



Television
Systems Limited

TallyMan

THE ONLY TALLY SYSTEM YOU'LL EVER NEED

The TSL Tally and
UMD Configuring Program

ESP-1 & ESP-1R+ Parallel Tally
Module

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

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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 ESP-1R+

Part Number: TSLP- ESP-1R+

Date CE Mark Affixed: xxxx

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

Place: Maidenhead, England

Signature: _____

Date: TBA _____

Print: J F PINNIGER _____
Position: PRODUCT MANAGER

ESP-1R / ESP-1R+ Parallel Interface Unit

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1.0 Introduction

This section describes the use of the two units, the ESP-1 and ESP-1R+. Both are very similar as far as set up is concerned. The unit is mounted in a 1RU enclosure where the mounting ears may be fixed to either the front or to the rear of the box, allowing system installation flexibility.

The unit allows 32 parallel tallies in (contacts to the system 0V) and 32 mapped parallel tallies out (open collector). The R version offers an additional 32 isolated relay connection on additional D37 connectors. The R+ version offers 64 isolated relay outputs

The unit includes a RS422 serial D9 connector allowing convenient local access to the TallyMan system for third party equipment.

Connection to the TM1 / TM2 is via a standard Ethernet CAT 5 cable.

2.0 Installation

A mains input between 96 – 250V, AC 50 – 60Hz is required.

The ESP-1R+ should be installed in a standard 19" rack. No special precautions need be taken.

Connection to the TM1/TM2 is via a standard Ethernet CAT 5 cable.

The first unit will be set by default to:

IP Address: 192.168.100.221

Subnet Mask: 255.255.255.0

In addition the Port Setting must follow the pattern: 6221

Note that the 6000 series numbers for the port setting add the IP address to them.

If there is a second unit the settings will be:

IP Address: 192.168.100.222

Subnet Mask: 255.255.255.0

In addition the Port Setting must follow the pattern: 6222

And so on.

2.1 Recommendations

- Ethernet cables to the ESP-1 and ESP-1R+ should be screened CAT 5 cable in order to conform with the European CE requirements. It is recommended that Category 5E FTP (foil screened twisted pair) cable is used. The individual cores are rated at 1A.
- To conform to CE requirements the cases should be bonded to ground using, ideally, braiding connecting straps.

3.0 Tally Inputs

Parallel (GPI) tallies are connected directly to the Input connector on the ESP-1R+. A ground or 0V on the pin is required to operate the tallies. The common or ground connection is connected to Pin 36. The tally inputs are connected to Pins 1 through to Pin 32.

Tallies are mapped via the TallyMan set up screen.

4.0 Tally outputs.

Tally outputs are available on the Output and Expansion / Relay 1 and 2 D37 connectors, and the 1, 2, 3 and 4 D37 connectors if the ESP-1R+ unit is in use.

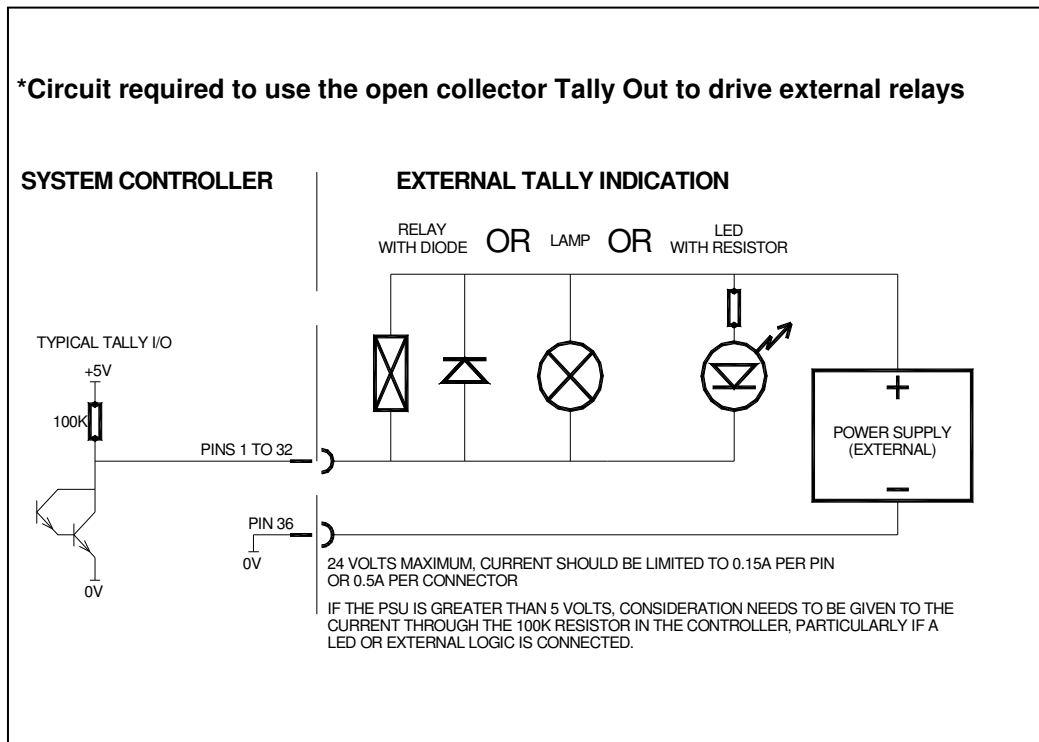
The Output connector o/p's are open collector driver circuits (100K pull-up to +5V) available on Pin 1 through to Pin 32 on each connector. Common (ground) is on Pin 36. The circuit is capable of sinking approx. 150mA to ground to activate relays etc.

The Expansion 1 & 2 Connectors on the ESR-1R provide isolated relay circuits, current capacity: max. 2A non inductive.

Note:

The open collector tally outputs are intended to *control cue lights on camera heads, VTRs, Telecine machines etc. as well as directly any static under-monitor displays in the system. External drivers are needed for high current applications.

Tally inputs and outputs are assigned to UMDs via the set-up screen in TallyMan



5.0 Pinout Details

Ethernet Connections

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

For a hub connection, use a straight-through cable.

The ESP-1R / ESP-1R+ should be connected to the Ethernet connection on the TMx via a crossover cable or via a hub using a 1:1 cable.

RS422 Serial Connector

RS 422 CONNECTOR D9 SOCKET			
Pin Numbers	Signal	Pin Numbers	Signal
1	0v/Chassis	6	0v
2	TX-	7	TX+
3	RX+	8	RX-
4	0v	9	0v
5	-		

For the ESP-1

D37 Connectors

TALLY1/2 INPUT/OUTPUT CONNECTORS D37 SOCKET			
Pin		Pin	
1	Tally 1	18	Tally 18
2	Tally 2	19	Tally 19
3	Tally 3	20	Tally 20
4	Tally 4	21	Tally 21
5	Tally 5	22	Tally 22
6	Tally 6	23	Tally 23
7	Tally 7	24	Tally 24
8	Tally 8	25	Tally 25
9	Tally 9	26	Tally 26
10	Tally 10	27	Tally 27
11	Tally 11	28	Tally 28
12	Tally 12	29	Tally 29
13	Tally 13	30	Tally 30
14	Tally 14	31	Tally 31
15	Tally 15	32	Tally 32
16	Tally 16	33	0v
17	Tally 17	36	0v
		37	GND

Note that the actual system tally numbers will depend on what other tally objects are incorporated in TallyMan

For the ESP-1R

INPUT CONNECTOR D37 SOCKET			
Pin		Pin	
1	Tally 1	18	Tally 18
2	Tally 2	19	Tally 19
3	Tally 3	20	Tally 20
4	Tally 4	21	Tally 21
5	Tally 5	22	Tally 22
6	Tally 6	23	Tally 23
7	Tally 7	24	Tally 24
8	Tally 8	25	Tally 25
9	Tally 9	26	Tally 26
10	Tally 10	27	Tally 27
11	Tally 11	28	Tally 28
12	Tally 12	29	Tally 29
13	Tally 13	30	Tally 30
14	Tally 14	31	Tally 31
15	Tally 15	32	Tally 32
16	Tally 16	33	0v
17	Tally 17	36	0v
		37	GND

OUTPUT 1 –32 OPEN COLLECTOR CONNECTOR D37 SOCKET			
Pin		Pin	
1	Tally 1	18	Tally 18
2	Tally 2	19	Tally 19
3	Tally 3	20	Tally 20
4	Tally 4	21	Tally 21
5	Tally 5	22	Tally 22
6	Tally 6	23	Tally 23
7	Tally 7	24	Tally 24
8	Tally 8	25	Tally 25
9	Tally 9	26	Tally 26
10	Tally 10	27	Tally 27
11	Tally 11	28	Tally 28
12	Tally 12	29	Tally 29
13	Tally 13	30	Tally 30
14	Tally 14	31	Tally 31
15	Tally 15	32	Tally 32
16	Tally 16	33	0v
17	Tally 17	36	0v
		37	GND

RELAY 1-16 OUTPUT CONNECTOR D37 SOCKET			
Pin		Pin	

1	Tally 33	19	Tally 42
2	Tally 33	20	Tally 42
3	Tally 34	21	Tally 43
4	Tally 34	22	Tally 43
5	Tally 35	23	Tally 44
6	Tally 35	24	Tally 44
7	Tally 36	25	Tally 45
8	Tally 36	26	Tally 45
9	Tally 37	27	Tally 46
10	Tally 37	28	Tally 46
11	Tally 38	29	Tally 47
12	Tally 38	30	Tally 47
13	Tally 39	31	Tally 48
14	Tally 39	32	Tally 48
15	Tally 40	33	0v
16	Tally 40	34/35	+12V
17	Tally 41	36	0v
18	Tally 41	37	GND

RELAY 17 -32 OUTPUT CONNECTOR D37 SOCKET			
Pin		Pin	
1	Tally 49	19	Tally 58
2	Tally 49	20	Tally 58
3	Tally 50	21	Tally 59
4	Tally 50	22	Tally 59
5	Tally 51	23	Tally 60
6	Tally51	24	Tally 60
7	Tally 52	25	Tally 61
8	Tally 52	26	Tally 61
9	Tally 53	27	Tally 62
10	Tally 53	28	Tally 62
11	Tally 54	29	Tally 63
12	Tally 54	30	Tally 63
13	Tally 55	31	Tally 64
14	Tally 55	32	Tally 64
15	Tally 56	33	0v
16	Tally 56	34/35	+12V
17	Tally 57	36	0v
18	Tally 57	37	GND

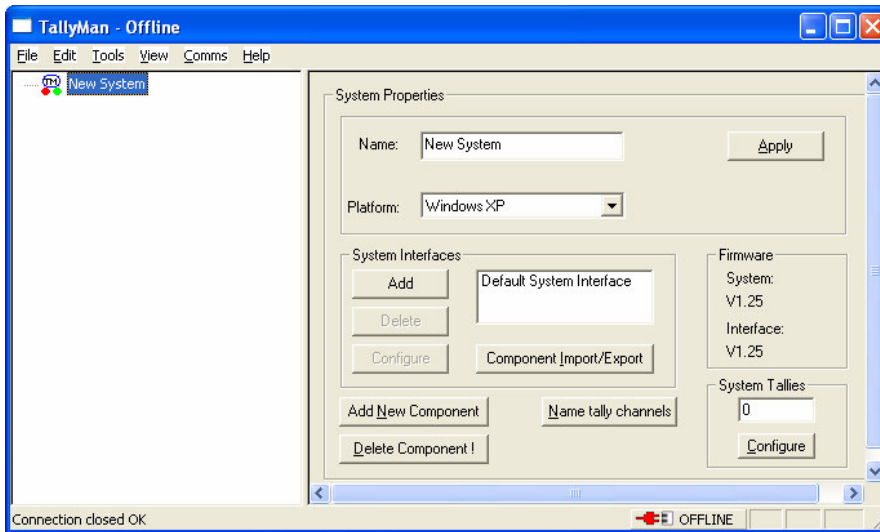
The following is relevant for the ESP-1R+ only. The additional D37 connectors provide in addition to the ESP-1R:

RELAY 33 - 48 OUTPUT CONNECTOR D37 SOCKET			
Pin		Pin	
1	Tally 65	19	Tally 74
2	Tally 65	20	Tally 74
3	Tally 66	21	Tally 75
4	Tally 66	22	Tally 75
5	Tally 67	23	Tally 76
6	Tally 67	24	Tally 76
7	Tally 68	25	Tally 77
8	Tally 68	26	Tally 77
9	Tally 69	27	Tally 78
10	Tally 69	28	Tally 78
11	Tally 70	29	Tally 79
12	Tally 70	30	Tally 79
13	Tally 71	31	Tally 80
14	Tally 71	32	Tally 80
15	Tally 72	33	0v
16	Tally 72	34/35	+12V
17	Tally 73	36	0v
18	Tally 73	37	GND

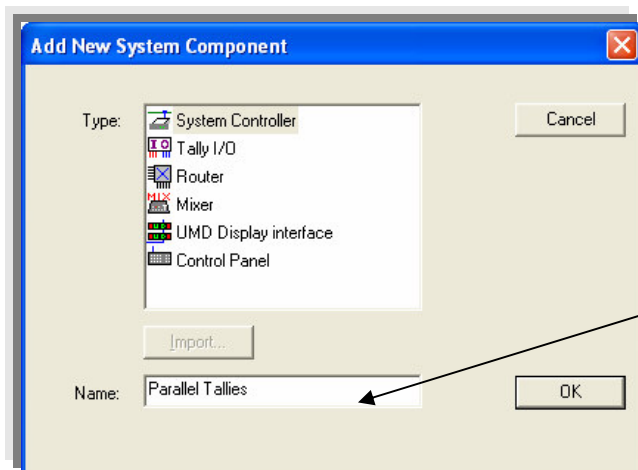
RELAY 49 - 64 OUTPUT CONNECTOR D37 SOCKET			
Pin		Pin	
1	Tally 81	19	Tally 90
2	Tally 81	20	Tally 90
3	Tally 82	21	Tally 91
4	Tally 82	22	Tally 91
5	Tally 83	23	Tally 92
6	Tally 83	24	Tally 92
7	Tally 84	25	Tally 93
8	Tally 84	26	Tally 93
9	Tally 85	27	Tally 94
10	Tally 85	28	Tally 94
11	Tally 86	29	Tally 95
12	Tally 86	30	Tally 95
13	Tally 87	31	Tally 96
14	Tally 87	32	Tally 96
15	Tally 88	33	0v
16	Tally 88	34/35	+12V
17	Tally 89	36	0v
18	Tally 89	37	GND

6.0 Configuration

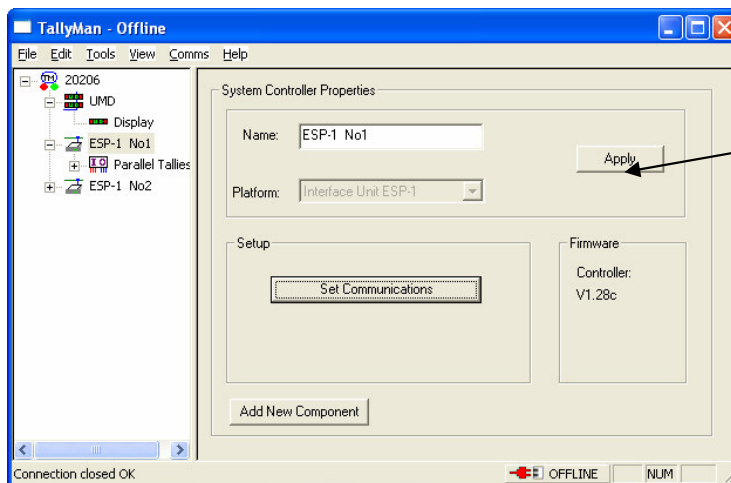
Click on **Add New Component** on the main screen. The ESP-1x is a System Controller. Make sure you select the correct item.



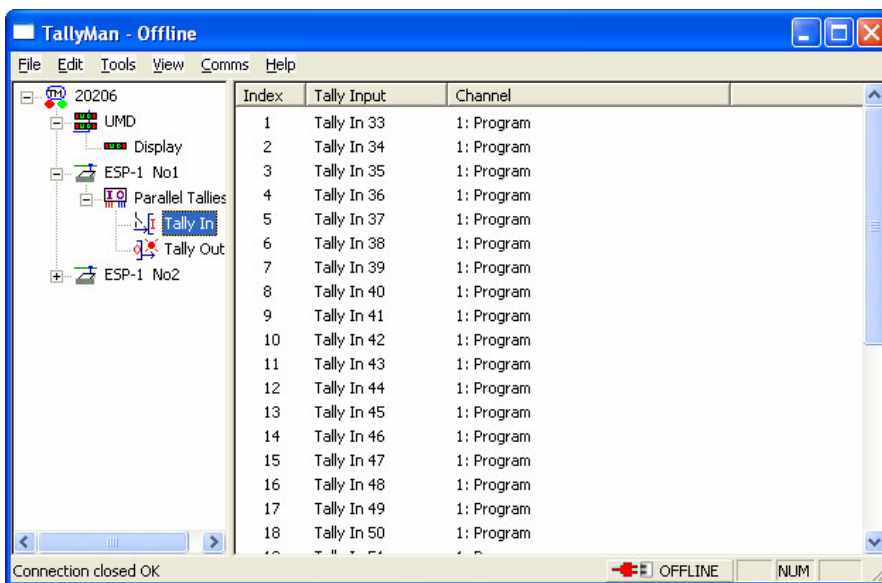
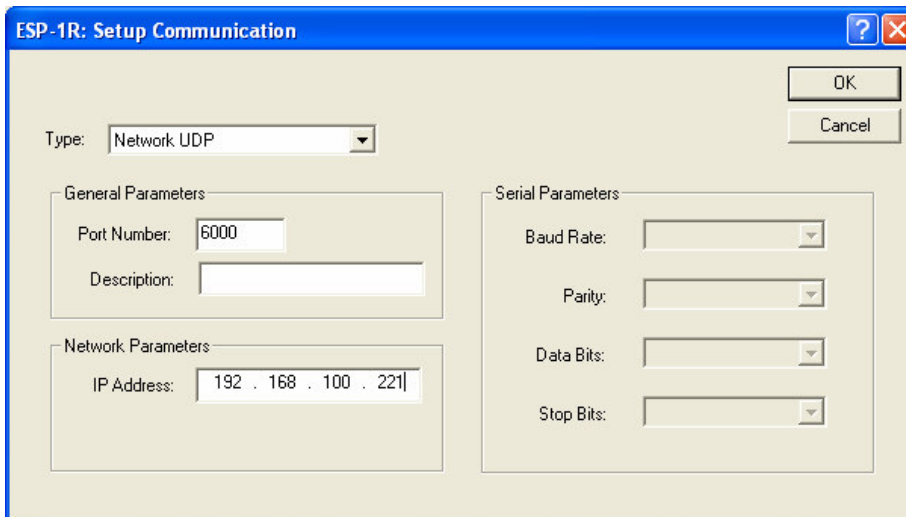
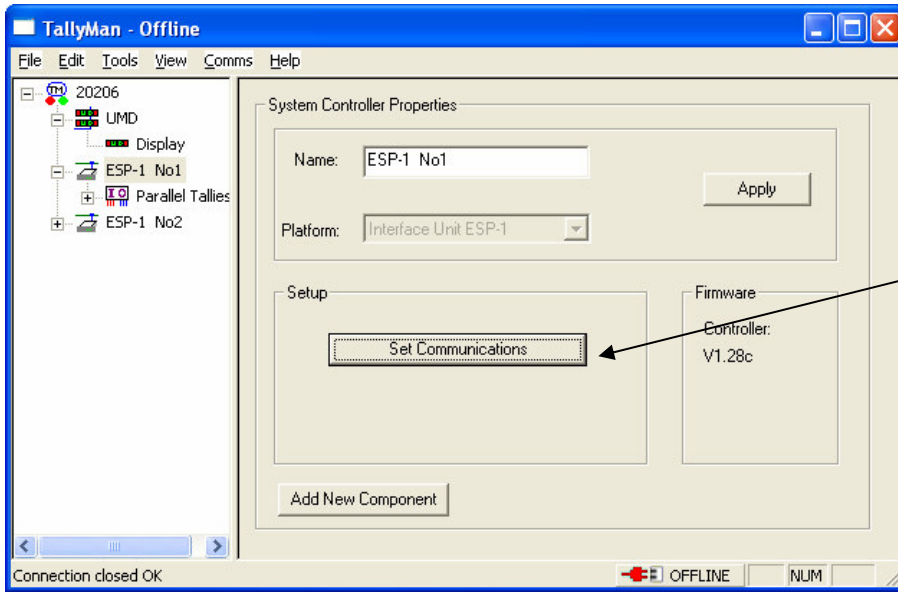
From the **Add New System Component** list select **System Controller**.



Type in a Name



Select Interface Unit ESP-1.
Then press Apply

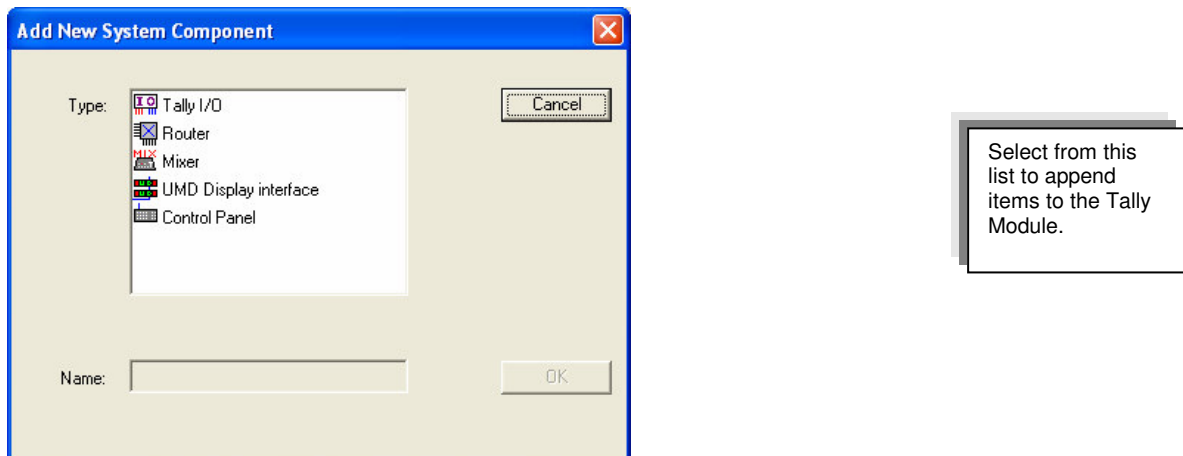
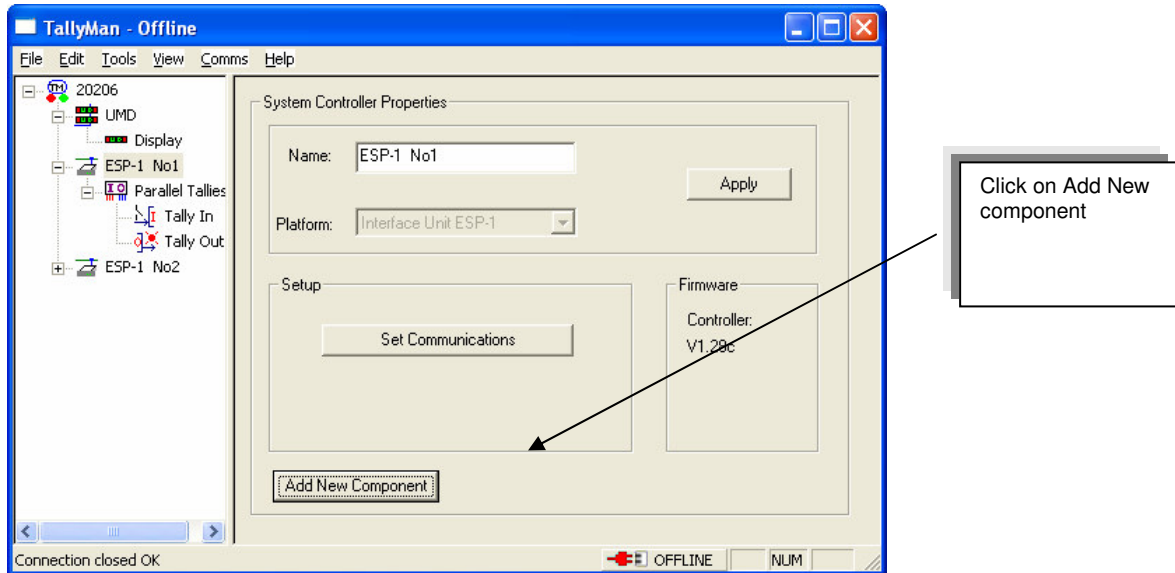


Assign the Tally Ins to a Channel and map the Tally Outs as required.

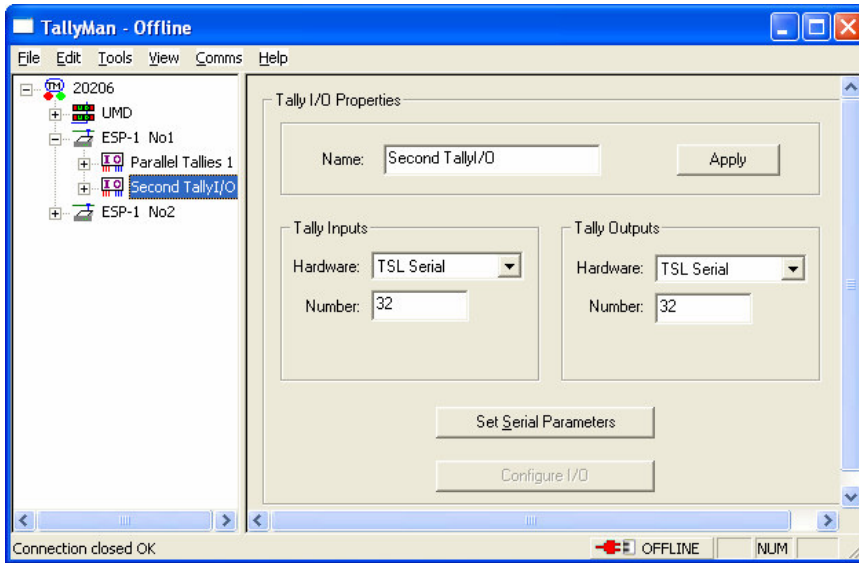
For further details see Tallies, Section 6.

Items may be connected serially to this module as a convenient way of attaching equipment to the TallyMan system.

Click on **Add New Component** when the Tally Module is highlighted.



Another Tally I/O (for example) may be added or any of the other modules may be chosen and connected via the RS422 link on the ESP-1R+ module.



This shows that a Second Tally I/O has been added. Mixers, Routers and UMDs may be connected via this method.

If other modules are added, they are treated exactly as though they have been added to the main system, as far as configuring is concerned.

7.0 Changing the TCP/IP Address.

Windows Hyper Terminal program is used to change these settings.

Connect to the unit's serial port using the following cable.

ESP-1R+ Serial Connector D9 PLUG	Computer Port D9 SOCKET
Pin Number	Pin Number
2	2
4	5 (Gnd)
8	3

Open the HyperTerminal program in Windows and set the Hyper Terminal parameters to default.

Connect the computer cable to the ESP-1R+ unit.

Plug in the power to the ESP-1R+ and after about 30 seconds or so the following screen will be seen.

```
ESP-1 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
NET+WORKS Version 6.0
Copyright (c) 2003, NETsilicon, Inc.
PLATFORM: connectme
APPLICATION: TallyMan Embedded
-----
NETWORK INTERFACE PARAMETERS:
  IP address on LAN is 192.168.100.222
  LAN interface's subnet mask is 255.255.255.0
  IP address of default gateway to other networks is 0.0.0.0
HARDWARE PARAMETERS:
  Serial channels will use a baud rate of 9600
  This board's serial number is N99999999
  This board's MAC Address is 00:40:9D:23:61:36
  After board is reset, start-up code will wait 1 seconds
  Default duplex setting for Ethernet connection: phy Default
-----
Press any key in 1 seconds to change these settings.
Connected 0:07:07  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

Hit a key whilst the screen is loading.

```
ESP-1 - HyperTerminal
File Edit View Call Transfer Help
NET+WORKS Version 6.0
Copyright (c) 2003, NETsilicon, Inc.

PLATFORM: connectme
APPLICATION: TallyMan Embedded

-----
NETWORK INTERFACE PARAMETERS:
IP address on LAN is 192.168.100.222
LAN interface's subnet mask is 255.255.255.0
IP address of default gateway to other networks is 0.0.0.0
HARDWARE PARAMETERS:
Serial channels will use a baud rate of 9600
This board's serial number is N99999999
This board's MAC Address is 00:40:9D:23:61:36
After board is reset, start-up code will wait 1 seconds
Default duplex setting for Ethernet connection: phy Default

-----
Press any key in 1 seconds to change these settings.

Press A to Accept the settings, or M to Modify?

Connected 1:13:31 Auto detect 9600 8-N-1 SCROLL CAPS NUM Capture Print echo
```

Select **M** to modify the settings.

Enter **N** for most options to change until you get to the IP setting. Ensure that the subnet mask remains at 255.255.255.0 and that the Default Gateway remains at 0.0.0.0

The password, if requested is:	telsys.
The unit will be set by default to:	192.168.100.221
Subnet Mask:	255.255.255.0

8.0 Firmware updating info

Firmware note for ESP-1R+ only.

As from March 2009 approx., the current firmware loaded is V1.69. For TallyMan units also running this version, it is essential that older ESP-1R+ are updated.

V1.69 ESP1-R+ units will connect with all versions of TallyMan. Updating files are available from our website.

9.0 The Internal Power Supply Specification

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

Specifications

Input Voltage	100v - 240 AC auto ranging
Output Voltage	18 – 24V 3.2A
Input Frequency	50 - 60 Hz
Storage Temperature	-20°C - +60°C
Relative Humidity	10% - 90% non-condensing
Cooling	Convection cooled
Safety Approvals	UL E209833,