XTBA DMX TO DALI CONVERTER – PCB CARD

XTBA

35 Fernleigh Road London N21 3AN
☎ +44 (0)208 882 0100 ▤ +44 (0)208 882 9326
e. mail dmx@xtba.co.uk   www.xtba.co.uk.

Product #09402 - Software DALIS_14 or later

XTBA DMX/DALI CONVERTER
Software DALIS_14 or later

The XTBA DMX/DALI card will convert up to 64 channels of DMX to DALI, the DALI protocol limit. The single board provides a simple and low cost solution for DMX to DALI interfacing and only requires an external transformer or PSU and an XLR. The DALI output is short circuit protected to prevent accidental damage.

In normal operation the red power LED will be lit. If valid DMX is being received and the address is set between 1 and 512 the green data LED will be lit. If the DMX address switches are out of range the data LED will flash (except in special functions see below). The starting address of the DMX channels to be converted is selected via the address switches 1 – 512.

Manual mode – 6**
Manual mode will allow for installation testing and fault finding without the need for a DMX input.

If the hundreds address switch is set to six the card will enter manual mode, provided that the tens and units are set within range (1 to 64). If the tens and units are out of range the green LED will flash quickly to indicate an error. If DMX is present it will be ignored. The channel to be control LED is selected via the tens and units address switches between 1 to 64. In this mode the green LED will flash slowly and the selected channel will be set to full.

 Power up options
The following options are only available when the address switches are set before the unit is powered up. This prevents the options being accidentally entered during normal operation. Setting the address switches beyond 512 when the unit is powered will have no effect, but the green LED will flash to indicate an invalid address.

DALI CURVE OFF – 7**
Output Curve
Due to the non linear nature of a DALI ballast the first 40% of the input level has little or no effect on the light output. To give a more linear output with DMX the DMX/DALI card has a software look up curve table to give greater control during any fades or level setting.

By setting the hundreds address switch to 7 (the tens and units are ignored) and powering up the unit the internal lookup table is turned off. This will then convert DMX directly to DALI without the curve profile.

DALI Data Length – 8**
Due to the relatively slow data update rate of DALI against DMX the length of the DALI packet can be shortened – increasing the DALI data refresh speed if less than 64 channels are being used. The number of channels transmitted can be altered by setting the hundreds address switch to eight and the number of channels to be transmitted set using the tens and units address switches. The card is then powered up. The number of DALI ballasts transmitted is then stored in non volatile memory.

DEFAULT MODE - 000
Setting the address switches to 000 on power up will reset the unit to full 64 channel operation, curve set on and store this setting.

Programming mode - 999
On power up if the all three address switches are set to nine (999) the card will enter program mode and the power and data LEDs will alternate. This mode can only be entered <u>on power up</u>.

In this mode the red and green LEDs will alternate to warn you are in programming mode.

Once powered up the tens and units address switches can then be set to the ballast address required – between 1 through 64. If the address is in range the green data LED will turn off and the red LED will flash.

By turning the hundreds address switch from 9 to 8 any ballasts attached to the DALI output will be programmed and the green and red LEDs will alternate three times. By switching the hundreds address switch back to 9 the next ballast can connected and then programmed – by setting the hundreds address switch back to 8. This mode allows multiple ballasts can be programmed before installation simply by connecting DALI data to them with the card in programming mode.

This might seem a little cumbersome but hopefully it ensures that a finished installation can not be accidentally reprogrammed.

<u>NOTE</u>
This operation needs to be carried out on individual ballasts prior to installation. Entering this mode when all the ballasts are connected will set all the connected ballasts to a single address – which was probably not the idea! For this reason this function is also only available following power up of the card. Setting the address switches to 999 during normal operation will have no effect.

Any ballast connected will be reset back to default values and then programmed as follows:

Ballast address = set from the tens and units address switches
No max or min levels
System failure level = 0
Power on level = 3%

Treatment of channel zero
The DALI standard offers a ballast address range between ballast 0 and 63
(64 ballasts in all). DMX has no address zero so it would be unable to talk to
any ballast with address zero. So in order to keep the numbering simple
(honest!) any ballast programmed as 64 will in fact be programmed as ballast
address zero. So when DMX channel 64 is received by the card its level is
converted and transmitted to DALI address zero.
This all sounds a little potty but once the system is programmed and
instalLED it will be invisible to the user and does give the full 64 channel
range.

Output Monitor
The DALI output is monitored by the micro and if a short is detected will turn
off the output. The red power LED will flash to indicate a problem. The system
will try to restart the output until the short is removed.

PIN OUT – Pin 1 left of connector next to small capacitor

PIN	FUNCTION
1	DALI OUT Plus
2	DALI OUT Com
3	PSU Common
4	AC In
5	AC In
6	DMX Com XLR Pin 1
7	DMX minus XLR Pin 2
8	DMX plus XLR Pin3

For 15 DC supply connect pin 3 as common and pin 4 as DC in.

Specifications
PCB Card Size = 81mm x 48mm. Clearance height = 25mm.
DMX Input = DMX 1986, 1990.
DALI Output = 200ma @ 15 volts
DALI Input (data return) = not used as DMX can not issue commands.
Input = 15 volts DC or 12volt / 6VA transformer

Product #09402 - Software DALIS_14 or later