

# APPLICATION NOTE

## SHARING INTELLIGENT SOLUTIONS

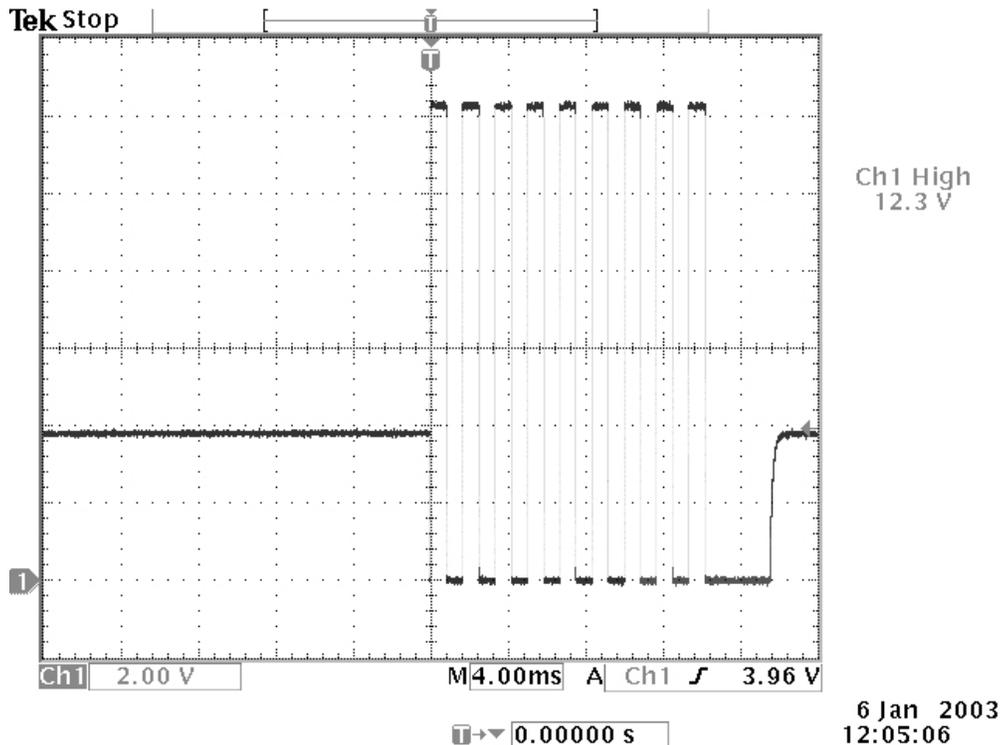
**KEY WORDS:**

<b>Title:</b>	DSI Communications
<b>Products Applicable:</b>	L5508DSI, 5502DAL

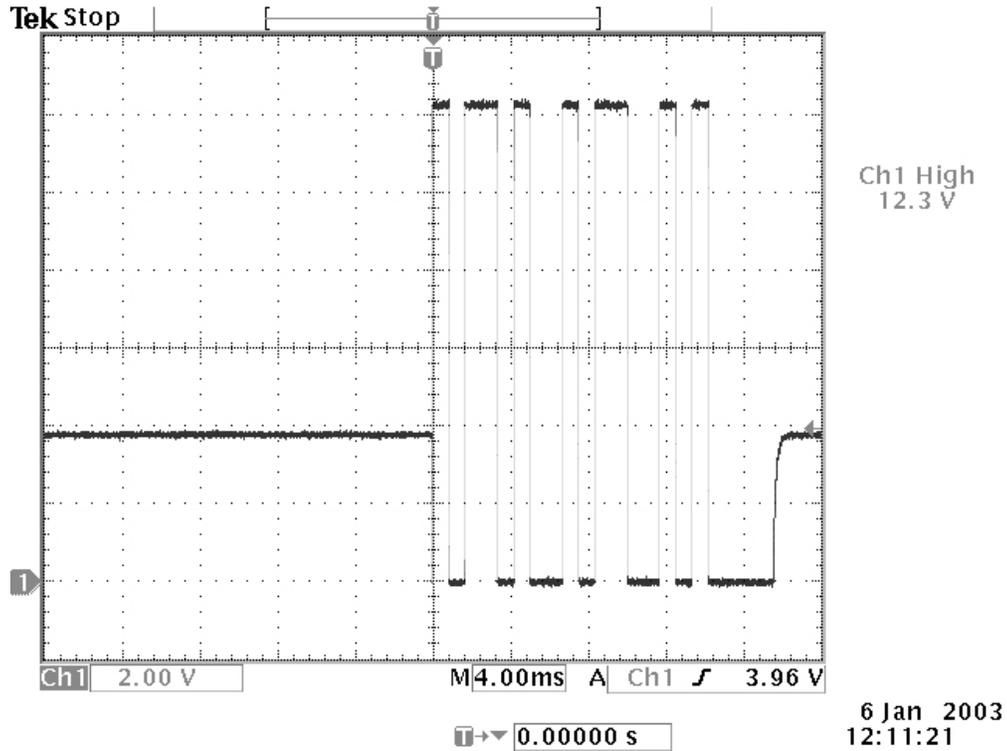
Many questions get asked with regards to DSI and DALI. The fundamental difference between the two is that DSI is actually a protocol, where DALI is a functioning system that incorporates the DSI protocol. DSI was the predecessor to the DALI system.

Although the DALI system uses the DSI protocol, it cannot be interfaced with a DSI ballast. On the other hand a system using DSI cannot be interfaced with a DALI ballast. The ballast must match the system.

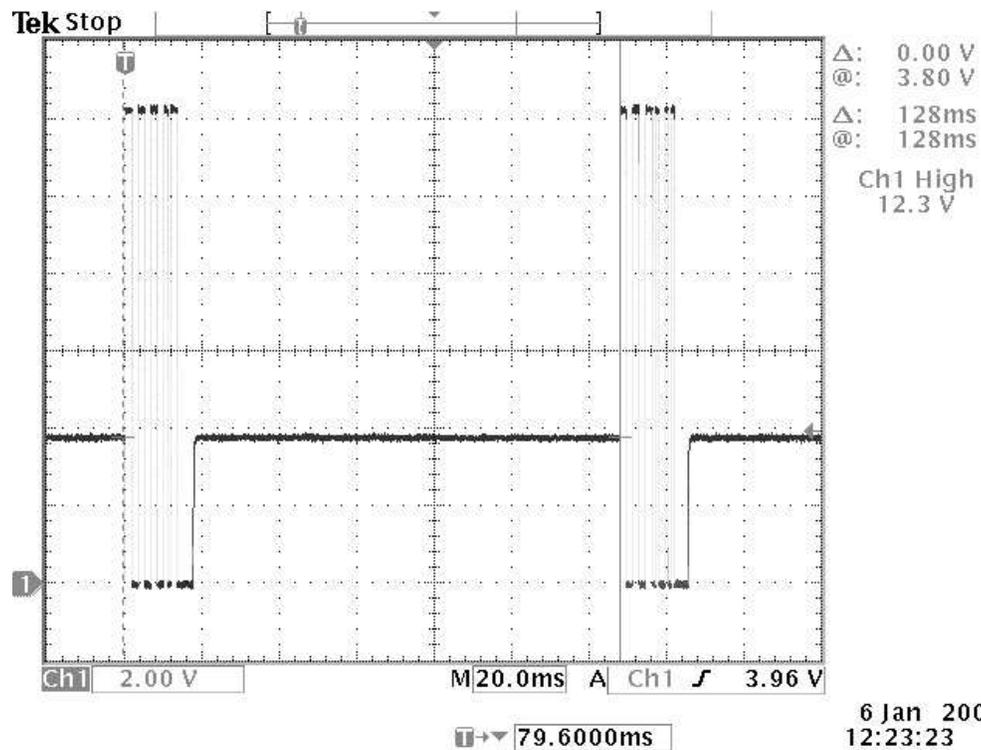
The typical signal for a DSI ballast is roughly a 9 Bit AC component of 12 Vp-p with a quiescent DC voltage of roughly 4V. The AC component (mark space ratios) determines the level of dimming for the ballast. The DC component determines the DSI channel status (as shown on the status tab in the DSI GUI). Below is the signal from a DSI ballast when the load is off.



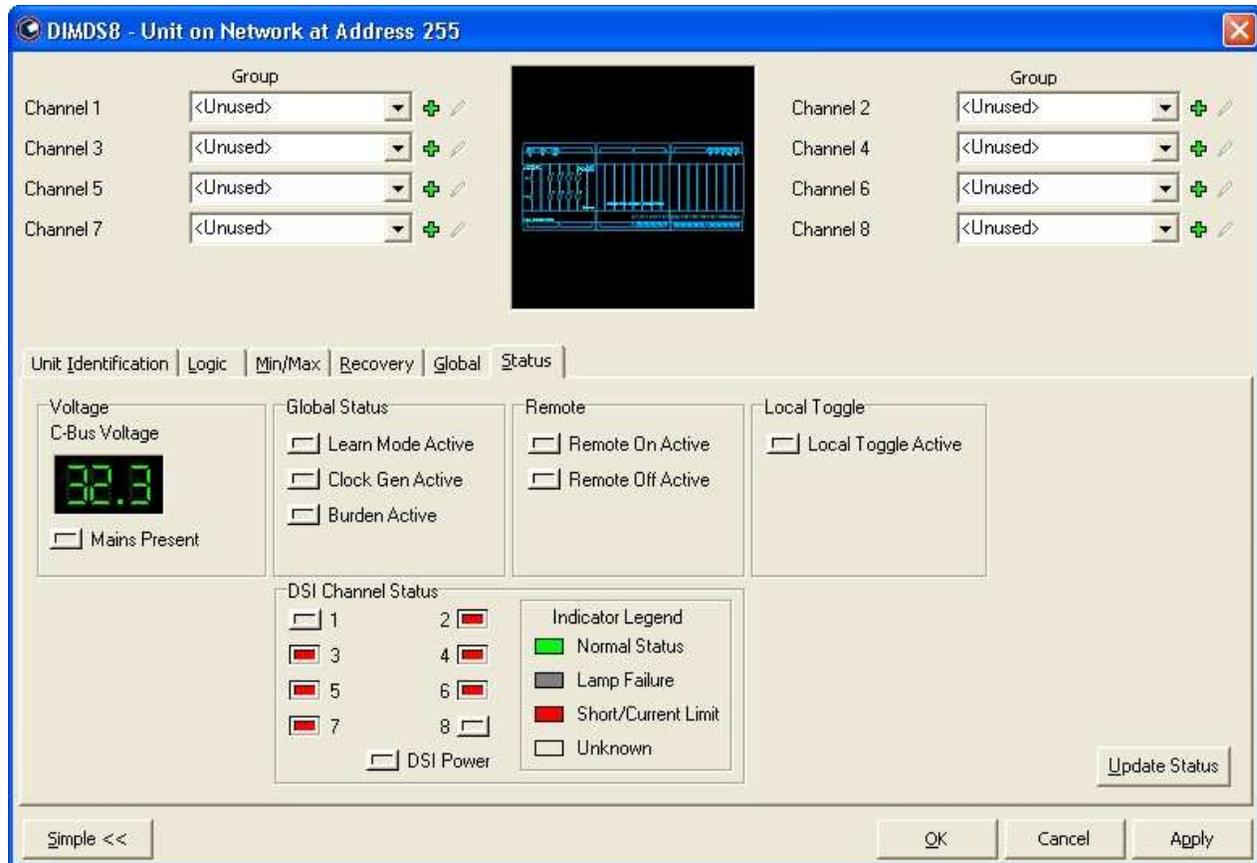
You will notice in the figure directly below, the spacing between the AC voltage changes as the dimming level changes. This is roughly about the 50% mark (visually from the fluoro).



The waveform is sent from the ballast to the DSI unit in a period of roughly 128ms. This is shown in the figure below.



The DSI ballast allows for Error Checking. The DSI output unit can only report error messages to the C-Bus software (it is unable to transmit error messages onto the bus). Therefore in the status tab on the DSI GUI, the state of the DSI channels may be viewed as shown below.



To use the GUI click on the Update Status button and the DSI Channel Status indicators will light up. So see what the respective coloured indicators are, click on the legend button. This allows the user to determine: -

- Normal Status
- Short / Current Limit
- Off or Disconnected
- Lamp Failure
- Other Failure
- No Status Reported

These 6 states are all determined by the DC quiescent voltage level. As mentioned previously, the nominal voltage is 4V.

## **Technical Support and Troubleshooting**

For technical assistance call: 1300 722 247 (Australia)  
0800 888 219 (New Zealand)

CIS web site: <http://www.clipsal.com/cis/>

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