



**Television
Systems Limited**

TallyMan

THE ONLY TALLY SYSTEM YOU'LL EVER NEED

**The TSL Tally and
UMD Configuring Program**

Displays: UMDs and IMD

(In Monitor Display)

***– this section is intended to be read in conjunction with the
Introduction***

Television Systems Limited.
Vanwall Road, Maidenhead, Berkshire, SL6 4UB
Telephone +44 (0)1628 676200, FAX +44 (0)1628 676299

Safety

Unless otherwise stated TSL equipment may be installed at any angle or position within an operating temperature range of 5° - 30° C .

All TSL equipment conforms to the EC Low Voltage Directive:

EC Low Voltage Directive (73/23/EEC)(OJ L76 26.3.73)(LVD). Amendment: (93/68/EEC) (OJ L220 30.8.93).

In all cases the frame of the equipment must be earthed on installation.

Warranty, Maintenance And Repair

All TSL equipment is guaranteed for one year from the date of delivery to the customer's premises. If the equipment is to be stored for a significant period, please contact TSL concerning a possible extended warranty period.

Failure during warranty

If any TSL product should fail or become faulty within the warranty period, first please check the PSU fuses.

All maintenance work must be carried out by trained and competent personnel.

If equipment has to be returned to TSL for repair or re-alignment, please observe the following overleaf:

Technical support information

E-Mail address: support@televisionTM1s.ltd.uk
Telephone Support Number for the UK and Europe: +44 (0) 1628 676200
Telephone Support Number for the USA only: 1 877 591 2108

TSL Returns Procedure

Please telephone +44 (0)1628 687200 (Fax: +44 (0)1682 687299) and ask for Sales who will provide a Returns Number. This will enable us to track the unit effectively and will provide some information prior to the unit arriving.

For each item, this unique Returns Number must be included with the Fault Report sent with the unit.

A contact name and telephone number are also required with the Fault Report sent with the unit.

Fault report details required.

- Company:
- Name:
- Address:
- Contact Name:
- Telephone No:
- Returns Number:
- Symptoms of the fault (to include switch setting positions, input signals etc):

Packing

Please ensure that the unit is well packed as all mechanical damage is chargeable. TSL recommends that you insure your equipment for transit damage.

The original packaging, when available, should always be used when returning equipment..

If returned equipment is received in a damaged condition, the damage should be reported both to TSL and the carrier immediately.

Year 2000 Conformity Requirements

This product conforms to the following rules:

- | | |
|--------|--|
| Rule 1 | No value for the current date will cause any interruption in operation. |
| Rule 2 | Date based functionality will behave consistently for dates prior to, during and after the Year 2000. |
| Rule 3 | In all interfaces and data storage, the century in any date is specified either explicitly or by unambiguous algorithms or by inferencing rules. |
| Rule 4 | The Year 2000 is recognised as a leap year. |



EC DECLARATION OF CONFORMITY

Application of Council Directives Nos:
EC Low Voltage Directive (73/23/EEC)(OJ L76 26.3.73)(LVD).
Amendment: (93/68/EEC) (OJ L220 30.8.93).
Conformity Standards Declared:
EN60950

EMC Directive: 89/336/EEC, Amended 92/31/EEC.
Conformity Standards Declared:
EN 50081-1 (inc. EN 55022), EN 50082-1

Manufacturer's Name: Television Systems Ltd
Manufacturer's Address: Vanwall Road
Maidenhead
Berks SL6 4UB

Type of Equipment: Under Monitor Displays

Model No: UMD-S8C, D8C, D16C, DD8C,TD8,QD8,TS8 & QS8

Part Number: TSLP- UMD-S8C, D8C, D16C, TD8,QD8,TS8 & QS8

Date CE Mark Affixed: 2000

I, the undersigned, declare that the equipment specified above conforms to the quoted Directives and Standards.

Place: Maidenhead, England

Signature: _____

Date: _____

Print: J F PINNIGER

Position: PRODUCT MANAGER

Contents

Section A **Dynamic UMD Displays**

Section B **Static UMD Displays**

Section C **Time Code Displays**

Section D **In Monitor Displays – IMD System**

Section E **Thomson Displays**

Section F **Amazon Displays**

Important notes:

It is very important that the correct display is entered into the TallyMan program so that the actual hardware matches the UMD type in the TallyMan display.

If this is not done, for example a Static S8C display is entered as a Dynamic 8, the tallies will behave incorrectly or will not be displayed at all.

The displays cannot be “daisy-chained” but can be connected in parallel using a RJ45 Splitter box.

Section A

Dynamic Displays

Contents

- 1.0 Introduction
- 2.0 Triple Colour Displays
 - 2.1 The *Static* Mode – special orders
 - 2.2 The *Dynamic* Mode
 - 2.3 Configuration
 - 2.3.1 Selecting the menu function - overview
 - 2.3.2 Changing the Address - <<Addr 000>>
 - 2.3.3 Changing/Swapping the Left/Right Display - <<Swap 0>> -.
 - 2.3.4 Changing the Justification - <<Just C>>
 - 2.3.5 Changing the Mode - <<Mode 1>>
 - 2.3.6 Changing the display and tally colours - (e.g. <<Dcol NTL>>)
 - 2.3.7 Changing the protocol - <<Ptc1TSL1>>
 - 2.3.8 Changing the Message - <<Message>>
 - 2.3.9 Changing the Brightness - <<Bright 2>>
 - 2.3.10 Mode 5 - the Count down/Count up Assign Protocol
- 3.0 Green only Displays
 - 3.1 The Static Mode – special orders
 - 3.2 The Dynamic Mode
 - 3.3 Configuration
 - 3.3.1 Introduction
 - 3.3.2 Changing the Message - <<Message>>
 - 3.3.3 Changing the Brightness - <<Bright 2>>
 - 3.3.4 Changing the Address - <<Addr 000>>
 - 3.3.6 Changing the Justification - <<Just>>
 - 3.3.7 Changing the Error Mode - <<Error>>
 - 3.3.8 Changing the Mode - <<Mode>>
 - 3.3.9 Selecting the Hard Reset - <<HRESET!!>>

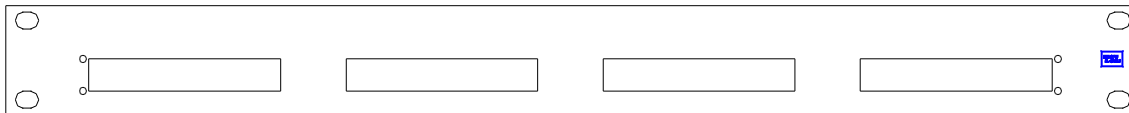
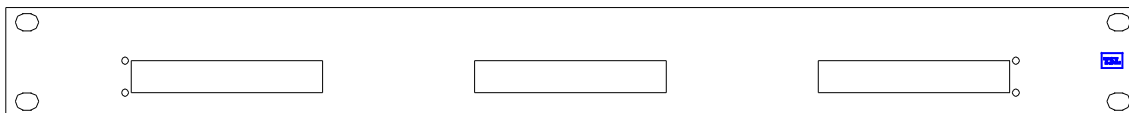
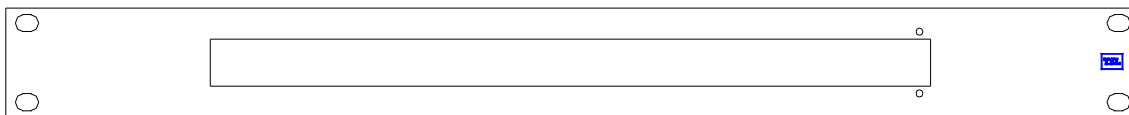
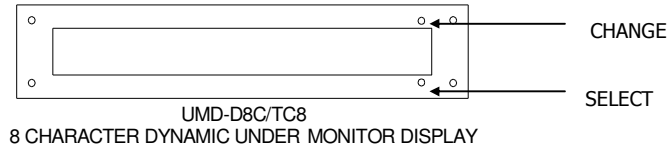
4.0 Technical Specifications

5.0 Connection Details

5.1 RJ45 Sockets

5.2 Adapter cables to connect RJ45 Displays to a D15 connector

1.0 Introduction



Note:

Current TD8 / QD8 displays have the character window set along the centre line of the display and not offset as shown above.

The Dynamic Under Monitor Display modules are part of the TSL under monitor display TM1. They are designed to operate either alone or as part of an integrated TM1. The modular approach allows a TM1 to be easily reconfigured or supplemented at a later date.

The Dynamic Under Monitor Displays are available in various hardware styles to suit particular applications. Such variations include single, dual, triple and quad displays for use with either free standing or rack mounted monitors of various sizes.

Display modules have 8 or 16 characters.

The maximum distance between the TMx (or Power Supply Unit) and a Display should not be greater than about 20 meters.

2.0 Triple Colour Displays

All displays are designed to operate from an external power source (nominal +24v DC), which is fed to the RJ45 serial connector on the rear panel.

Power will normally be provided by a TMx Controller or “stared” out from the Power Supply Unit ~ PSU-22 and a CAT 5 cable, wired pin to pin is all that is required. Both power and serial data are carried by the CAT 5 cable

When the UMD is first powered the Address will be displayed for approximately 5 seconds. Software version is V1.20.

Two modes of operation are available.

2.1 The Static Mode

The *static* mode - Mode 0 - is designed for applications where the UMD is used in a stand-alone situation. The displayed mnemonics are edited directly via push buttons on the front of the unit.

Tallies are controlled by grounding the appropriate pins on the Tally RJ45 connector on the rear.

2.2 The Dynamic Mode

When the UMD is in the *dynamic* mode (Modes 1, 2, 3, 4 & 5), the mnemonics and tallies are controlled by serial data from the TM1 Controller.

2.3 Configuration

The miniature buttons on the display are used to carry out the configuration of all 17 parameters that may be set. The display shows the parameter and the value set.

Note

Extensive tally mapping and control is provided both on the UMD hardware and in the TallyMan program.

Check tally configurations carefully if unexpected tally indications are observed – especially with split tally working. A soft reset will normalise the tally configuration.

Note that the display and tally colour set up for the DD8C can only be set for both left and right displays.

Soft and Hard Reset

Selection of the top button will call up the software version on the first press and the date on the second press.

Soft Reset

A press and hold for about 5 seconds will reset the UMD to the factory defaults for colour. The address will not be reset.

Hard Reset

A press and hold for about 30 seconds will reset the UMD to the factory defaults for colour and the address will be reset to 000.

2.3.1 Selecting the menu function - overview

All menu items are selected sequentially.

Typical Message	Function	Default
Addr 000	Address	000
Swap 0	Swaps the displays. Left(0) with Right(1)	0
Just C	Justification	Centre
Mode 1	Sets the Mode of operation	Mode 1
Dcol NT	Display colour with no tallies	Green
Dcol LT	Display colour with left tally	Green
Dcol RT	Display colour with right tally	Green
Dcol BT	Display colour with both tallies	Green
LTcol LT	Left tally colour with left tally	Red
LTcol RT	Left tally colour with right tally	-
LTcol BT	Left tally colour with both tallies	Red
RTcol LT	Right tally colour with left tally	-
RTcol RT	Right tally colour with right tally	Red
RTcol BT	Right tally colour with both tallies	Red
PtcITSL1	Sets the protocol standard	TSL1
Message?	Message	????????
Bright 2	Brightness	2

At power up, the display shows the address for approximately 5 seconds when in Modes 1 ~ 4, (Modes1 ~ 5 for the D8C and D16C).

The buttons are accessed through holes above and below the display at the right hand side of the display. A 2mm diameter tool is required such as a watchmaker's screwdriver or an opened out paper clip. The buttons are tactile, allowing the operator to feel when the switch has been changed.

The lower button is the **SELECT** button. Pressing this repeatedly will sequence through the available options in the order listed above, displaying the current default.

If it is required to make a change to the set-up, the top **CHANGE** button, is pressed and a flashing value of the option will be shown.

The **SELECT** button is used to alter the value of the option. When the value is correct, the **CHANGE** button is pressed again and the current value is saved and the next menu item will be shown. All menu changes are set according to this pattern.

If the display was in the *static* mode the message will appear immediately. If the display is in the *dynamic* mode, it will show <<**Waiting!**>> until the display receives a message for the current address as part of the normal updating procedure.

If the top button is held pressed for more than 5 seconds, the defaults for the Display will be re-loaded via the soft reset action.

Note

Colour control is available via the TallyMan program.

2.3.2 Changing the Address - <<Addr 000>>

To change the address, the **SELECT** button is repeatedly pressed until <<Addr000>> , or any other current value of address is shown on the display.

Pressing the **CHANGE** button will display the address with the first number flashing. The **SELECT** button can then be used to increment the number, or the **CHANGE** button will move the cursor to the next number. When a number has been changed, press the **CHANGE** button to save the number and move to the next number.

When the cursor has passed through all numbers the unit will check the validity of the address. The range is from 000 to 125 decimal. (This number may be limited on other communication protocols). If the address is valid, the display will revert its previous mode of operation.

If the display is in *static* mode, it will display the letters <<TSL>> the factory loaded *static* message if no other *static* message has been set. If the display is in *dynamic* mode it will display <<Waiting!>> until it gets data for its address (possibly up to 12 seconds later).

2.3.3 Changing/Swapping the Left/Right Display - <<Swap 0>> -.

16 bytes of data are transmitted to each address but a D8C display only uses the first 8 characters of the message which is potentially 16 characters long.

This facility allows the second 8 characters which would normally be displayed on the right hand side of a dual 8 character display (DD8C) to be displayed on the D8C. In the hardware set-up in TallyMan, the controlling program, the display is entered as a DD8.

To change the left/right indications, the **SELECT** button is pressed until <<Swap 0>> (or <<Swap 1>>) is seen in the display. Pressing the **CHANGE** button will display the <<Swap 0>> or <<Swap 1>> with the 0 (or 1) flashing. The **SELECT** button can then be used to toggle between the modes.

When the mode has been selected, pressing the **CHANGE** button will save the value.

Swap 0 sets the first 8 bytes of data to the LH display.

2.3.4 Changing the Justification - <<Just C>>

This mode will automatically justify the text from the serial port; it does not operate with the internal message.

To change the justification, press the **SELECT** until the display shows <<Just C>>, L, 0 or R. Pressing the **CHANGE** button will activate the options. The **SELECT** button can then be used to select the mode.

When the mode has been selected, pressing the **CHANGE** button will save the value.

2.3.5 Changing the Mode - <<Mode 1>>

This option allows the display to operate independently of the data from the TM Controller.

Six modes are available.

Mode 0 Ignores data from the TM Controller.

Mode 1 - 5 Takes data from the TM Controller.

Depending on the Mode number selected, the Error message, in the absence of serial data from the TM1 Controller, will change.

Mode 0	Ignores serial data. Shows the static message.
Mode 1	Accepts serial data. Continues to show the last dynamic message. No communications error message.
Mode 2	Accepts serial data. Displays a dot pattern in the first character.
Mode 3	Accepts serial data. Shows <<comm err>>.
Mode 4	Accepts serial data. Displays the current message but flashes.
Mode 5	(8 and 16 characters only) (8 and 16 characters only)– clock mode Addr ≥64. Custom software in the SC-11/21 is required. See Section 3.3.10

When the mode has been selected, pressing the **CHANGE** button will save the value and the next menu item will be available.

If the display is in the *static* mode, it will display the message immediately. If the display is in the *dynamic* mode the display will show <<**Waiting!**>>. A change will occur when the data for the address is sent which could be up to 12 seconds later.

Messages can be produced using the buttons on the front panel of the UMD when the display is in Mode 0 even when it is connected to a TM Controller supplying data.

2.3.6 Changing the display and tally colours - (e.g. <<Dcol NTL>>)

The display and tally colours are determined by the tally state.

The colour may be set by selecting the appropriate menu item.

2.3.7 Changing the protocol - <<PtcITSL1>>

The protocol may be changed from TSL to Probel SWP04, or to SWP06 protocol when these displays are used directly with Probel equipment.

2.3.8 Changing the Message - <<Message>>

This is only possible when the unit is in **Mode 0**.

To change the message, the **SELECT** button is pressed once and the display will show <<Message?>>. Pressing the **CHANGE** button will display the message with the first character flashing. The **SELECT** button can then be used to select the character to be displayed, or the **CHANGE** button will move the cursor to the next character. When a character has been changed, press the **CHANGE** button to save the character and move to the next character. When the cursor has passed through all characters, the display will revert to normal *static* operation.

2.3.9 Changing the Brightness - <<Bright 2>>

This is only possible with the front buttons when the UMD is in the *static* mode i.e. Mode 0. The TM1 Controller will control the brightness via software changes when the display is in the *dynamic* mode. To change the brightness, the **SELECT** button is pressed twice and the display will show **Bright** and the current value of brightness. Pressing the **CHANGE** button will show the value alternately with a cursor. The **SELECT** button can then be used to change the value and the display will change in brightness. The **SELECT** button is pressed again to save the value and the display will revert to normal *static* operation.

3.0 Green only Displays

These displays are model numbers TD8 & QD8.

These displays are designed to operate from an external power source (nominal +24v DC), which is fed to the RJ45 connector on the rear panel. This power may come from a TM1 Controller or a Power Supply Unit – PSU-22. Small TM1s could utilise an individual power supply.

3.1 The Static Mode – special orders

The *static* mode is designed for applications where the UMD is used in a stand alone situation. The displayed mnemonics can be edited directly via push buttons on the front of the unit. Tallies are controlled by grounding the appropriate pins on the RJ45 connector on the rear once the appropriate links on the LPC-1 PCB are made.

3.2 The Dynamic Mode

When the UMD is switched to the *dynamic* mode (Mode 1), the mnemonics and tallies are controlled by the TM Controller.

3.3 Configuration

3.3.1 Introduction

The miniature buttons on the display are used to carry out the set-up of all parameters. The display shows the parameter and the value set.

There are up to seven parameters that may be set:

Message	Function
Bright 2	Brightness
Addr 000	Address
Just	Justification
Error 1	Error
Mode	Mode
HRESET!!	Hard reset

At power up, the display starts in the *static* mode but will change to the *dynamic* mode if any valid serial communication from a TM1 Controller is received.

If the display is in the *dynamic* mode, only the last four options are available via the front buttons, as the message and brightness information is provided via the serial link.

The buttons are accessed through holes above and below the display at the right hand side of the display. A 2mm diameter tool is required such as a blunt cocktail stick or an opened out paper clip. The buttons are tactile, allowing the operator to feel when the switch has been changed.

The lower button is the **SELECT** button. Pressing this repeatedly will sequence through the available options in the order listed above, displaying the current default.

If it is required to make a change to the set-up, the top **CHANGE** button, is pressed and a flashing value of the option will be shown.

The **SELECT** button is used to alter the value of the option. When the value is correct, the **CHANGE** button is pressed again and the current value is saved and the display will revert to its normal mode. If the display was in the *static* mode the message will appear immediately. If the display is in the *dynamic* mode, it will show **Waiting!** until the display receives a message for that current address.

3.3.2 Changing the Message - <<Message>>

This is only possible when the unit is in **Mode 0**.

To change the message, the **SELECT** button is pressed once and the display will show <<Message>>. Pressing the **CHANGE** button will display the message with the first character flashing. The **SELECT** button can then be used to select the character to be displayed, or the **CHANGE** button will move the cursor to the next character. When a character has been changed, press the **CHANGE** button to save the character and move to the next character. When the cursor has passed through all 8 characters, the display will revert to normal *static* operation.

3.3.3 Changing the Brightness - <<Bright 2>>

This is only possible with the front buttons when the UMD is in the *static* mode i.e. Mode 0. The TM1 Controller will control the brightness via software changes when the display is in the *dynamic* mode.

To change the brightness, the **SELECT** button is pressed twice and the display will show <<Bright>> and the current value of brightness. Pressing the **CHANGE** button will show the flashing value. The **SELECT** button can then be used to change the value and the display will change in brightness. The **SELECT** button is pressed again to save the value and the display will revert to normal *static* operation.

3.3.4 Changing the Address - <<Addr 000>>

To change the address, the **SELECT** button is repeatedly pressed until <<Addr 000>> and the current value of address is shown on the display.

Pressing the **CHANGE** button will display the address with the first number flashing. The **SELECT** button can then be used to increment the number, or the **CHANGE** button will move the cursor to the next number. When a number has been changed, press the **CHANGE** button to save the number and move to the next number.

When the cursor has passed through all numbers the unit will check the validity of the address. The range is from 000 to 125 decimal. (This number may be limited on other communication protocols). If the address is valid, the display will revert its previous mode of operation.

If the display is in *static* mode, it will display the factory-set *static* message <<NEW EP2>> if no other *static* message has been set. If the display is in *dynamic* mode it will display <<Waiting!>> until it gets data for its address (possibly up to 12 seconds later).

3.3.6 Changing the Justification - <<Just>>

This mode will automatically justify the text from the serial port; it does not operate with the internal message.

To change the justification, press the **SELECT** until the display shows <<Just 0>>, **L**, **C** or **R**. Pressing the **CHANGE** button will activate the options. The **SELECT** button can then be used to select the mode.

When the mode has been selected, pressing the **CHANGE** button will save the value and the display will revert normal mode of operation

3.3.7 Changing the Error Mode - <<Error>>

This option controls if and how the display indicates a loss of communications on the serial port.

Four options are available, 0, 1, 2 and 3.

0 displays <<COMMS ERR>>,

1 displays the last message but with the first letter showing a block symbol.

2 displays the *static* message that has been set.

3 displays the current message, i.e. either the *dynamic* or *static* message.

When the mode has been selected, pressing the **CHANGE** button will save the value and the display will revert its normal mode of operation

If the display is in the *static* mode, it will display the message immediately. If the display is in the *dynamic* mode the display will show <<Waiting!>>.

A change will occur when the data for the address is sent which could be up to 12 seconds later.

3.3.8 Changing the Mode - <<Mode>>

This option allows the display to operate independently of the data from the TM1 Controller. Two modes are available.

Mode 0 = Ignore data from the TM1 Controller.

Mode 1 = Take data from the TM1 Controller.

Messages can be produced using the buttons on the front panel of the UMD when the display is in Mode 0 even when it is connected to a TM1 Controller supplying data.

3.3.9 Selecting the Hard Reset - <<HRESET!!>>

Warning

Do NOT activate this option unless it is essential to hard reset the display as it will re-set the parameters in the display to the original TSL protocol defaults for a UMD D8L. The display will then show random characters

The TSL LPCom program will need to be used to re-program the TD8 and QD8 displays to their correct set-up.

TSL will supply the program upon request.

The hard reset values are:

- Addr 000
- Disply L
- Just 0

-
- Error 0
 - Mode 1

The top button will offer the chance to exit this option: <<**No**>>. Pressing the lower button will change this message to <<**Yes**>>. Pressing the top button will return the display to its operational mode and to complete the hard reset the UMD must be de-powered and re-powered.

The TSL LCom programme will now have to be used to re-set the display to a QD8 or TD8.

4.0 Technical Specifications

Abbreviations:-	UMD-D8C	Single 8 character triple colour display
	UMD-D16C	Single 16 character triple colour display
	UMD-DD8C	Dual 8 character triple colour display
	UMD-TD8	Triple 8 character display (green only)
	UMD-QD8	Quad 8 character display (green only)
Overall Size		Wmm x Hmm x Dmm
	UMD-D8C*	174 x 38.0 x 60
	UMD-D16C	314 x 36 x 32
	UMD-DD8C	382 x 36 x 32
	UMD-TD8	483 x 44.4 x 54
	UMD-QD8	483 x 44.4 x 54
Visible Aperture Size		Wmm x Hmm
	UMD-D8C	162 x 19
	UMD-DD8C	162 x 19
	UMD-D16C	308 x 19
	UMD-TD8	82 x 13
	UMD-Q8D	82 x 13
Character Height	UMD-D8C	17mm
	UMD-DD8C	17mm
	UMD-D16C	17mm
	UMD-TD8	7mm
	UMD-QD8	7mm
Illumination Colour:	Red/Green/Amber	
	Green – single colour displays	
Tally Colour:	Red/Green/Amber	
	Red – single colour displays	
Input Voltage:	Nominal +24V unregulated	
Power Consumption:	UMD-D8C	2.5 Watts - 1PLU (typically)
	UMD-DD8C	5.0 Watts - 2PLU (typically)
	UMD-D16C	5.0 Watts -2PLU (typically)
	TD8	3.5 Watts - 2PLU (typically)
	QD8	4.0 Watts – 2PLU (typically)
Serial Interface:	RS 485	38.4k baud

* These displays will normally need to be mounted on P1 or P2 panels for fitting into a standard 1RU 19" aperture. Allow 30mm min. for cable connections.

5.0 Connection Details

5.1 RJ45 Sockets

Serial Connections

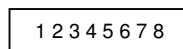
PIN	FUNCTION	DIRECTION
1	0V	GND
2	0V	GND
3	TX-	OUT
4	RX+	IN
5	RX-	IN
6	TX+	OUT
7	+24V	IN
8	+24V	IN

Parallel Tally Connections

PIN	FUNCTION
1	0V
2	0V
3	TALLY 1
4	TALLY 2
5	TALLY 3
6	TALLY 4
7	+24V OUT ONLY
8	+24V OUT ONLY

A connection to ground will light the appropriate tally or tally function.

View from the back.
Cable entry.



RJ45 Connector on the cable

These connections are capable of sinking about 110mA to ground to light external tallies. An active tally is low. A non-active tally will give a reading of +5v on the relevant pin with respect to Pins 1 and 2.

Note: Power must not be applied to the Tally connector as the fusing / safety circuits will be bypassed.

Important note concerning the Tally Out RJ45 connector

Some monitors (e.g. Sony) use a high impedance input tally circuit referenced to +24V which is connected to ground for an active tally.

The TSL UMDs incorporate 100K ohm pull-up resistors referenced to +5V on each tally output pin.

Under these condition, the current path from +24V to +5V is enough to light the tally in the monitor. A +5V level on the TSL UMD represents a tally off condition

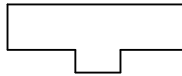
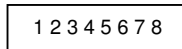
The possibility of having to use a small relay with this circuit must be considered.

5.2 Adapter cables to connect RJ45 Displays to a D15 connector

Serial Data – Serial Connector

RJ45	FUNCTION	D15M	Colours for RJ45 to D15 Adaptor
1	0V	9	Blue
2	0V	10	Orange
3	TX-	14	Black
4	RX+	1	Red
5	RX-	2	Green
6	TX+	13	Yellow
7	+24V	7	Brown
8	+24V	8	White

View from the back.
Cable entry.



RJ45 Connector on the cable

Parallel Data only – Tally Connector

RJ45	FUNCTION	D15
1	0V	9
2	0V	10
3	Tally 1 - Left	5
4	Tally 2 - Right	4
5	Tally 3 – Left (DD8C RHS)	14
6	Tally 4 –Right (DD8C RHS)	13
7	+24V	7
8	+24V	8

Notes:

1. It is recommended that the 0v/chassis connections are all connected together externally.
2. For normal use, use pins 4 and 5. Pins 3 and 6 are for ProBel-controlled units.
3. The second RJ45 connector is for parallel tally i/p or o/p control.
To switch external cue lights, the current drawn from this connection should not be greater than about 110mA. A direct connection to ground (0V) will switch the appropriate tally LED on in the display

Programming Note about the TD8 and QD8 Displays with separately addressed tallies

These Displays have separately addressed tallies. A Red tally is fitted to the left of the display and a Green Tally is fitted to the right of the display.

Enter the display in TallyMan as a Triple 8.

- Set the address on the hardware for Displays 1 and 2 as shown in TallyMan. This is done by using the recessed buttons to the right of the second display.
- The third display must be manually set to the third Triple 8 address as shown in TallyMan. This is done by using the recessed buttons to the right of the third Display.

Section B

S8C Static UMD

- 1.0 Introduction**
- 2.0 Tally operation**
- 3.0 The Legend**
- 4.0 Technical specifications**
- 5.0 Connection details**
 - 5.1 RJ45 Socket**
 - 5.2 RJ45 Tally Socket**
 - 5.3 Adapter cables to connect an RJ45 Display to a D15 connector**
- 6.0 Addressing S8C Displays**
- 7.0 Parallel tally control and connections for the S8C display**
- 8.0 Connection details for the single colour UMD S8**

1.0 Introduction

The static under monitor display module consists of red and green LEDs edge lighting a panel behind an eight character film message. This film is known as a legend. The film legend can be replaced from the front of the unit.

Power will normally be provided by a TM1 Controller or “stared” out from the Power Supply Unit ~ PSU-22 and a CAT 5 cable, wired pin to pin is all that is required. Both power and serial data are carried by the CAT 5 cable

A clear filter is placed in front of the legend in order retain it.

Tally LEDs (red) are provided to the left and right of the message area. These tally lamps can be operated independently of each other, if required.

On board voltage regulation is provided and the units are designed to operate from a nominal +24 volt supply. The usual power source is from a TM1 controller or from the TSL UMD power unit.

The connections are to an RJ45 connector on the rear of the unit.

2.0 Tally Operation

These dual colour S8C Displays have their own display type in the TallyMan configuration program (i.e. Static). Four tally allocations in the program control the tallies and the colour selection on the display. RJ45 connectors are used.

The UMD MUST be entered in the TallyMan program as a Static so that four tallies are allocated to the unit.

Normally connect in serial mode: use the Serial RJ45 connector.

- Tallies 1 and 2 control the left and right tally LEDs.
- Tally 3 changes the display from green to red.
- Tallies 3 and 4 together will give an amber colour to the display.

The serial address is set via DIP switches on the rear.

Parallel tally operation is by setting the appropriate DIP switches and grounding the appropriate pins on the second optional RJ45 socket – please see Section 6.

3.0 The Legend

The replaceable film legend can be changed by lifting out the neutral density filter with a length of masking tape and then removing the film in a similar manner.

Film legends that are not in use should be stored carefully to avoid scratches.

4.0 Technical Specifications

Abbreviations:	UMD-S8C	Dual Colour 8 character display
Overall Size:	UMD-S8C*	Wmm x Hmm x Dmm 169 x 36 x 39
Visible Aperture Size:	UMD-S8C	Wmm x Hmm 162 x 19
Character Height:	UMD-S8C	17mm
Illumination Colour:		Green (and Red for the S8C)
Tally Colour:	Red	
Input Voltage:	+24v unregulated	
Power Consumption:	S8C	2.5 Watts 1PLU

* These displays will normally need to be mounted on P1 or P2 panels for fitting into a standard 1RU 19" aperture.

5.0 Connection Details

5.1 RJ45 Serial data socket

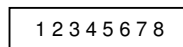
PIN	FUNCTION	DIRECTION
1	0V	GND
2	0V	GND
3		
4	RX+	IN
5	RX-	IN
6		
7	+24V	-
8	+24V	-

5.2 RJ45 Tally Socket – special orders only

PIN	FUNCTION
1	0V
2	0V
3	TALLY 1
4	TALLY 2
5	TALLY 3
6	TALLY 4
7	+24V
8	+24V

A connection to ground will light the appropriate tally or tally function.

View from the back.
Cable entry.



RJ45 Connector on the cable

Important note concerning the Tally Out RJ45 connector

Some monitors (e.g. Sony) use a high impedance input tally circuit referenced to +24V which is connected to ground for an active tally.

The TSL UMDs incorporate 100K ohm pull-up resistors referenced to +5V on each tally output pin.

Under these condition, the current path from +24V to +5V is enough to light the tally in the monitor. A +5V level on the TSL UMD represents a tally off condition

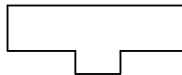
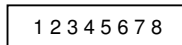
The possibility of having to use a small relay with this circuit must be considered.

5.3 Adapter cables to connect an RJ45 Display to a D15 connector for Winsoft Controllers

Serial Data only – Serial Connector

RJ45	FUNCTION	D15M
1	0V	9
2	0V	10
3	-	-
4	RX+	1
5	RX-	2
6	-	-
7	+24V	7
8	+24V	8

View from the back.
Cable entry.



RJ45 Connector on the cable

The input to the unit is on pins 4 and 5. These must be connected to pins 1 and 2 respectively on the TM1 Controller for the correct connection of the serial data.

Parallel Data only – Tally Connector

RJ45	FUNCTION	D15
1	0V	9
2	0V	10
3	Tally 1 - Left	5
4	Tally 2 - Right	4
5	Tally 3 – Display to Red	14
6	Tally 4 – Display to Amber with Tally 3	13
7	+24V out	-
8	+24V out	-

Notes:

1. It is recommended that the 0v/chassis connections are all connected together externally.
2. Product ordered for parallel tally control will have a second JR45 connector.
3. Tallies require connection to 0v to operate.

6.0 Addressing S8C Displays

The address of the unit is determined by the setting of the DIP switches. Switches 8 to 1 set the address according to the Binary Rule. Switch 8 is the LSB.

Switch 1 must be set to ON for the unit to accept serial data.

Serial control of tallies is the preferred way of operation and is controlled by the TallyMan program.

SWITCH NUMBER	FUNCTION OR VALUE WHEN SET TO ON
1	Unit accepts serial data
2	64
3	32
4	16
5	8
6	4
7	2
8	1

The UMD must be entered in the TallyMan program as a **Static** so that four tallies are allocated to the unit.

- Tallies 1 and 2 control the left and right tally LEDs respectively.
- Tally 3 changes the display from green to red.
- Tallies 3 and 4 together will give an amber colour to the display.

Re-power the display following changes so that the DIP switch settings are read by the unit.

7.0 Parallel Tally control and connections for the S8C display

Setting the DIP Switches for non-serial tally control

SWITCH NUMBER	POSITION AND FUNCTION	NORMAL POSITION
1	OFF for non serial control of tallies	OFF
2	---	OFF
3	Red/Green Swap with Sw 1 set to OFF	OFF
4	ON for simple parallel mode	ON
5	ON to enable serial port address setting	OFF
6	ON for brightness setting 3	OFF
7	ON for brightness setting 2	ON
8	ON for brightness setting 1	OFF

Notes

Switch 5 will be set to **ON** only if it is required to set the unit's address via the special TSL program. The switch is set to **OFF** when the address of the unit has been set.

This facility is not normally used

If the brightness switches are not set, the unit defaults to brightness level 2

Section C

Time Code UMD

Contents

- 1.0 Introduction**
- 2.0 Operation**
- 3.0 Technical Specifications**
- 4.0 Connection Details on the hardware**

1.0 Introduction

Both the 8 and 16 character displays are designed to operate from an external power source (nominal 24v DC), which is fed to the D15 plug connector on the rear panel. This power may come from a TM1 Controller or a power distribution unit such as the TSL PSU-22. Small systems could utilise an individual power supply.

SMPTE/EBU Time Code is connected via a D9 Socket.

The miniature buttons on the display are used to carry out the set-up of all parameters.

2.0 Operation

There are a maximum of four parameters that may be set:

TIME OFFSET
LOCATION NAME
12 / 24 HOUR SELECTION
BRIGHTNESS

Note: The 8 character time code display does not have the **Location Name** menu option but the structure is in the eeprom so 8 presses of the lower button will be necessary to cycle through this option.

The buttons are accessed through holes above and below the display at the right hand side of the display. A 2mm diameter tool is required such as a blunt cocktail stick or an opened out paper clip. The buttons are tactile, allowing the operator to feel when the switch has been changed.

The lower button is the **SELECT** button. Pressing this repeatedly will sequence through the available options in the order listed above, displaying the current default.

If it is required to make a change to the set-up, the lower **SELECT** button is pressed.

The top **CHANGE** button, is pressed repeatedly to set the required value of the **Time Offset** option. The display increments in 30 minutes blocks.

The **SELECT** button is pressed again and the next option in the menu tree is accessed.

The **Location Name** may now be set using the top button to select the character and the lower button to step to the next position. When all eight characters have been set the next option is accessed.

The **12/24 Hour** selection is now selected with the top button which toggles between the two selections.

The **CHANGE** button is pressed again and the next option in the menu tree is accessed. **Brightness** is now set.

The top **CHANGE** button cycles around the three brightness settings which correspond to those available on the Dynamic UMDs.

Finally, the lower button is pressed again which returns the display to its normal mode of operation.

3.0 Technical Specifications

Abbreviations:-	UMD-TC8: UMD-TC16:	Single 8 character display Single 16 character display
Overall Size	UMD-TC8 UMD-TC16	Wmm x Hmm x Dmm 174 x 38 x 60 483 x 44.4 x 54
UMD-TC16 19", 1RU except UMD- TC8		
Visible Aperture Size	UMD-TC8 UMD-TC16	Wmm x Hmm 162 x 19 308 x 19
Character Height	UMD-TC8 UMD-TC16	17mm 17mm
Illumination Colour:	Green	
Tally Colour:	Red	
Input Voltage:	+24V unregulated	
Power Consumption:	UMD-TC8 UMD-TC16	5.9 Watts (MAX) 11.8 Watts (MAX)
Mnemonic memory:	EEPROM	(micro-controller integrated circuit)
Serial Interface:	RS 485	38.4k baud
Software version:	LPTCV1.0	

4.0 Connection Details on the hardware

D15 PLUG	
PINS	FUNCTION
6,7,8	Supply +24v
9,10,11	Supply 0v and Chassis
1	N/C
2	N/C
5	Tally 1
4	Tally 2
15	OV and Chassis

D9 Socket	
PINS	FUNCTION
6	Gnd
8	TC +
3	TC -
1,9	OV and Chassis

Displays which use D9 connectors only

D9 plug on the hardware.

PIN	FUNCTION	DIRECTION
1	TC +	IN
2	TC -	IN
3	-	-
4	-	-
5	+24 VOLTS	IN
6	-	-
7	-	-
8	0V	GND
9	0V	GND

TSL LPcom Program

This simple program is available on request and is used to configure the UMD type for both the TSL Under Monitor Displays and the UMDs in the AMU1-8,12,16BA/D series of bargraph monitors.

Cable Requirements

The split cable is connected between a computer port and the UMD to be re-set with a power connection to a TM1 Controller, Power Supply Unit or to the existing UMD cable.

Communication Cable to program from the LPCOM Program floppy disc.

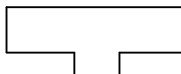
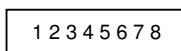
D15 and Green only units

Computer Comms Port			Standard green-only Displays	'Probel' Units	Power feed cable
D9F	or	D25F	D15F	D9M	D15M
3		2	2	8	
2		3	14*		
			6,7,8 (+ve)		6,7,8 (+ve)
5		7	9,10,11 (-ve)	1,9	9,10,11 (-ve)

RJ45 and Tri-colour units.

Computer Comms Port D9F	RJ 45	FUNCTION	D15F	Power Feed Cable – RJ 45
5	1	0V	9	1
	2	0V	10	
2	3*	TX-	14*	
	4	RX+	1	
3	5	RX-	2	
	6	TX+	13	
	7	+24V	7	7
	8	+24V	8	

View from the back.
Cable entry.



RJ45 Connector on the cable

(* This connection to pin 14 or pin 3 on the RJ45 units will allow programming of the UMDs in the AMU1 series of Audio Monitoring Units with the same cable. The connection is not required for the ordinary UMDs).

Ensure that GND is carried through to the PC. For easy use set the UMD to Addr 000.

The power may be drawn from the normal feed cable or from the TSL PSU-22.

The opening screen is as below:

-TSL- LP UMD Configuration V1.2 on COM 1

Select command:

A Set display type: TSL Protocol
B Set display type: Probel SWP04 Protocol
C Set display type: Probel SWP06 Protocol
D Reset to defaults
E Write Static message
F Set Address: 00

Command?

ALT-X to quit

Check display for good comms (WR OK)

Notes.

- Calling up the appropriate command will produce a sub-menu list.
- To change the static message the UMD's address must first be entered in Menu F
- This program will not communicate with the UMD if the UMD is set to either Probel SWP04 Protocol or Probel SWP06 Protocol. It will then be necessary to use the Hard Rest facility on the UMD menu, <<HRESET!!>> to default the UMD to TSL protocol first.

Once set do NOT use , <<HRESET!!>> again as this will default the UMD to a D8 left display.

UMD TD8 and QD8 UMDs will show spurious characters on the display if a Hard Reset is carried out on these units.

This program must be used to reset the display.

Section D

IMD System

General Description

This is a system that can accept a number of video sources, produce the same number of outputs but each carrying its own UMD information, in-picture. Each output will carry only one video source to one screen. Picture re-sizing is carried out to allow the correct aspect ratio to be shown on either a 4:3 or 16:9 screen. The UMD data may be either superimposed on the picture or boxed in.

The IMD system is housed in a 3U high, 19" rack unit. The rack houses two cassette-based mains power supplies. The second supply will be optional, to offer redundancy for failure protection, and both supplies will be hot-swappable against supply failures. Changeover in the event of one supply failure will be automatic.

A maximum of 16 IMD modules are housed within the rack, as plug-in cards, which mate with passive connector module cards fitted in the rear of the frame. The cards are user-installable, and are hot-swappable. Access to the modules is through a drop-down door at the front of the rack.

A single RS422 D9 connection to the tally controller is provided on each rack.

The rack, power supplies, modules and general arrangement of components is designed to meet EMC and electrical safety requirements.

Rack

The rack is 3U high, 19" rack, depth not exceeding 320mm behind the rack mounting ears.

The rack offers:

1. Provision for two plug-in mains power supplies, each with an independent fused IEC mains inlet. The mains power supply for the IMD system is a cassette style unit to allow simple exchange in the event of a failure. In addition the dc outputs are diode protected to allow two supplies to operate in parallel within one rack to provide redundancy. Although the supplies potentially load-share, either supply will have sufficient capacity for a fully populated rack. The cassettes make use of industry standard 'footprint' switch-mode modules for economy and security of supply. The mains input is of universal range, 90-264Vac, 50/60Hz.
2. Housing for up to sixteen IMD cards.
3. Individual signal I/O rear panels for each IMD card. Although these would normally be factory fitted, with suitable blanking panels for unused locations, it will be possible to change/upgrade these in the field.
4. Sync locking reference BNC connector – if this facility is required.
5. Forced ventilation with temperature controlled fan(s).
6. Access to the IMD cards, and modular power supplies is through a user-accessible front panel door.

Dual Composite IMD Card 2IMD-COMP / TSL IMD 01

This card offers a basic composite input, composite output, with two independent channels on one card. Each channel is as follows:

Input

Input: Composite video
Input standards: PAL-I, M/NTSC auto-detected
Input impedance: 75ohm terminating
Nom level: 1Vp-p when terminated

Output

IMD Output: Composite video with IMD and tallies, two BNCs
Output standard: As input
Synchronization: Free-run

Picture Processing

A-D/D-A processing: 8-bit conversion, at 27MHz
Picture re-sizing: According to user pre-set output format (16:9 or 4:3), can be set to produce letterbox or side-blinds according to input, or to display anamorphically.
IMD re-sizing: The user may shrink the picture, whilst maintaining the appropriate aspect ratio, to provide IMD under the picture on a black background, or leave the picture unchanged but with the IMD overlaid on the picture.

User controls

Card address: Set by 3 x rotary BCD switch, 6 on each card – 3 per channel.
IMD position: Shrink picture/ overlay IMD set by DIP switches.

DIP Switch Settings for 2IMD-COMP / TSL IMD 01

Up = to the Right
Down = to the Left

4:3 source image.

Sw 1 Up. For 4:3 screen. Full sized image.
Sw 1 Down Not Valid
Sw 2 Up For 4:3 screen - full image
Sw 2 Down. For 16:9 screen. 4:3 image squeezed to maintain correct aspect ratio.
Sw 3 Down Defaults the tallies to Green when in Basic Mode (TallyMan)
Sw 4 UMD transparency setting.
Sw 5 UMD transparency setting
Sw 6 WSS control .

16:9 source image

Sw 1 Up. For 16:9 screen. Full sized image.
Sw 1 Down For 4:3 screen. 16:9 image moved up with correct aspect ratio.
Sw 2 Up For 16:9 image- full screen.
Sw 2 Down Not valid
Sw 3 Down Defaults the tallies to Green when in Basic Mode (TallyMan)
Sw 4 UMD transparency setting.
Sw 5 UMD transparency setting
Sw 6 WSS control .

Dual SDI IMD Card 2IMD-SD I / TSL IMD 02

Input

Input: SDI video
Input standards: PAL-I, M/NTSC auto-detected
Input impedance: 75ohm terminating
Nom level: 1Vp-p when terminated

Output

IMD Output: SDI and composite video with IMD and tallies, one BNC per signal type
Output standard: As input
Synchronization: Free-run

Picture Processing

D-A processing: 8-bit conversion, at 27MHz
Picture re-sizing: According to user pre-set output format (16:9 or 4:3), can be set to produce letterbox or side-blinds according to input, or to display anamorphically.
IMD re-sizing: The user may shrink the picture, whilst maintaining the appropriate aspect ratio, to provide IMD under the picture on a black background, or leave the picture unchanged but with the IMD overlaid on the picture.

User controls

Card address: Set by 3 x rotary BCD switch, 6 on each card – 3 per channel.
IMD position: Shrink picture/ overlay IMD set by DIP switches.

DIP Switch Settings for 2IMD-SD I / TSL IMD 02

Up = to the Right
Down = to the Left

4:3 source image.

Sw 1 Up. For 4:3 screen. Full sized image.
Sw 1 Down Not Valid
Sw 2 Up For 4:3 screen - full image
Sw 2 Down. For 16:9 screen. 4:3 image squeezed to maintain correct aspect ratio.
Sw 3 Down Defaults the tallies to Green when in Basic Mode (TallyMan)
Sw 4 UMD transparency setting.
Sw 5 UMD transparency setting
Sw 6 WSS control .

16:9 source image

Sw 1 Up. For 16:9 screen. Full sized image.
Sw 1 Down For 4:3 screen. 16:9 image moved up with correct aspect ratio.
Sw 2 Up For 16:9 image- full screen.
Sw 2 Down Not valid
Sw 3 Down Defaults the tallies to Green when in Basic Mode (TallyMan)
Sw 4 UMD transparency setting.
Sw 5 UMD transparency setting
Sw 6 WSS control .

Pin outs

The IMD rack has a 9 way female D-type socket on the back panel. This is for connecting TSL UMD data to the frame.

The pin assignments are as follow:-

Data in: Pins 3 (Rx+), Pin 8 (Rx-),
Data out: Pins 7 (Tx+), Pin 2 (Tx-). (Not currently Used)
0V on Pins 1,4,6,9.

Cable Details

RJ45 Display Connectors (Control 4 on the TMx series).

TMx RJ45	→	IMD D9M
1	0v	1
2	0v	4/6
3	RX-	
4	TX+	3
5	TX-	8
6	RX+	
7	+24v	
8	+24v	

RS422 D9 Control Ports on the TMx series.

Control Port	→	IMD D9M
1	0v/Chassis	
2	TX-	8
3	RX+	
4	0v	4
5	-	-
6	0v	6
7	TX+	3
8	RX-	
9	0v	

Ext Sync-locking BNC (Gold in colour).

Only need be connected it is essential that all images are locked. Not normally required.

Section E

Thomson Displays


TallyMan will drive Thomson/BTS displays as long as the display is set to 38K4 ASCII.


A TallyMan UMD port – UMD Type - must be set to **Thomson BTS Ascii**.

The Thomson UMD must be set to ASC 38K4 via its internal menu.

The Pin connections between the TallyMan ports and the Thomson PSU D9F RS422 port are as follows.

Cable details.

TMx RJ45		Thomson D9M
1	0v	1
2	0v	4/6
3	RX-	
4	TX+	3
5	TX-	8
6	RX+	
7	+24v	
8	+24v	

TMx RS422 Control Port		Thomson D9M
1	0v/Chassis	
2	TX-	8
3	RX+	
4	0v	4
5	-	-
6	0v	6
7	TX+	3
8	RX-	
9	0v	

The display is now treated exactly like a TSL UMD with the exception that remote brightness control is not available.

Colour change of the default text colour will only occur when the display gets a stimulus. E.g. a tally signal.

Section F

Amazon Displays

Some of these displays will read TSL UMD Protocol. Set the Protocol in the display to Quartz. [sic] if it is available in the UMD menu structure

The address must be set and the display will then accept TSL UMD protocol.

The displays only support UMD basic protocol.

- A left tally will cause the display to turn Amber
- A right tally will cause the display to turn Red
- Both a left and a right tally will make the display to turn Red with an Amber line through the text.

The Data may be applied to the Amazon PSU D37 connector.

TMx RJ45	Pin Function
1	0v
2	0v
3	RX-
4	TX+
5	TX-
6	RX+
7	+24v
8	+24v

TMx RS422 Control Port	Pin Function
1	0v/Chassis
2	TX-
3	RX+
4	0v
5	-
6	0v
7	TX+
8	RX-
9	0v