

# **XTBA SMART SPLITTER VIEW / VSS**

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# **XTBA**

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## **XTBA SMART SPLITTER VIEW / VSS**

The XTBA SMART SPLITTER VIEW is a single input, five output data splitter with loop through, isolation and buffer amplifiers designed for use with lighting/moving light controls using USITT DMX512 (1990/1986) protocol. In addition to the five outputs the unit also has a buffered data loop through with relay override. So in the event of power failure data will still pass through the unit to data through output.

The five outputs are fully opto isolated and buffered and have line input protection for over voltage on the inputs.

In addition to the splitter functions the View is fitted with a 2 line 20 character VFD (vacuum fluorescent display) which allows the user to view channel levels, view DMX parameters, transmit DMX, check the outputs are terminated and alter the splitter's options menu.

### **SYSTEM OPERATION**

#### **DISPLAYS**

The Smart Splitter View will display the following.

MAINS ON SWITCH will be lit when the unit is powered and switched on.  
POWER ON - via the red LED.

Shows that the on board power supply is active and the processor is running.

DMX IN - via the green LED. Lit when valid DMX received.

In parameters mode the LED will fast flash if an error is detected. – see parameters. In hold last frame the LED will flash – see User Options. In transmit the data LED will flash.

#### **VFD Display Operation**

On power up the Smart Splitter View will display (following the start up message) the Termination Status screen – unless in Smart Fix, see section below. Pushing the Function key will loop through the View's display options. The data passing through the splitter is unaffected in any of the menus or functions except (as you might expect) transmit and Smart Fix.

#### **Main Function Key Loop**

Receive → Termination Status → Parameters → User Options → Transmit DMX  
→ Smart Fix →

To the right of the screen the three input buttons control what the screen will do.

Function	Change function
Left Arrow	Scroll left
Right Arrow/ Yes	Scroll right / yes to activate some functions

Pushing the Left button in receive mode sends the display counting to the left. Pushing the Left key once will give one channel movement to the left. Holding it down will cause the screen to scroll until the button is released. Unsurprisingly the Right does the same but in the other direction.

The channel numbers will wrap around in either direction from 1 to 512 going left and 512 to 1 going right. Pushing both Left and Right keys simultaneously will set the display back to channel one.

In receive mode data can be viewed by using the left and right keys. The VFD screen displays channel numbers on the top line and channel levels on the lower line. On the lower left side of the display the View's mode is displayed in this case RX (for receive only) followed by % or D to show percent or decimal display. If hold last frame is selected 'h' will appear following CH: on the upper line.

### **Termination Status**

The Smart Splitter View / VSS is equipped on each output connector with a line monitoring system that checks the state of the outgoing data line and displays the line condition. The display monitoring will operate with or without data on the DMX input and irrespective of cable length.

The screen displays the channel outputs on the top line and the line status on the bottom line in the following way.

??? There is no output connected or the output is not terminated  
TER The output is terminated  
ERR The line is double terminated  
OVR The output is overloaded or shorted out

In other functions (except User Options and Smart Fix) the outputs are checked for overload errors every 5 seconds. If an error is detected OL will appear in the top left of the screen in receive and transmit modes and as OVL in the parameters status window. Switching to the Termination Status window will tell you which channel has the error.

### **Parameters Functions**

In Parameters Mode the display is changed to display DMX timings and values. The top line of the display shows what is being measured the figure below is the value, as follows:

BRK	DMX Break Time in micro seconds (us)
MAB	Mark after break time in micro seconds (us)
SCD	Start code in decimal
DIM	Number of channels

SYS This will display OK all of the above are within the limits of DMX. If the View receives data that is outside the DMX512 specification the display will change to ERR.

When the SYS parameter shows ERR by pressing the right YES key, ERR will be displayed below the parameter with the error. If an error is detected when in the parameters display the green data LED will fast flash. Note DMX512 that is outside the specification will still be passed through the Smart Splitter View as the data is unaltered by the splitter.

### User Options

Pressing the yes key when User Options is displayed enters the User Options display. This display allows the level display in Receive to be either percent or in decimal. Hold the last frame on data loss or stop output. Automatically switch back. Store settings on power down and blank the screen after five minutes.

On entering the screen will display the following:

<b>D→%</b>	<b>HLF</b>	<b>MAN</b>	<b>DIS</b>	<b>STR</b>
<b>%</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

This screen shows the state of the user options on entry. Options not set are shown as NO. Set options shown as YES. To alter any of the user options pressing the left key will drop down to the first menu. Pressing the yes key in each option will toggle the function.

Options as follows:

**D→%** Display in decimal (D) or (%) in the receive display.

**HLF** If set YES - In the event of incoming data loss, hold the last correctly received DMX pass and continue to output. If this function is set then 'h' will appear following the CH: in the receive screen.  
If NO – Do not output data on data loss and turn off output.  
**Hold last frame is only active if the View is in the receive mode.**

**MAN** If set YES - When hold last frame is active if DMX data is lost and then returns, do not switch back until prompted by pressing the Function Key. In this mode if data is lost and the View is in the receive screen the screen will change to SENDING LAST DMX / FUNCTION TO ESCAPE and the data LED will flash as the View is now transmitting the last valid DMX frame.

If set NO - When hold last frame is active if DMX data is lost and then returns, automatically switch back to allow the incoming data to pass through the unit.

If data is lost and the unit is set to the receive display the screen will change to SENDING LAST DMX / AUTO RECOVER SET and the data LED will flash as the View is now transmitting. To escape press the function key which will return to the RECEIVE menu.

**DIS** If set YES – The display will bank after 5 minutes. The display can be re enabled by pressing any of the three keys.  
If set NO – The display will remain on.

**STR** If set YES - Store settings in memory on power down and restore on power up.  
If set NO - Do not store settings on power down, default settings on power up.

**Note** User Option settings only take effect when the option menu is exited by pressing the function key back to the receive menu screen.

### **Transmit DMX**

Pressing the YES key when transmit DMX is displayed will prompt 'ARE YOU SURE' on the display. Pressing FUNCTION will loop back to receive, pressing the YES key again will enter the transmit screen. TX will be displayed in the lower left of the screen and the green data LED will flash.

All 512 channels can be controlled using transmit. The first channel on the left of the screen can be selected by using the left and right keys and this channel will be the one being controlled. To alter the level press the FUNCTION key – the YES key will increase the level, the left key will decrease the level.

Once the FUNCTION key has been released the next channel can then be selected using the left or right keys.

To exit from Transmit DMX all three buttons need to be held down and released. The Smart Splitter View will then go back to the RECEIVE menu. On exit the transmit memory is cleared.

### **Smart Fix/Retime DMX**

Pressing the Yes key in the Smart Fix menu will enter the Smart Fix sub menu. Pressing the left key will cycle through the Smart Fix options. Pressing the Yes key will enter the function. The Smart Fix facility is to allow some incompatible DMX systems to hopefully talk to one another. The incoming DMX (however rough or odd it may be) is stored into memory and a new DMX frame transmitted with different timings. To escape from Smart Fix press the Function key.

Transmitted parameters as follows:

Send Fast DMX - Break = 100us, Mab = 10us, IBT = 9us, updates = 42 p/s  
Send Lazy DMX - Break = 122us, Mab = 34us, IBT = 30us, updates = 30 p/s  
Send Slow DMX - Break = 122us, Mab = 44us, IBT = 48us, updates = 24 p/s

Hopefully one of the three types of DMX will allow the systems to communicate. If input data is disconnected the output will also stop transmitting rather than holding the last frame and the display will change to 'NO DMX TO RETRANSMIT'. If DMX returns the unit will switch back into transmit mode.

### **NOTE**

If the Smart Splitter View is turned off when in Smart Fix mode, on power up the unit will automatically return to the Smart Fix mode it was last in. This allows the unit to continuously translate 'duff' DMX without user input.

### **Screen Brightness**

The brightness of the VFD display can be altered to 1 of 4 levels. This is not a menu option but is entered during power up. Once the unit is powered up pressing and holding the FUNCTION key during the copyright message will enter the screen brightness menu. With the FUNCTION button still held down pressing the YES button will cycle through the four levels of brightness. Releasing the FUNCTION button will set and store the screen brightness.

### **Installation Option**

The Smart Splitter View is fitted with an internal switch option to disable the hold last frame facility. When the hold last frame is disabled the user options screen will display **n/a** under **HLF** and **MAN** and the option to change HLF or MAN in user option the menu is not available.

To set this option. Turn off the power. Remove the six lid fixing screws to remove the lid. The option switch is positioned on the front of the small display card next to the blue connector. With the switch set towards the edge of the PCB the hold last frame functions are disabled.

### **POWER SUPPLY**

The mains input to the transformer is via a 2A a/s fuse and the transformer may be strapped to 120 volt operation via on board links. A spare fuse is provided in the input connector block on the rack unit.

### **19" RACK MOUNTING**

The XTBA Smart Splitter View is provided with a pair of 'ears' for fitting into a 19" rack frame. The ears are fitted to the unit by removing the two screws on either side at the front of the unit. The stick on rubber feet (used when the unit is free standing) will need to be removed from the underside of the unit.

## Technical Specifications

Dimensions 230/270mm inc.front handles x 430mm x 32mm  
Weight 4.0 Kg  
Power 190/250V AC Nominal 2A 240V AC  
Data Received DMX512 1986/1990  
Data Transmitted In TRANSMIT DMX  
Break 95us, MAB 14us, 44 updates per second.

Pin Configuration Pin 1 Common, Pin 2 minus data, Pin 3 plus data.  
Pins 4+5 not connected.

## General Information

**This product may only be used for controlling dimmers and moving lights. It must not be used in DMX512 applications for stage machinery or pyrotechnics. Using the product out of these specifications will remove all responsibility from the supplier.**

## CE Declaration of conformity

XTBA declares that the following equipment meets the requirements of the EMC Directive 89/366/EEC.



WEE/FC2753ZS