPPLY**

The driver/decoder card combo requires a +15VDC to +24VDC power supply. Connect to P6. See Figure 1 for pin-out. The card can require 9 amps if all outputs are used at maximum capability.

### **DIGITAL OUTPUTS**

Connector P7 and P8 output the high current drivers. Each driver can provide a maximum of 500mADC up to the power supply voltage. The drivers are current controlled. The maximum current, offset, and dampening can be adjusted through the gain, offset, and dampening trim pots respectively, located on the GW-DMX1602DRV board. These are multi-turn adjustments. See Figure 1 for the pin-out. Although the drivers are optimized for on-off control they can be used for analog by using 0-5VDC or 0-10VDC analog control signals on P4J or P42. All adjustments are still available for tuning. Each digital channel also has a test/signal selector switch located on the GW-DMX1602DRV card. The test position applies a constant ON control signal to allow easy adjustment without having the DMX controller connected. The signal position applies the signal from the DMX decoder.

### **ANALOG OUTPUTS**

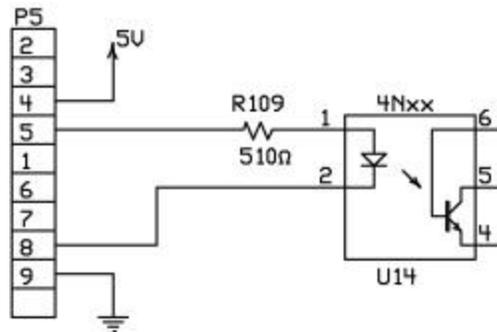
Connector P31 outputs the high current analog drivers. The analog outputs can provide a maximum of 500mADC. The voltage gain is adjustable anywhere from just a few volts to about 1 volt less than the power supply voltage. The analog output can be used as a high current PWN output by removing a jumper on the GW-DMX1602drv board. Jumper J2 and J3 for analog 1 and analog 2 respectively. See Figure 1 for pin-out.

### **DMX512 SIGNAL INPUT**

Connector P5 accepts a USITT/1986 or USITT/1990 standard DMX512 signal input. See Figure 1 for connector pin-out. Any other signal will give unknown results. Jumper J1 connects the terminating resistor and is used when the card is the last one on the cable run.

## SHUTDOWN

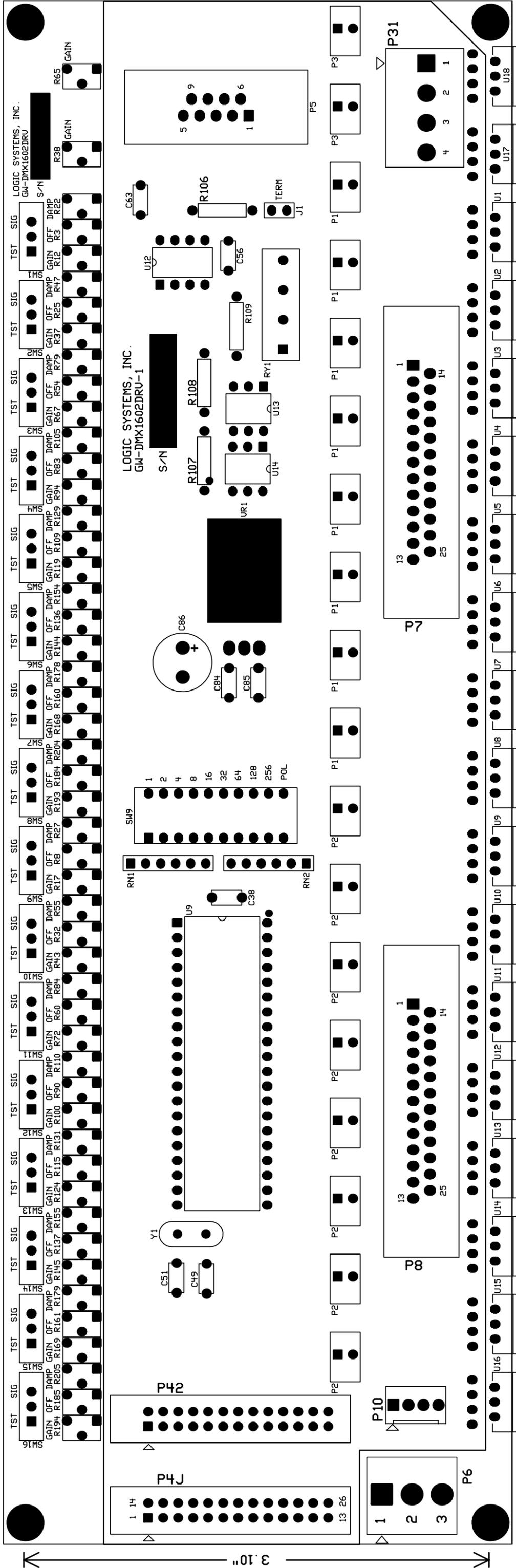
All drivers can be shutdown with a single control signal. This signal can be TTL, open collector transistor, or a relay contact closure. The control voltage is 5VDC. Connector P5 accepts the shutdown signal and is configured for your method of control by the appropriate connections on P5. See the accompanying diagram of shutdown circuit input. The shutdown is effective in all signal source modes. Shutdown occurs on a loss of signal. Shutdown is the default configuration when the card is shipped.



## CAUTION

1. The tabs on the opamps are at the V- potential. You must isolate them when mounting to the heatsink. You can individually isolate them on the heatsink or mount them direct to the heatsink and isolate the heatsink from the enclosure.
2. The channel outputs will output maximum voltage when there is no load connected. The opamp will heat up and will be hot to the touch. Use caution when handling.
3. The cards are shipped with offset at zero, dampening at zero, and current set below 200mADC.

10.10"



- P4J - CONTROL SIGNAL INTERCONNECT
  - PIN 1 - CHANNEL 1
  - PIN 14 - CHANNEL 2
  - PIN 2 - CHANNEL 3
  - PIN 15 - CHANNEL 4
  - PIN 3 - CHANNEL 5
  - PIN 16 - CHANNEL 6
  - PIN 4 - CHANNEL 7
  - PIN 17 - CHANNEL 8
  - PIN 5 - CHANNEL 9
  - PIN 18 - CHANNEL 10
  - PIN 6 - CHANNEL 11
  - PIN 19 - CHANNEL 12
  - PIN 7 - CHANNEL 13
  - PIN 20 - CHANNEL 14
  - PIN 8 - CHANNEL 15
  - PIN 21 - CHANNEL 16
  - PIN 9 - ANALOG 1
  - PIN 22 - ANALOG 2
  - PIN 10 - DRIVER SHUTDOWN
  - PIN 11 - 5V REFERENCE
  - PIN 12 - V+
  - PIN 13 - V-
  - PINS 23,24,25,26 - COMMON
- P42 - COMPATIBLE WITH GW-DMX1602 CARD  
DIGITAL SIGNALS  
SEE GW-DMX1602 DOCUMENTATION
- P10 - COMPATIBLE WITH GW-DMX1602 CARD  
ANALOG SIGNALS  
SEE GW-DMX1602 DOCUMENTATION
- P7 - DRIVER OUTPUTS  
CHANNELS 1 THROUGH 8
  - PIN 1 - CHANNEL 1 OUT -
  - PIN 14 - CHANNEL 1 OUT +
  - PIN 2 - CHANNEL 2 OUT -
  - PIN 15 - CHANNEL 2 OUT +
  - PIN 3 - CHANNEL 3 OUT -
  - PIN 16 - CHANNEL 3 OUT +
  - PIN 4 - CHANNEL 4 OUT -
  - PIN 17 - CHANNEL 4 OUT +
  - PIN 5 - CHANNEL 5 OUT -
  - PIN 18 - CHANNEL 5 OUT +
  - PIN 6 - CHANNEL 6 OUT -
  - PIN 19 - CHANNEL 6 OUT +
  - PIN 7 - CHANNEL 7 OUT -
  - PIN 20 - CHANNEL 7 OUT +
  - PIN 8 - CHANNEL 8 OUT -
  - PIN 21 - CHANNEL 8 OUT +
- P8 - DRIVER OUTPUTS  
CHANNELS 9 THROUGH 16
  - PIN 1 - CHANNEL 9 OUT -
  - PIN 14 - CHANNEL 9 OUT +
  - PIN 2 - CHANNEL 10 OUT -
  - PIN 15 - CHANNEL 10 OUT +
  - PIN 3 - CHANNEL 11 OUT -
  - PIN 16 - CHANNEL 11 OUT +
  - PIN 4 - CHANNEL 12 OUT -
  - PIN 17 - CHANNEL 12 OUT +
  - PIN 5 - CHANNEL 13 OUT -
  - PIN 18 - CHANNEL 13 OUT +
  - PIN 6 - CHANNEL 14 OUT -
  - PIN 19 - CHANNEL 14 OUT +
  - PIN 7 - CHANNEL 15 OUT -
  - PIN 20 - CHANNEL 15 OUT +
  - PIN 8 - CHANNEL 16 OUT -
  - PIN 21 - CHANNEL 16 OUT +
- P9 - DRIVER OUTPUTS  
CHANNELS 1 THROUGH 8
  - PIN 1 - CHANNEL 1 OUT -
  - PIN 14 - CHANNEL 1 OUT +
  - PIN 2 - CHANNEL 2 OUT -
  - PIN 15 - CHANNEL 2 OUT +
  - PIN 3 - CHANNEL 3 OUT -
  - PIN 16 - CHANNEL 3 OUT +
  - PIN 4 - CHANNEL 4 OUT -
  - PIN 17 - CHANNEL 4 OUT +
  - PIN 5 - CHANNEL 5 OUT -
  - PIN 18 - CHANNEL 5 OUT +
  - PIN 6 - CHANNEL 6 OUT -
  - PIN 19 - CHANNEL 6 OUT +
  - PIN 7 - CHANNEL 7 OUT -
  - PIN 20 - CHANNEL 7 OUT +
  - PIN 8 - CHANNEL 8 OUT -
  - PIN 21 - CHANNEL 8 OUT +
- P31 - HIGH CURRENT ANALOG OUTPUTS  
CHANNELS 17 AND 18
  - PIN 1 - ANALOG 1 OUT -
  - PIN 2 - ANALOG 1 OUT +
  - PIN 3 - ANALOG 2 OUT -
  - PIN 4 - ANALOG 2 OUT +
- P1,P2 - DRIVER OUTPUTS INTERCONNECTS  
NO USER CONNECTION
- P5 - DMX SIGNAL, DRIVER SHUTDOWN
  - PIN 1 - DMX SIGNAL NON-INVERTING
  - PIN 2 - DMX SIGNAL INVERTING
  - PIN 6 - DMX SIGNAL COMMON
  - PIN 4 - 5VDC OUT
  - PIN 5 - SHUTDOWN POSITIVE INPUT
  - PIN 8 - SHUTDOWN NEGATIVE INPUT
  - PIN 9 - COMMON
- P6 - POWER SUPPLY
  - PIN 1 - V+ (+15 TO +24VDC)
  - PIN 2 - COMMON
  - PIN 3 - V- (-15 TO -24Vdc)

FIGURE 1