Television Systems Limited

TallyMan

THE ONLY TALLY SYSTEM YOU'LL EVER NEED

# Tallyman Controller Installation Manual

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# Introduction

The following document covers installation of the TSL Tallyman controllers TM1, TM2, TM2+ and TMC-1.

The TSL tally system consists of a number of displays, either discrete modules or Multiviewers / IMD (In-Picture-Display); controlled by a 19” 1RU remotely located TallyMan Controller.

The TallyMan Controller distributes power and provides the control for the displays. It also carries user-defined interfaces for routing matrices, vision mixers and output drivers for cue lights and additional tally control for cameras etc.

All operational set-ups such as the router assignments, mnemonics and tally routing are programmed with a set-up computer running another version of TallyMan normally connected to the Ethernet Port on the TallyMan Controller except in the case of the TMC-1 that is configured locally.

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# Installation

## TM1

The TallyMan controller should be installed in a standard 19” rack with good ventilation, no other special precautions need be taken, further information regarding earthing, mounting, power etc may be found in the Safety section.

### Connections

| | |
|---|---|
| **Tally 1** | This is for the parallel tallies. 1 – 32 |
| **Tally 2** | This is for the parallel tallies 33 – 64 |
| **Control 1** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection |
| **Control 2** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection |
| **Control 3** | RS232 – User Assignable. Used for Serial configuration of Controller Network settings and available for Mixer/Router/Multiviewer connection |
| **Control 4** | RJ45 UMD Display Ports - Power and RS422 serial data is available from these ports. |
| **Ethernet** | This is for configuration via the configuration PC and network comms with IP capable devices. |
| **Power** | The unit is powered via an IEC 60320 C14 coupler. The inlet is auto ranging 100-240V. No cable is supplied with this device. |

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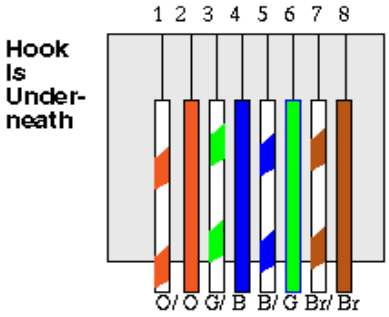
## Pin out details

### *Ethernet*

The cable required to connect the TM1 controller with the configuring computer is as follows:

| Signal Name | RJ-45 Ethernet Pin Numbers | Crossover Cable Pinouts |
|---|---|---|
| TX + | 1 | 3 |
| TX - | 2 | 6 |
| RX + | 3 | 1 |
| FPWR + Power | 4 | 4 |
| FPWR + Power | 5 | 5 |
| RX - | 6 | 2 |
| FPWR - Power | 7 | 7 |
| FPWR - Power | 8 | 8 |




For a hub connection, use a straight-through cable. For TallyMan Controller to Computer, use a crossover cable

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### *Control Ports*

Control ports 1 and 2 – Serial RS422

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | 0v/Chassis | 6 | 0v |
| 2 | TX- | 7 | TX+ |
| 3 | RX+ | 8 | RX- |
| 4 | 0v | 9 | 0v |
| 5 | - | | |

Control Port 3 – Serial RS232 (Maintenance port)

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | - | 6 | - |
| 2 | RX | 7 | RTS |
| 3 | TX | 8 | CTS |
| 4 | DTR | 9 | - |
| 5 | 0v | | |

Control Port 4 - Serial RS422 Display Ports

| RJ45 DISPLAY CONNECTORS | |
|---|---|
| 1 | 0v |
| 2 | 0v |
| 3 | RX- |
| 4 | TX+ |
| 5 | TX- |
| 6 | RX+ |
| 7 | +24v |
| 8 | +24v |

The Display ports are wired pin to pin, all 8 display ports are paralleled and are addressed as port 4.

UMD displays should be distributed evenly between the eight display drive outputs on the TM1 controller. Cables to the UMDs should be screened CAT5 cable, in order to conform to European CE requirements it is recommended that CAT5E FTP cable is used.

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### *Parallel Tally connectors*

| TALLY 1 & 2 INPUT/OUTPUT CONNECTORS<br><br>D37 SOCKET | | | |
|---|---|---|---|
| 1 | TALLY 1 | 20 | TALLY 20 |
| 2 | TALLY 2 | 21 | TALLY 21 |
| 3 | TALLY 3 | 22 | TALLY 22 |
| 4 | TALLY 4 | 23 | TALLY 23 |
| 5 | TALLY 5 | 24 | TALLY 24 |
| 6 | TALLY 6 | 25 | TALLY 25 |
| 7 | TALLY 7 | 26 | TALLY 26 |
| 8 | TALLY 8 | 27 | TALLY 27 |
| 9 | TALLY 9 | 28 | TALLY 28 |
| 10 | TALLY 10 | 29 | TALLY 29 |
| 11 | TALLY 11 | 30 | TALLY 30 |
| 12 | TALLY 12 | 31 | TALLY 31 |
| 13 | TALLY 13 | 32 | TALLY 32 |
| 14 | TALLY 14 | 33 | 0v |
| 15 | TALLY 15 | 34 | +12 / +24V see note |
| 16 | TALLY 16 | 35 | Ext Voltage Ref Pin |
| 17 | TALLY 17 | 36 | 0v |
| 18 | TALLY 18 | 37 | - |
| 19 | TALLY 19 | | |

Parallel (GPI) tallies are connected directly to the Tally 1 and Tally 2 D37 connectors on the TM1 controller.

These are freely assignable as inputs or outputs in groups of eight. Tally inputs will occupy the lowest numbered pins starting with the Tally 1 connector. The output parallel tallies (if any are assigned) will start from the next available pin on the D37 connector.

The following tally in/ out arrangements are possible between the Tally 1 and Tally 2 connectors:

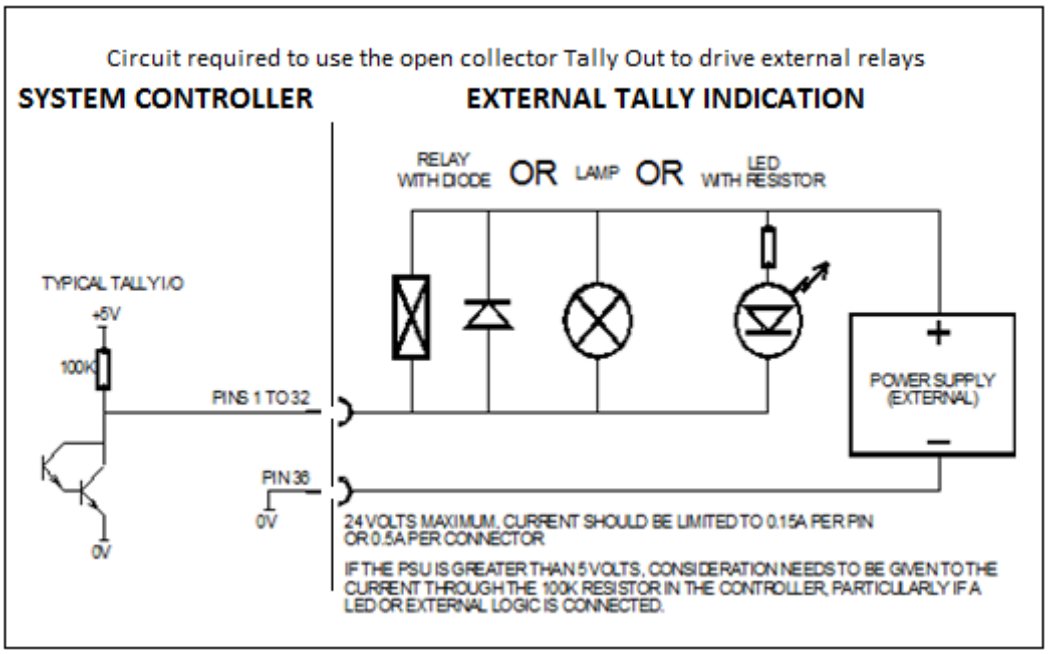
| Inputs | Outputs |
|---|---|
| 0 | 64 |
| 8 | 56 |
| 16 | 48 |
| 24 | 40 |
| 32 | 32 |
| 40 | 24 |
| 48 | 16 |
| 56 | 8 |
| 64 | 0 |

## Tally inputs

A ground or 0V to the pin is required to activate a tally input. The common or ground connection is connected to pin 36.

## Tally outputs

Tally outputs consist of open collector driver circuits. Common (ground) appears on pin 36. The circuit is capable of sinking approximately 150mAto ground to activate relays etc.




**Notes:**

1) Pin 34 carries a +12 V, or from Serial Number: 66200 +24V supply rated at 0.5A. Do not use this internal +12V for relay coil supply.

2) Pin 35

LK1 on the internal EAB2 cards is set for the pull-up resistors to be referenced to normally + 5V or, by changing the link to positions Centre/Ext, an external voltage reference applied to Pin 35 on the D37 connector.

If using an external voltage above 5V, the link on the card should be set for external pull-up (position 2-3, labelled EXT, away from the D37), and the external voltage should be applied to Pin 35**.** Putting the link to EXT and applying the voltage to Pin 35 also enables the onboard spike suppression diodes.

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## Default IP

The default IP parameters of TSL Tallyman controllers are:

IP Address: 192.168.205.121

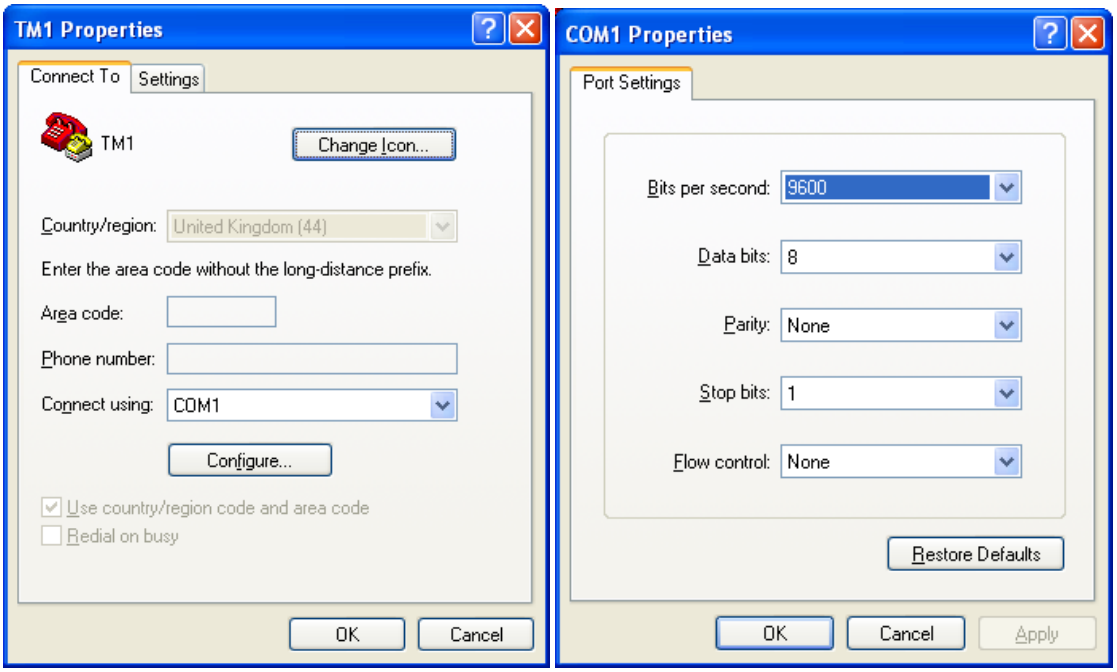
Subnet Mask: 255.255.255.0

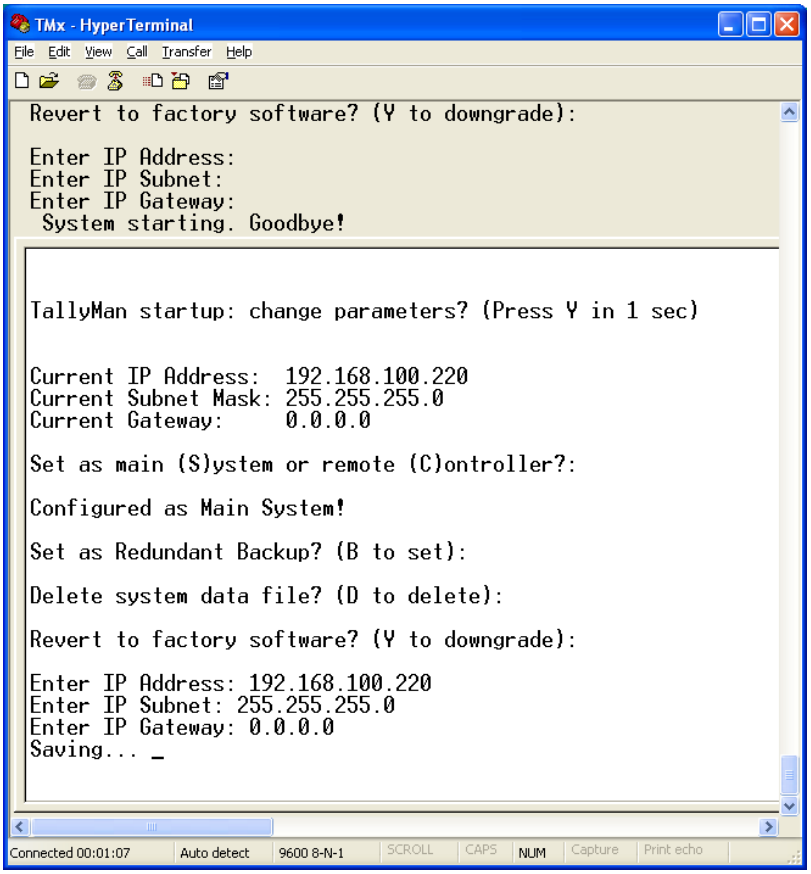
Connection for configuration purposes is via a PC running TallyMan, available for download from the TSL website [www.TSL.co.uk](http://www.TSL.co.uk)

## Initial setup

Connect a PC running a terminal program (Hyper terminal/Putty/Tera Term Pro for example) to the Maintenance Port, Port 3 on the TallyMan controller.

HyperTerminal Settings






Start HyperTerminal and then power up the TM1 and wait for about 10 seconds. Press Y on the keyboard within 1 sec of the message appearing. Follow the on-screen instruction

- Pressing **S** or Enter on the PC's keyboard will set the TallyMan units as the Main Unit
- Pressing **C** will set it as a Controller so that it may be an Object in the system tree under a Main Controller, this is not necessary to share objects and tally information between controllers, more information on object sharing can be found in the sharing objects section of the TallyMan configuration manual.
- Pressing **B** will set the unit as a Redundant Backup unit. See the section on Backup for information on how to use this facility.
- Pressing **D** will delete the current setup file; pressing any other key will allow access to the IP settings.
- Pressing **Y** will revert the unit to factory software and will downgrade the unit to the previous version of the TallyMan Program provided that an upgrade has taken place in the field.
- IP Addresses are set as shown. If no entry is made and Enter in the PC's keyboard is pressed the original settings will be kept.

When all settings are correct remove the RS232 cable and re-power the unit.

### *Notes.*

Use the following cable to connect your PC comm. Port to Port 3 of the TallyMan:

| PC | TM1 |
| --- | --- |
| 2 | 3 |
| 3 | 2 |
| 5 | 5 |

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## TM2

The TallyMan controller should be installed in a standard 19” rack with good ventilation, no other special precautions need be taken, further information regarding earthing, mounting, power etc may be found in the Safety section.

### Connections

| | | |
|---|---|---|
| **Tally 1** | This is for the parallel tallies. | 1 – 32 |
| **Tally 2** | This is for the parallel tallies | 33-64 |
| **Tally 3** | This is for the parallel tallies | 65-96 |
| **Tally 4** | This is for the parallel tallies | 97-128 |
| **Control 1** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 2** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 3** | RS232 –User Assignable. Used for Serial configuration of Controller Network settings and available for Mixer/Router/Multiviewer connection | |
| **Control 4** | RJ45 UMD Display Ports - Power and RS422 serial data is available from these ports. | |
| **Control 5** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 6** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 7** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Ethernet** | This is for configuration via the configuration PC and network comms with IP capable devices. | |
| **Power** | The unit is powered via an IEC 60320 C14 coupler. The inlet is auto ranging 100-240V. No cable is supplied with this device. | |

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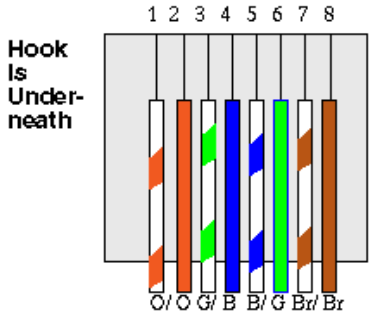
## Pin out details

### *Ethernet*

The cable required to connect the TM2 controller with the configuring computer is as follows:

| Signal Name | RJ-45 Ethernet Pin Numbers | Crossover Cable Pinouts |
|---|---|---|
| TX + | 1 | 3 |
| TX - | 2 | 6 |
| RX + | 3 | 1 |
| FPWR + Power | 4 | 4 |
| FPWR + Power | 5 | 5 |
| RX - | 6 | 2 |
| FPWR - Power | 7 | 7 |
| FPWR - Power | 8 | 8 |




For a hub connection, use a straight-through cable. For TallyMan Controller to Computer, use a crossover cable

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### *Control Ports*

Control ports 1,2,5,6 & 7 – Serial RS422

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | 0v/Chassis | 6 | 0v |
| 2 | TX- | 7 | TX+ |
| 3 | RX+ | 8 | RX- |
| 4 | 0v | 9 | 0v |
| 5 | - | | |

Control Port 3 – Serial RS232 (Maintenance port)

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | - | 6 | - |
| 2 | RX | 7 | RTS |
| 3 | TX | 8 | CTS |
| 4 | DTR | 9 | - |
| 5 | 0v | | |

Control Port 4 - Serial RS422 Display Ports

| RJ45 DISPLAY CONNECTORS | |
|---|---|
| 1 | 0v |
| 2 | 0v |
| 3 | RX- |
| 4 | TX+ |
| 5 | TX- |
| 6 | RX+ |
| 7 | +24v |
| 8 | +24v |

The Display ports are wired pin to pin, all 8 display ports are paralleled and are addressed as port 4.

UMD displays should be distributed evenly between the eight display drive outputs on the TM2 controller. Cables to the UMDs should be screened CAT5 cable, in order to conform with European CE requirements it is recommended that CAT5E FTP cable is used

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### *Parallel Tally connectors*

| TALLY 1,2,3 & 4 INPUT/OUTPUT CONNECTORS<br><br>D37 SOCKET | | | |
|---|---|---|---|
| 1 | TALLY 1 | 20 | TALLY 20 |
| 2 | TALLY 2 | 21 | TALLY 21 |
| 3 | TALLY 3 | 22 | TALLY 22 |
| 4 | TALLY 4 | 23 | TALLY 23 |
| 5 | TALLY 5 | 24 | TALLY 24 |
| 6 | TALLY 6 | 25 | TALLY 25 |
| 7 | TALLY 7 | 26 | TALLY 26 |
| 8 | TALLY 8 | 27 | TALLY 27 |
| 9 | TALLY 9 | 28 | TALLY 28 |
| 10 | TALLY 10 | 29 | TALLY 29 |
| 11 | TALLY 11 | 30 | TALLY 30 |
| 12 | TALLY 12 | 31 | TALLY 31 |
| 13 | TALLY 13 | 32 | TALLY 32 |
| 14 | TALLY 14 | 33 | 0v |
| 15 | TALLY 15 | 34 | +12 / +24V see note |
| 16 | TALLY 16 | 35 | Ext Voltage Ref Pin |
| 17 | TALLY 17 | 36 | 0v |
| 18 | TALLY 18 | 37 | - |
| 19 | TALLY 19 | | |

Parallel (GPI) tallies are connected directly to the Tally 1, 2, 3 & 4 D37 connectors on the TM2 controller.

These are freely assignable as inputs or outputs in groups of eight. Tally inputs will occupy the lowest numbered pins starting with the Tally 1 connector. The output parallel tallies (if any are assigned) will start from the next available pin on the D37 connector.

The following tally in/out arrangements are possible between the Tally 1 and Tally 2 connectors:

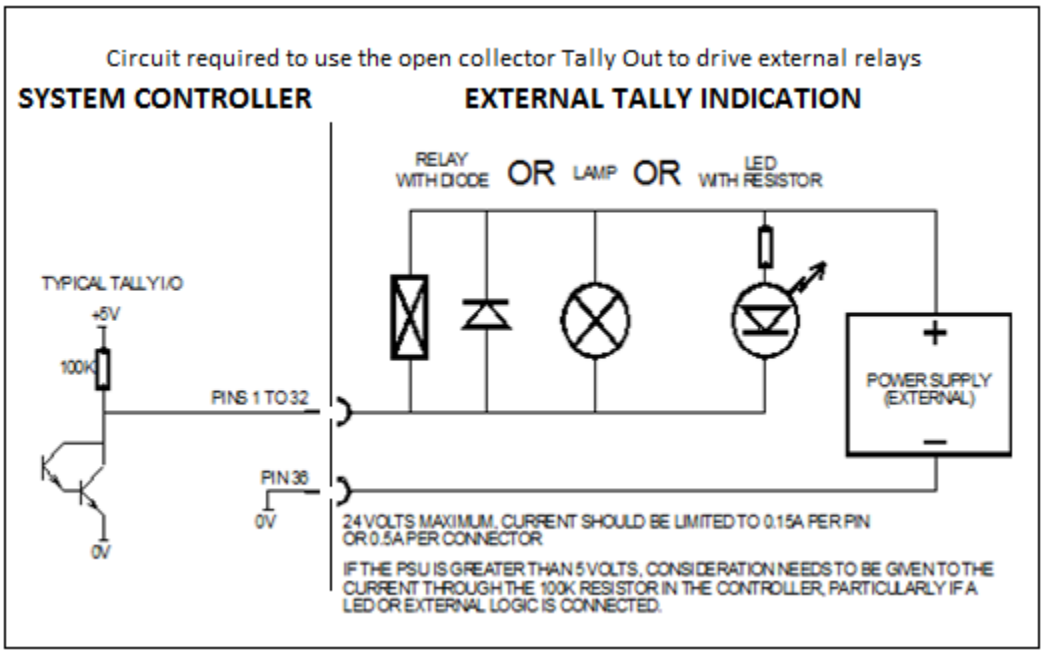
| Inputs | Outputs |
|---|---|
| 0 | 64 |
| 8 | 56 |
| 16 | 48 |
| 24 | 40 |
| 32 | 32 |
| 40 | 24 |
| 48 | 16 |
| 56 | 8 |
| 64 | 0 |

## Tally inputs

To activate a Tally input, pull the relevant pin to ground or 0V. The common or ground connection is connected to pin 36.

## Tally outputs

Tally outputs consist of open collector driver circuits. Common (ground) appears on pin 36. The circuit is capable of sinking approximately 150mAto ground to activate relays etc.




**Notes:**

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2) Pin 35

LK1 on the internal EAB2 cards is set for the pull-up resistors to be referenced to normally + 5V or, by changing the link to positions Centre/Ext, an external voltage reference applied to Pin 35 on the D37 connector.

If using an external voltage above 5V, the link on the card should be set for external pull-up (position 2-3, labelled EXT, away from the D37), and the external voltage should be applied to Pin 35**.** Putting the link to EXT and applying the voltage to Pin 35 also enables the onboard spike suppression diodes.

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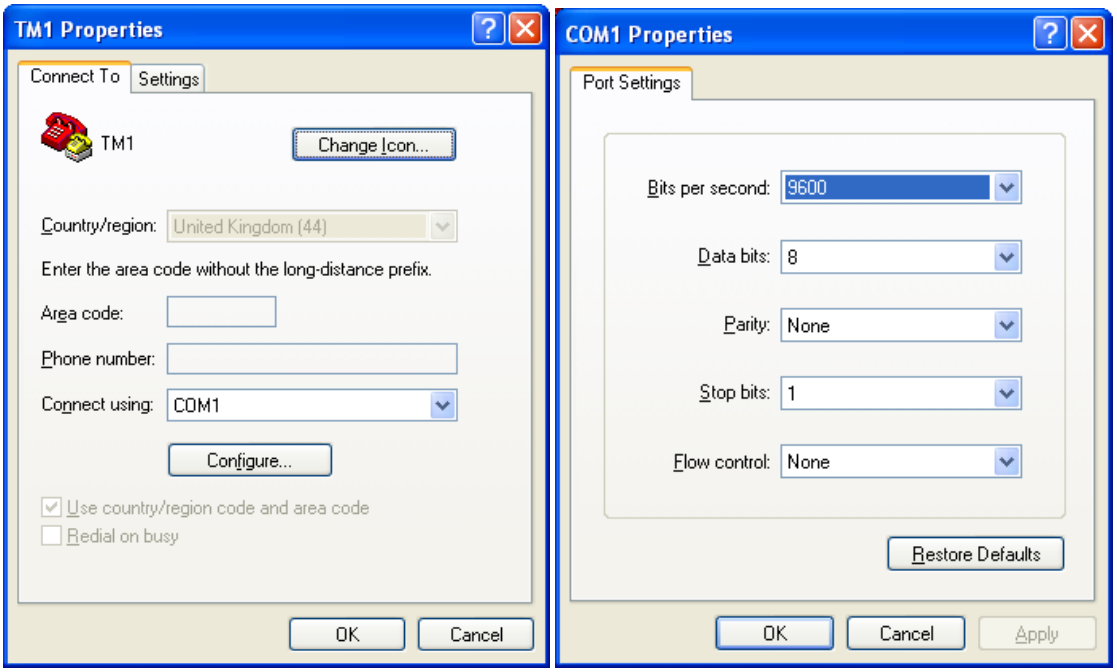
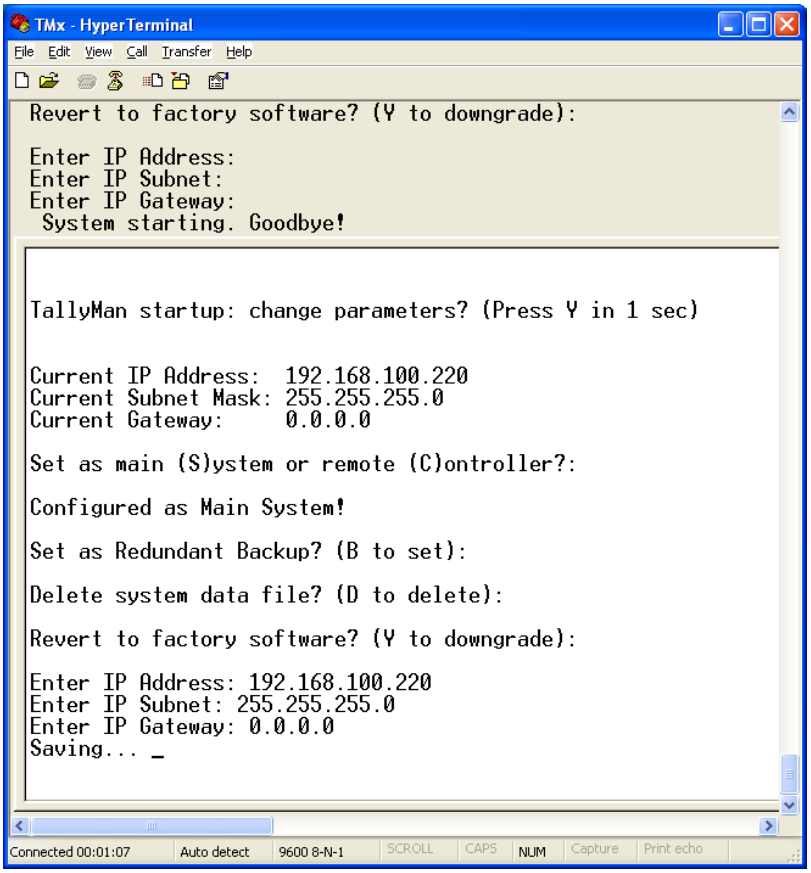
HyperTerminal Settings






Start HyperTerminal and then power up the TM2 and wait for about 10 secs. Press Y on the keyboard within 1 sec of the message appearing. Follow the on-screen instruction

- Pressing **S** or Enter on the PC's keyboard will set the TallyMan units as the Main Unit
- Pressing **C** will set it as a Controller so that it may be an Object in the system tree under a Main Controller, this is not necessary to share objects and tally information between controllers, more information on object sharing can be found in the sharing objects section of the TallyMan configuration manual.
- Pressing **B** will set the unit as a Redundant Backup unit. See the section on Backup for information on how to use this facility.
- Pressing **D** will delete the current setup file; pressing any other key will allow access to the IP settings.
- Pressing **Y** will revert the unit to factory software and will downgrade the unit to the previous version of the TallyMan Program provided that an upgrade has taken place in the field.
- IP Addresses are set as shown. If no entry is made and Enter in the PC's keyboard is pressed the original settings will be kept.

When all settings are correct remove the RS232 cable and re-power the unit.

### *Notes.*

Use the following cable to connect your PC comm. Port to Port 3 of the TallyMan:

| PC | TM2 |
|---|---|
| 2 | 3 |
| 3 | 2 |
| 5 | 5 |

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## TM2+


The TallyMan controller should be installed in a standard 19” rack with good ventilation, no other special precautions need be taken, further information regarding earthing, mounting, power etc may be found in the Safety section.

### Connections

| | | |
|---|---|---|
| **Tally 1** | This is for the parallel input tallies. | 1 – 32 |
| **Tally 2** | This is for the (isolated relay) parallel output tallies | 1-16 |
| **Tally 3** | This is for the (isolated relay) parallel output tallies | 17-32 |
| **Tally 4** | This is for the (isolated relay) parallel output tallies | 33-48 |
| **Control 1** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 2** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 3** | RS232 –User Assignable. Used for Serial configuration of Controller Network settings and available for Mixer/Router/Multiviewer connection | |
| **Control 4** | RJ45 UMD Display Ports - Power and RS422 serial data is available from these ports. | |
| **Control 5** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 6** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 7** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Control 8** | RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection | |
| **Ethernet** | This is for configuration via the configuration PC and network comms with IP capable devices. | |
| **Power** | The unit is powered via an IEC 60320 C14 coupler. The inlet is auto ranging 100-240V. No cable is supplied with this device. | |

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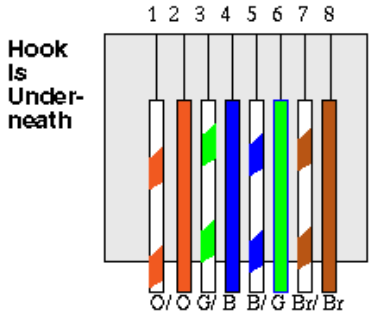
## Pin out details

### *Ethernet*

The cable required to connect the TM2+ controller with the configuring computer is as follows:

| Signal Name | RJ-45 Ethernet Pin Numbers | Crossover Cable Pinouts |
|---|---|---|
| TX + | 1 | 3 |
| TX - | 2 | 6 |
| RX + | 3 | 1 |
| FPWR + Power | 4 | 4 |
| FPWR + Power | 5 | 5 |
| RX - | 6 | 2 |
| FPWR - Power | 7 | 7 |
| FPWR - Power | 8 | 8 |




For a hub connection, use a straight-through cable. For TallyMan Controller to Computer, use a crossover cable

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### *Control Ports*

Control ports 1,2,5,6, 7 & 8 – Serial RS422

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | 0v/Chassis | 6 | 0v |
| 2 | TX- | 7 | TX+ |
| 3 | RX+ | 8 | RX- |
| 4 | 0v | 9 | 0v |
| 5 | - | | |

Control Port 3 – Serial RS232 (Maintenance port)

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | - | 6 | - |
| 2 | RX | 7 | RTS |
| 3 | TX | 8 | CTS |
| 4 | DTR | 9 | - |
| 5 | 0v | | |

Control Port 4 - Serial RS422 Display Ports

| RJ45 DISPLAY CONNECTORS | |
|---|---|
| 1 | 0v |
| 2 | 0v |
| 3 | RX- |
| 4 | TX+ |
| 5 | TX- |
| 6 | RX+ |
| 7 | +24v |
| 8 | +24v |

The Display ports are wired pin to pin, all 8 display ports are paralleled and are addressed as port 4.

UMD displays should be distributed evenly between the eight display drive outputs on the TM2+ controller. Cables to the UMDs should be screened CAT5 cable, in order to conform with European CE requirements it is recommended that CAT5E FTP cable is used

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### *Parallel Tally connectors*

Parallel (GPI) tallies are connected directly to the Tally 1, 2, 3 & 4 D37 connectors on the TM2+ controller.

### Tally inputs

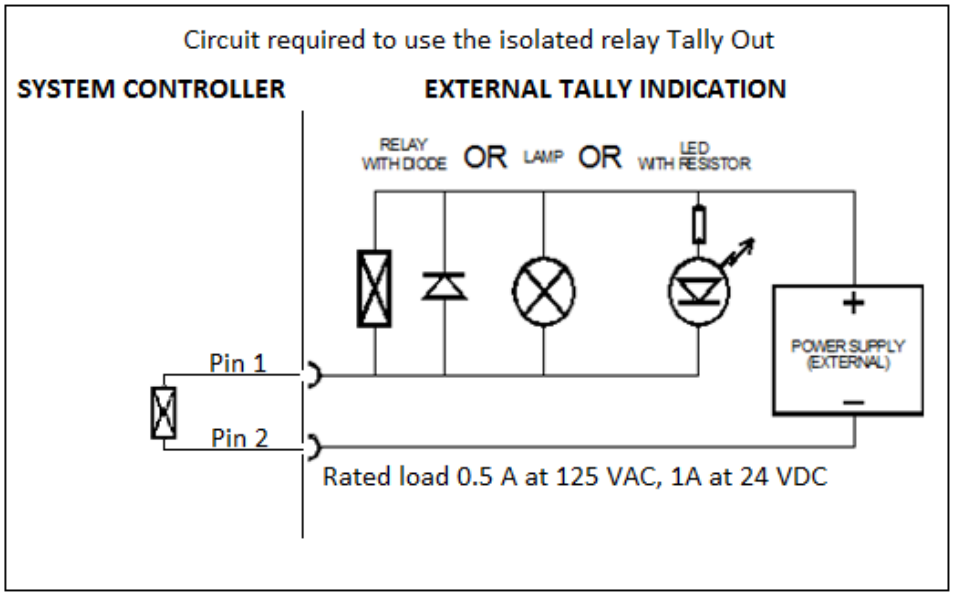
To activate a tally input, pull the relevant pin to ground or 0V. The common or ground connection is connected to pin 36.

| **TALLY 1 INPUT CONNECTORS**<br><br>**D37 SOCKET** | | | |
|---|---|---|---|
| 1 | TALLY 1 | 20 | TALLY 20 |
| 2 | TALLY 2 | 21 | TALLY 21 |
| 3 | TALLY 3 | 22 | TALLY 22 |
| 4 | TALLY 4 | 23 | TALLY 23 |
| 5 | TALLY 5 | 24 | TALLY 24 |
| 6 | TALLY 6 | 25 | TALLY 25 |
| 7 | TALLY 7 | 26 | TALLY 26 |
| 8 | TALLY 8 | 27 | TALLY 27 |
| 9 | TALLY 9 | 28 | TALLY 28 |
| 10 | TALLY 10 | 29 | TALLY 29 |
| 11 | TALLY 11 | 30 | TALLY 30 |
| 12 | TALLY 12 | 31 | TALLY 31 |
| 13 | TALLY 13 | 32 | TALLY 32 |
| 14 | TALLY 14 | 33 | 0v |
| 15 | TALLY 15 | 34 | +12 / +24V see note |
| 16 | TALLY 16 | 35 | Ext Voltage Ref Pin |
| 17 | TALLY 17 | 36 | 0v |
| 18 | TALLY 18 | 37 | - |
| 19 | TALLY 19 | | |

## Tally outputs

The Tally Outputs consist of isolated relay contact pairs. Current loading is rated at 0.5A at 125 VAC, 1A at 24 VDC, non-inductive. Common (ground) appears on Pin 36.

The example below demonstrates the circuit required for Tally 33 on the Tally 2 D37 connector, Tally 34 uses pins 3 + 4, Tally out 35 uses pins 5 + 6.




| TALLY 2 OUTPUT CONNECTOR D37 SOCKET | | | |
|---|---|---|---|
| 1 | TALLY 33 | 20 | TALLY 42 |
| 2 | TALLY 33 | 21 | TALLY 43 |
| 3 | TALLY 34 | 22 | TALLY 43 |
| 4 | TALLY 34 | 23 | TALLY 44 |
| 5 | TALLY 35 | 24 | TALLY 44 |
| 6 | TALLY 35 | 25 | TALLY 45 |
| 7 | TALLY 36 | 26 | TALLY 45 |
| 8 | TALLY 36 | 27 | TALLY 46 |
| 9 | TALLY 37 | 28 | TALLY 46 |
| 10 | TALLY 37 | 29 | TALLY 47 |
| 11 | TALLY 38 | 30 | TALLY 47 |
| 12 | TALLY 38 | 31 | TALLY 48 |
| 13 | TALLY 39 | 32 | TALLY 48 |
| 14 | TALLY 39 | 33 | 0v |
| 15 | TALLY 40 | 34 | +24V |
| 16 | TALLY 40 | 35 | Ext Voltage Ref Pin |
| 17 | TALLY 41 | 36 | 0v |
| 18 | TALLY 41 | 37 | - |
| 19 | TALLY 42 | | |

| TALLY 3 OUTPUT CONNECTOR D37 SOCKET | | | |
|---|---|---|---|
| 1 | TALLY 49 | 20 | TALLY 58 |
| 2 | TALLY 49 | 21 | TALLY 59 |
| 3 | TALLY 50 | 22 | TALLY 59 |
| 4 | TALLY 50 | 23 | TALLY 60 |
| 5 | TALLY 51 | 24 | TALLY 60 |
| 6 | TALLY 51 | 25 | TALLY 61 |
| 7 | TALLY 52 | 26 | TALLY 61 |
| 8 | TALLY 52 | 27 | TALLY 62 |
| 9 | TALLY 53 | 28 | TALLY 62 |
| 10 | TALLY 53 | 29 | TALLY 63 |
| 11 | TALLY 54 | 30 | TALLY 63 |
| 12 | TALLY 54 | 31 | TALLY 64 |
| 13 | TALLY 55 | 32 | TALLY 64 |
| 14 | TALLY 55 | 33 | 0v |
| 15 | TALLY 56 | 34 | +24V |
| 16 | TALLY 56 | 35 | Ext Voltage Ref Pin |
| 17 | TALLY 57 | 36 | 0v |
| 18 | TALLY 57 | 37 | - |
| 19 | TALLY 58 | | |

| TALLY 4 OUTPUT CONNECTOR D37 SOCKET | | | |
|---|---|---|---|
| 1 | TALLY 65 | 20 | TALLY 74 |
| 2 | TALLY 65 | 21 | TALLY 75 |
| 3 | TALLY 66 | 22 | TALLY 75 |
| 4 | TALLY 66 | 23 | TALLY 76 |
| 5 | TALLY 67 | 24 | TALLY 76 |
| 6 | TALLY 67 | 25 | TALLY 77 |
| 7 | TALLY 68 | 26 | TALLY 77 |
| 8 | TALLY 68 | 27 | TALLY 78 |
| 9 | TALLY 69 | 28 | TALLY 78 |
| 10 | TALLY 69 | 29 | TALLY 79 |
| 11 | TALLY 70 | 30 | TALLY 79 |
| 12 | TALLY 70 | 31 | TALLY 80 |
| 13 | TALLY 71 | 32 | TALLY 80 |
| 14 | TALLY 71 | 33 | 0v |
| 15 | TALLY 72 | 34 | +24V |
| 16 | TALLY 72 | 35 | Ext Voltage Ref Pin |
| 17 | TALLY 73 | 36 | 0v |
| 18 | TALLY 73 | 37 | - |
| 19 | TALLY 74 | | |

**Notes:**

1) Pin 34 carries a +12 V, or from Serial Number: 66200 +24V supply rated at 0.5A. Do not use this internal +12V for relay coil supply.

2) Pin 35

LK1 on the internal EAB2 cards is set for the pull-up resistors to be referenced to normally + 5V or, by changing the link to positions Centre/Ext, an external voltage reference applied to Pin 35 on the D37 connector.

If using an external voltage above 5V, the link on the card should be set for external pull-up (position 2-3, labelled EXT, away from the D37), and the external voltage should be applied to Pin 35**.** Putting the link to EXT and applying the voltage to Pin 35 also enables the onboard spike suppression diodes.

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## Default IP

The default IP parameters of TSL Tallyman controllers are:

IP Address: 192.168.205.121

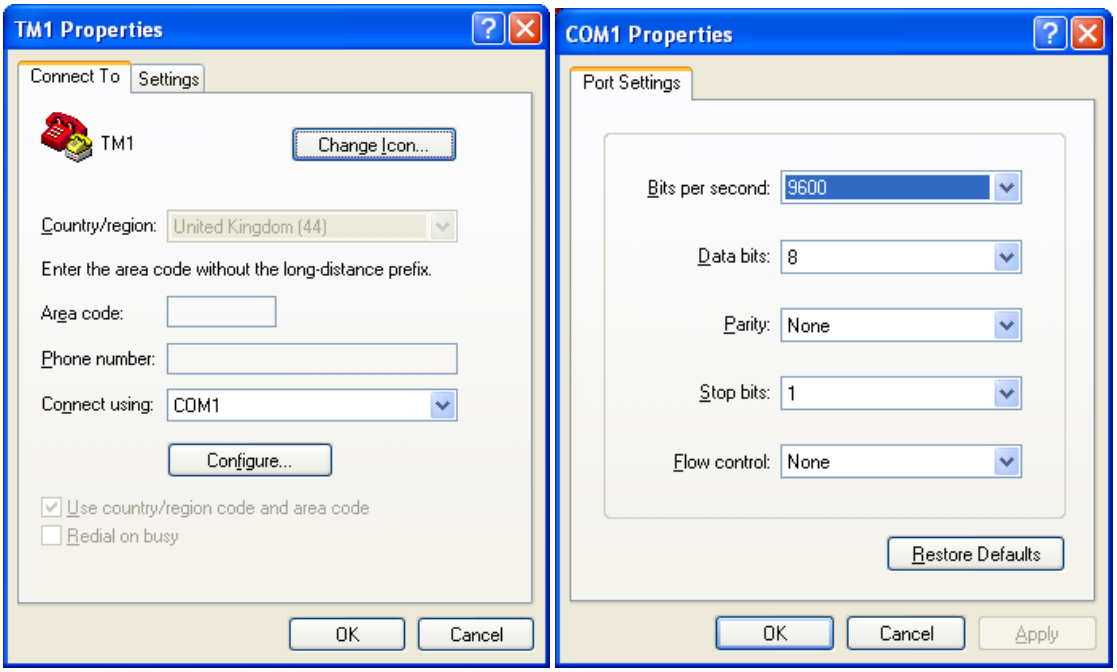
Subnet Mask: 255.255.255.0

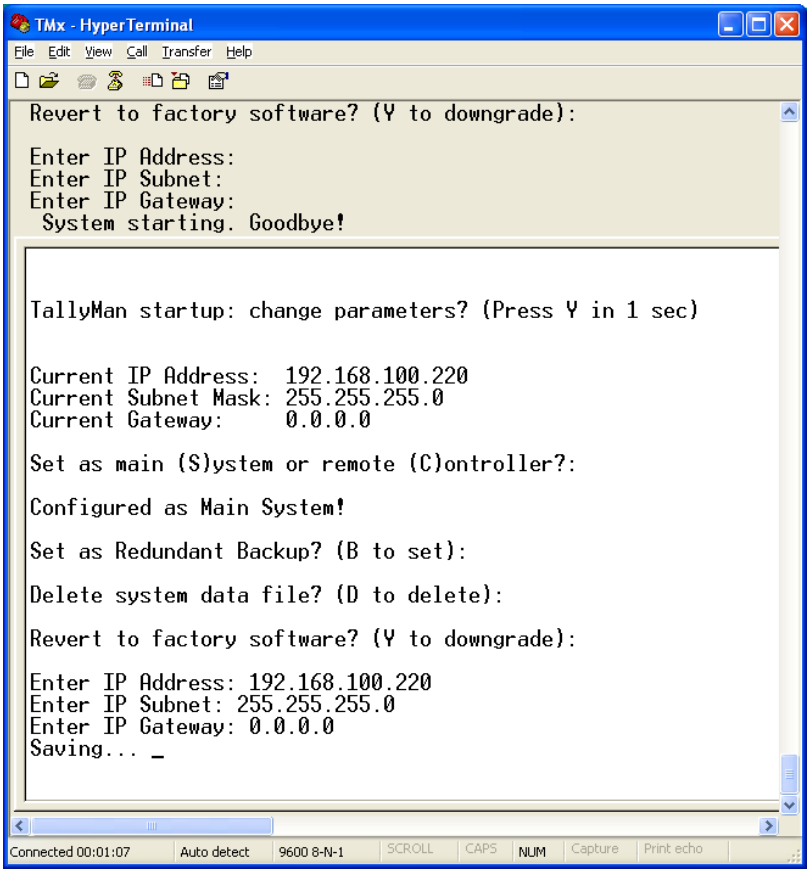
Connection for configuration purposes is via a PC running TallyMan, available for download from the TSL website [www.TSL.co.uk](http://www.TSL.co.uk)

## Initial setup

Connect a PC running a terminal program (Hyper terminal/Putty/Tera Term Pro for example) to the Maintenance Port, Port 3 on the TallyMan controller.

HyperTerminal Settings






Start HyperTerminal and then power up the TM2+ and wait for about 10 secs. Press Y on the keyboard within 1 sec of the message appearing. Follow the on-screen instruction

- Pressing **S** or Enter on the PC's keyboard will set the TallyMan units as the Main Unit
- Pressing **C** will set it as a Controller so that it may be an Object in the system tree under a Main Controller, this is not necessary to share objects and tally information between controllers, more information on object sharing can be found in the sharing objects section of the TallyMan configuration manual.
- Pressing **B** will set the unit as a Redundant Backup unit. See the section on Backup for information on how to use this facility.
- Pressing **D** will delete the current setup file; pressing any other key will allow access to the IP settings.
- Pressing **Y** will revert the unit to factory software and will downgrade the unit to the previous version of the TallyMan Program provided that an upgrade has taken place in the field.
- IP Addresses are set as shown. If no entry is made and Enter in the PC's keyboard is pressed the original settings will be kept.

When all settings are correct remove the RS232 cable and re-power the unit.

### *Notes.*

Use the following cable to connect your PC comm. Port to Port 3 of the TallyMan:

| PC | TM2+ |
|---|---|
| 2 | 3 |
| 3 | 2 |
| 5 | 5 |

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## TMC-1

The TallyMan controller should be installed in a standard 19” rack with good ventilation, no other special precautions need be taken, further information regarding earthing, mounting, power etc may be found in the Safety section.

### Connections

**Control 1** RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection

**Control 2** RS422 – User Assignable. Used for Mixer/Router/Multiviewer connection

**Controls 3 -18** RS422 – Optional expansion cards. User Assignable. Used for Mixer/Router/Multiviewer connection

**Ethernet** This is for configuration via the configuration PC and network comms with IP capable devices.

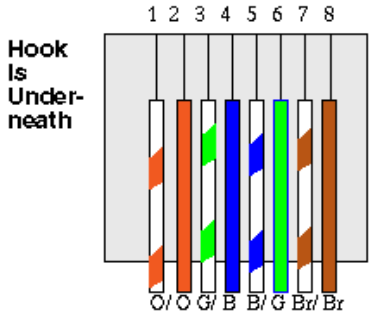
**Power** The unit is powered via an IEC 60320 C14 coupler. The inlet is auto ranging 100-240V. No cable is supplied with this device.

## Pin out details

### *Ethernet*

The cable required to connect the TMC-1 controller with the configuring computer is as follows:

| Signal Name | RJ-45 Ethernet Pin Numbers | Crossover Cable Pinouts |
|---|---|---|
| TX + | 1 | 3 |
| TX - | 2 | 6 |
| RX + | 3 | 1 |
| FPWR + Power | 4 | 4 |
| FPWR + Power | 5 | 5 |
| RX - | 6 | 2 |
| FPWR - Power | 7 | 7 |
| FPWR - Power | 8 | 8 |




For a hub connection, use a straight-through cable. For TallyMan Controller to Computer, use a crossover cable

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### *Serial Ports*

Serial Port 1 – RS232

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | DCD | 6 | DSR |
| 2 | RX | 7 | RTS |
| 3 | TX | 8 | CTS |
| 4 | DTR | 9 | RI |
| 5 | 0V/Chassis | | |

Serial Port 2 – RS422

| Pin Numbers | Signal | Pin Numbers | Signal |
|---|---|---|---|
| 1 | TX- | 6 | - |
| 2 | TX+ | 7 | - |
| 3 | RX+ | 8 | - |
| 4 | RX- | 9 | - |
| 5 | 0v/Chassis | | |

Serial Ports 3 -18 – RS422

**Important Note – The pinout of the expansion card RS422 ports will differ from the RS422 serial port 2.**

Different expansion cards have been used over time dependant upon customer demand and availability. The information booklet for the expansion card fitted to your units will be included with your TMC. If you no longer have the information booklet please contact support@tsl.co.uk with the serial number of your TMC for details.

### Default IP

The default IP parameters of TSL Tallyman controllers are:

| | |
|---|---|
| IP Address: | 192.168.205.121 |
| Subnet Mask: | 255.255.255.0 |

Connection for configuration purposes is via a PC running TallyMan, available for download from the TSL website www.TSL.co.uk

### Initial setup

Connect a monitor, keyboard and mouse to the VGA and USB ports respectively.

Log into the machine with the default username and password

| | |
|---|---|
| Default Username: | “TSL” |
| Default Password: | “tsl” |

Configure the IP address of the TMC-1 via the Network and Sharing centre in the same manner as any Windows 7 machine.

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# Specification

## TM1

### Internal Power Supply Specification

In the event of a failure the faulty item should be returned to TSL for replacement.

The user should not attempt any repairs as this voids the PSU manufacturer's three year warranty.

Specifications

| Manufacturer's Specification | Model SUU120-180 |
|---|---|
| Input Voltage | 90~264 VAC, 47~63 Hz |
| Input Current | 1.0 A @ 230 VAC, 1.7 A @ 115 VAC |
| Output Voltage | See table below (plus +/-5% adjustment range on O/P 1) |
| Over Load Protection | 110~150% of rated current (auto-recovery) |
| Over Voltage Protection | 112~132% of output voltage (crowbar) |
| Efficiency | 70-88% (dependent on unit) |
| Line Regulation | 0.5% typically |
| Load Regulation | +/-3% typical on single output units @ 230 VAC input |
| Hold Up Time | 16 ms @ 110 VAC input |
| Switching Frequency | 80 kHz typical |
| Leakage Current | 0.4mA (0.75 mA max.) @ 240 VAC input and full load |
| Isolation Voltage | I/P-O/P: 3 kVAC, I/P-FG: 1.5 kVAC |
| Operating Temperature | 0 °C to +70 °C (derating by 2.5% /□C above 50 □C) |
| Safety Standards | UL60950-1, TUV EN60950-1 |
| EMC Standard | EN55022 Class B, EN55024, EN61000-3-2, 3 |
| MTBF | >100 khrs (MIL-HDBK-217F) @ 25 □C |
| Weight | Approx 0.5 kg each |
| Dimensions | 127(L) x 81.4(W) x 39.2(H) |

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# TM2

## Internal Power Supply Specification

This is a MeanWell SP-300 Series unit. In the event of a failure the faulty item should be returned to TSL for replacement.

The user should not attempt any repairs as this voids the PSU manufacturer's warranty.

| Manufacturer's Specification | Model SP- 300-24 |
|---|---|
| DC Output Voltage | 24V |
| Output Voltage Tolerance | ±1% |
| Output Rated Current | 12.5A |
| Output Current Range | 0 – 12.5A |
| Ripple and Noise | 150mV pk-pk |
| Line Regulation | ±0.2% |
| Load Regulation | ±0.5% |
| DC Output Power | 300W |
| Efficiency | 86% |
| DC Voltage Adjustment | 20 ~ 26.4V |
| Input Voltage Range | 88~264VAC 47~63Hz; 124~370VDC |
| AC Current | 4A/115V, 2A/230V |
| Power Factor | 0.9/100~240VAC |
| Inrush Current | 18A/115V 36A/230V |
| Leakage Current | ＜1mA/240VAC |
| Overload Protection | 105~135% Type: Pulsing Hiccup Shutdown Reset: Auto Recovery |
| Over Voltage Protection | 27.6-32.4V |
| Fan Control Over Temp Protect. | RTH1 or RTH2＞50°C Fan On, ＜45°C Fan Off ＞70°C Output Shutdown |
| Temp. Coefficient | ±0.03%/°C (0~50°C) |
| Setup, Rise, Hold up Time | 1.5s, 50ms, 20ms |
| Vibration | 10~500Hz, 2G 10min./1cycle, Period for 60min each axis |
| Withstand Voltage | I/P-O/P:3KVAC I/P-FG: 1.5KVAC |
| Isolation Resistance | I/P-O/P, I/P-FG, O/P-FG:500VDC / 100Mohms |
| Working Temp. Humidity | -10°C-+50°C (Refer to O/P de-rating Curve), 20%-90% RH |
| Storage Temp. Humidity | -20°C~+85°C, 10%~95% RH |
| Dimensions | 215*115*50mm Case 912 |
| Module weight | 1.2Kgs |
| Safety Standards | UL1950, TUV EN90950 Approved |
| EMC Standards | CISPR22 (EN55022), IEC1000-4-2,3,4,5,6,8,11 IEC1000-3-2 Verification |

Notes:

1. All parameters are specified at 230V I/P, rated load, 25°C, 70% RH ambient

2. Ripple and noise are measured at 20MHz using a 12" twisted pair terminated with a 0.1uF and 47uF capacitor.

3. Line regulation is measured from low line to high line at rated load.

4. Load regulation is measured for 0% to 100% rated load.

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# TM2+

## Internal Power Supply Specification

This is a MeanWell SP-300 Series unit. In the event of a failure the faulty item should be returned to TSL for replacement.

The user should not attempt any repairs as this voids the PSU manufacturer's warranty.

| Manufacturer's Specification | Model SP- 300-24 |
|---|---|
| DC Output Voltage | 24V |
| Output Voltage Tolerance | ±1% |
| Output Rated Current | 12.5A |
| Output Current Range | 0 – 12.5A |
| Ripple and Noise | 150mV pk-pk |
| Line Regulation | ±0.2% |
| Load Regulation | ±0.5% |
| DC Output Power | 300W |
| Efficiency | 86% |
| DC Voltage Adjustment | 20 ~ 26.4V |
| Input Voltage Range | 88~264VAC 47~63Hz; 124~370VDC |
| AC Current | 4A/115V, 2A/230V |
| Power Factor | 0.9/100~240VAC |
| Inrush Current | 18A/115V 36A/230V |
| Leakage Current | ＜1mA/240VAC |
| Overload Protection | 105~135% Type: Pulsing Hiccup Shutdown Reset: Auto Recovery |
| Over Voltage Protection | 27.6-32.4V |
| Fan Control Over Temp Protect. | RTH1 or RTH2＞50°C Fan On, ＜45°C Fan Off ＞70°C Output Shutdown |
| Temp. Coefficient | ±0.03%/°C (0~50°C) |
| Setup, Rise, Hold up Time | 1.5s, 50ms, 20ms |
| Vibration | 10~500Hz, 2G 10min./1cycle, Period for 60min each axis |
| Withstand Voltage | I/P-O/P:3KVAC I/P-FG: 1.5KVAC |
| Isolation Resistance | I/P-O/P, I/P-FG, O/P-FG:500VDC / 100Mohms |
| Working Temp. Humidity | -10°C-+50°C (Refer to O/P de-rating Curve), 20%-90% RH |
| Storage Temp. Humidity | -20°C~+85°C, 10%~95% RH |
| Dimensions | 215*115*50mm Case 912 |
| Module weight | 1.2Kgs |
| Safety Standards | UL1950, TUV EN90950 Approved |
| EMC Standards | CISPR22 (EN55022), IEC1000-4-2,3,4,5,6,8,11 IEC1000-3-2 Verification |

Notes:

1. All parameters are specified at 230V I/P, rated load, 25°C, 70% RH ambient

2. Ripple and noise are measured at 20MHz using a 12" twisted pair terminated with a 0.1uF and 47uF capacitor.

3. Line regulation is measured from low line to high line at rated load.

4. Load regulation is measured for 0% to 100% rated load.

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# TMC-1

## Internal Power Supply Specification

This is a Zippy Technology Corp. R1V2-5275V4H power system and is 1+1 redundant power system consisting of two R1V-2275V power modules and one R1V2-5275V4H power system frame. In the event of a failure the faulty item should be returned to TSL for replacement.

The user should not attempt any repairs as this voids the PSU manufacturer's warranty.

| **Manufacturer's Specification** | **Model R1V2-5275V4H** | | | | |
|---|---|---|---|---|---|
| DC Output Voltage | Output voltage | Load Current (A) | | Regulation Tolerence | |
| | | Min. | Max. | Max. | Min. |
| | +5V | 0A | 20A | +5% | -5% |
| | +12V | 0.1A | 22A | +5% | -5% |
| | -12V | 0A | 0.3A | +10% | -10% |
| | +3.3V | 0A | 20A | +5% | -5% |
| | 5Vsb | 0.1A | 2.5A | +5% | -5% |
| Ripple and Noise | +5V | 50mV (P-P) | | | |
| | +12V | 120mV (P-P) | | | |
| | -12V | 120mV (P-P) | | | |
| | +3.3V | 50mV (P-P) | | | |
| | +5Vsb | 50mV (P-P) | | | |
| Line Regulation | ± 1% | | | | |
| DC Output Power | 275W | | | | |
| Efficiency | 78% ± 2% typical at full load 230VAC | | | | |
| Input Voltage Range | 100~240 VAC full range (with ±10% tolerance) | | | | |
| AC Current | 4A/115V, 2A/230V | | | | |
| Power Factor Correction | 95%/90%, 115/240VAC | | | | |
| Inrush Current | 30/70A, 115/230V (25°C cold start, per power unit) | | | | |
| Leakage Current | ＜3.5mA max at nominal voltage VAC | | | | |
| Overload Protection | 110~170%, Reset: Remove load - cycle power | | | | |
| Over Voltage Protection | Output Voltage | Min | Typical | Max | |
| | +3.3V | 3.6V | 4.1V | 4.3V | |
| | +5V | 5.6V | 6.1V | 6.5V | |
| | +12V | 13.2V | 14.3V | 15.0V | |
| Hold up Time | 20ms | | | | |
| Withstand Voltage | I/P-O/P:3KVAC I/P-FG: 1.5KVAC for 60 seconds | | | | |
| Isolation Resistance | I/P-O/P, I/P-FG, O/P-FG:500VDC / 100Mohms | | | | |
| Working Temp. Humidity | 0°C to 50°C (90~264 VAC, Refer to O/P de-rating Curve), 20%-80% RH | | | | |
| Storage Temp. Humidity | -20°C~+80°C, 10%~90% RH | | | | |
| Dimensions | 295*106*41.8mm | | | | |
| Safety Standards | UL 60950, TUV+CB EN90950, CCC GB4943-2001, GB9254-1998, GB17625.1-2003 Approved | | | | |
| EMC Standards | CISPR22 (EN55022:2006) Class A | | | | |

## Motherboard

Supplier – Impulse Corp UK

Part number – SBC81205VGG

## CPU

Part number - Intel Core 2 Duo E7400 - 2.8Ghz 3Mb Cache 1066 FSB, Dual Core Processor, 775 Socket

## Memory

Specification - 2GB, DDR2 SDRAM , 240 pin DIMM, 1.8V

Supplier – Dabs

## Disk Drive (Solid state)

Specification – SATA 2 SSD, 30GB

Part number for supplier – OCZSSD2-1VTX30G

Supplier – OCZ Technology

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# Safety

## Installation

Unless otherwise stated TSL equipment may be installed at any angle or position within an operating temperature range of 5 ~ 25 degrees C.
The RJ45 connectors are for use only with TSL UMD equipment.
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).

### Earthing/Grounding

In all cases, the frame of the equipment should be earthed on installation. Connection to an earthed strip running the length of the frame is ideal.

The earth pin on the IEC mains inlet connector is connected to the metal frame of the equipment, to 0 volts on the internal DC PSU and to signal ground, unless otherwise stated. All metal panels are bonded together. Rack mounted equipment must be earthed (grounded).

### Mounting

Careful consideration of the equipment location and mounting in racks must be made. In particular, consideration must be given to the stability of free-standing racks by mounting heavy equipment low in the rack. The rear of the unit should be supported in the rack.

### Power

For pluggable equipment, the socket outlet shall be installed near the equipment and shall be easily accessible.

Consideration must be given to the supply circuit loading and switch on/fault surges that will affect over current protection trips and switches etc.

Check that the fuse rating is correct for the local power (mains) supply. Replacement fuses must be of the same rating and type for continued protection against fire risk.

The equipment rating is shown on the rear panel.

No power supply cord is provided with this equipment.

**Do not switch on until all connections are made.**

### Ventilation

Due consideration for cooling requirements must be given when mounting the equipment.

If the equipment is installed in a closed unit, consideration must be given to providing forced air cooling in order that the maximum recommended temperature is not exceeded. Introduction 9 TallyMan V 1.7.1b on

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## EC Declaration of conformity

**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:

EN 60950

EMC Directive: 89/336/EEC, Amended 92/31/EEC.

Conformity Standards Declared:

EN 50081-1, EN 50082-1

| | |
|---|---|
| Manufacturer's Name: | Television Systems Ltd |
| Manufacturer's Address: | Vanwall Road |
| Maidenhead SL6 4UB | |
| England | |
| United Kingdom | |
| Type of Equipment: | UMD System Controller |
| Model No: | UMD TM1 / TM2 / TM2 PLUS / TMC-1 |
| Part Number: | TSLP- UMD TM1 / TM2 / TM2 PLUS / TMC-1 |
| Date CE Mark Affixed: | 2006/2009 |

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

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# 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.

## Technical support information

E-Mail address: support@tsl.co.uk

Telephone Support Number: +44 (0) 1628 676221

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

## TSL Returns Procedure

Please email Support@TSL.co.uk or telephone +44 (0)1628 676221 and ask for Technical Support who will assist in diagnosing the fault and will provide a Returns Number (RMA). 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.**

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