



**Television  
Systems Limited**

**TallyMan**

THE ONLY TALLY SYSTEM YOU'LL EVER NEED

## ***Tallies***

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

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## **Tallies**

- 1.0 Introduction.**
  - 2.0 Tally Channels**
  - 3.0 Tally Inputs – Parallel**
  - 4.0 Tally Outputs – Parallel**
  - 5.0 System Tallies.**
  - 6.0 Tallies and Vision Mixers**
  - 7.0 Inhibited Tallies**
  - 8.0 Tallies and Routers**
  - 9.0 Tallies and UMDs**
  - 10.0 The Tally Map**
  - 11.0 The Tally Mimic**
  - 12.0 Notes on Mixer and Router tallying**
- Appendix 1 – Tally/GPO control using Omnibus code**

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## 1.0 Introduction.

Tallies may be connected to the TM1 or to a ESP-1R that is under control of the TM1.

Tallies for the cameras and UMDs etc. may therefore be derived from external inputs from a Parallel Input/Output (I/O) interface such as the ESP-1R or may be created within the TallyMan program.

Tallies from a vision mixer might not be used directly but rather as information with TallyMan i.e. mixer status or it may well be possible to use the **Tally In** interface provided with several of the router modules

TallyMan offers Tally Channels (16) to give a tally a second crucial identity in addition to its actual tally number.

Previous programs / systems have often provided only two tally channels such as red and green.

In some circumstances, both a red and a green tally might have been linked to a router source via the tallied router buses – one bus has a red tally as it goes to air and another bus has a green tally assigned to it as it feeds a VTR for, say, behind-the-goal-action – Iso recording.

In TallyMan, this idea is extended from two to sixteen channels.

In addition, TallyMan uses System Tallies. These are tallies that may be made from other tallies, possibly using logical operators such as AND, OR etc. to define how the tally inputs to the System Tally behave.

In addition, several tallies may be assigned to a System Tally that “belong” to different Tally Channels. In effect, a System Tally may be considered as a “multicore cable” which can carry several tallies and tally channels. In this analogy, these tallies are the individual wires of the multicore cable. A cable with several red cores would have several tallies all belonging to the “red” family and it may also have different colour cores, which in this analogy, would be tallies belonging to different channels or families.

An output mask is available whereby channels are selected to determine which input tallies are actually carried in the System Tally output. This could vary on a show by show basis.

It is important to remember that when mapping tallies to objects, (router destination or sources) tallies as a rule travel to an earlier source. So, a tally set to a router destination will tally the selected router source which may then be mapped to an output pin. In addition, tallies mapped to a router source will be shown on a destination display because that display is showing the status of that router source.

**BUT:**

If tallies are mapped to a router source, the destination that selects that tallied source is not itself tallied and therefore that destination cannot be used to set a tally to an output pin or used as a control to drive a virtual tally 2 x 1 router across.

In this latter case, if a Direct Tally is set to the destination, the destination is itself tallied and may then be used as the controlling object.

## 2.0 Tally Channels

The TallyMan Program has 16 tally channels.

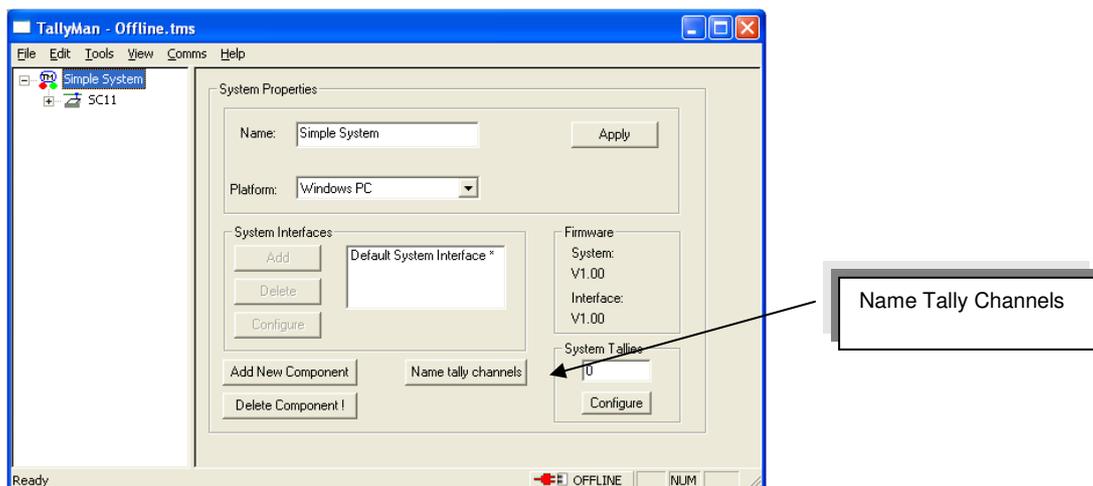
Any tally in the system must be labelled as belonging to one of these channels. This is comparable to that found in other systems (e.g. Winsoft); some tallies might be Red with some uniquely specified as Green for Iso-recording.

In TallyMan this is equivalent to Red tallies being labelled as **Program** (a default name which may be user changed) and Green which is equivalent to the label **Iso 1**. This is important so that groups or Channels of a tally type may subsequently be mapped to UMD LEDs or to physical output pins, perhaps via a router destination and hence source.

These individual channels may need to be extracted to unique physical pins for external triggering of tally lights on cameras, for example.

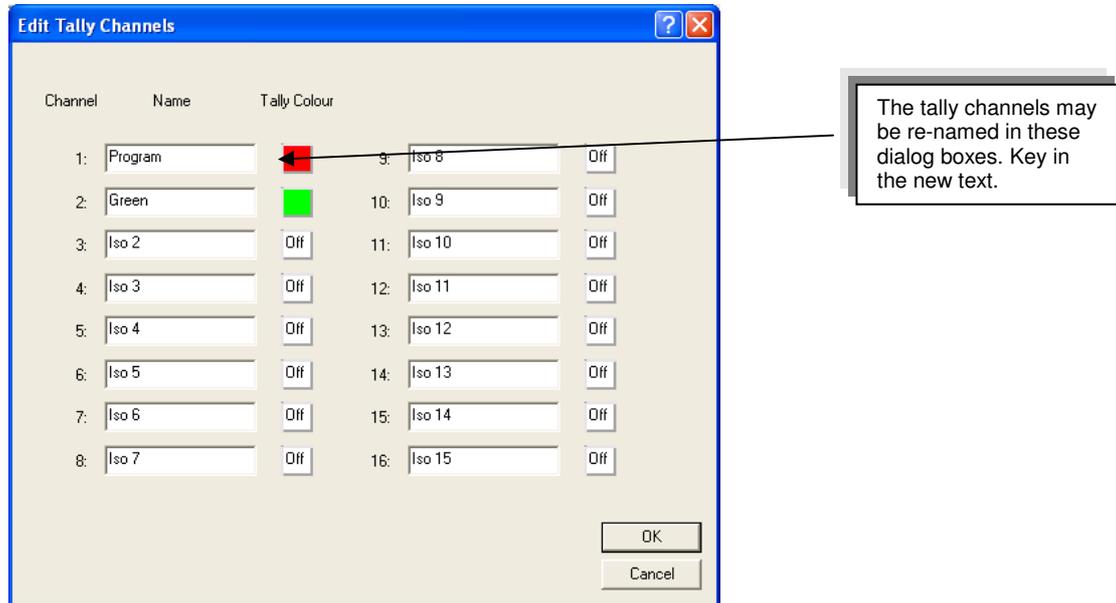
It will be seen that each dialog box for routers and UMDs has all the configuring information for that item in that box.

### 2.1 Naming the Tally Channels.



Click on **Name Tally Channels**. Colours may also be assigned but note that only a Tally Out Lamp and the Tally Mimic will show these colours.

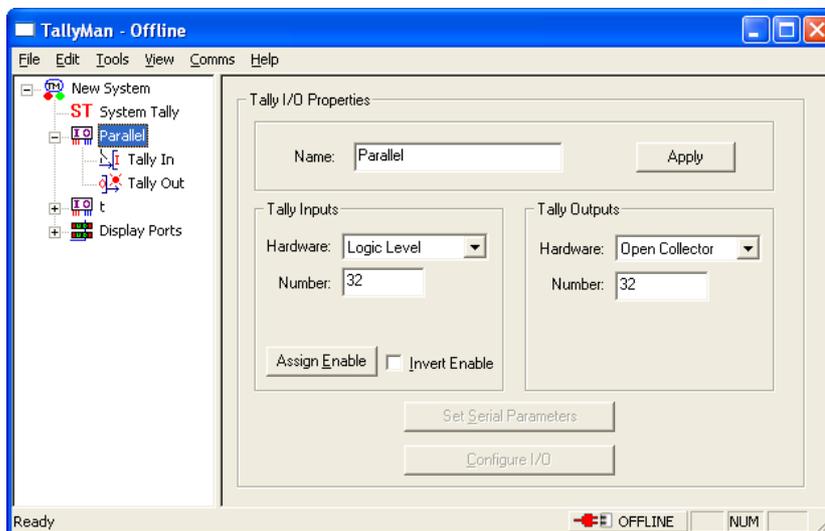
This screen will now be shown.



### 3.0 Tally Inputs – Parallel Interface

A TM1 or TM2 selected platform will set a parallel interface as standard with the Logic Level set as the Tally Input type and Open Collector set as the Tally output type.

In general, Tally Outputs will match the Tally Input type selected.



Note: Additional parallel interfaces are available via the ESP-1/R.

Other types for input for the Parallel Interface.

Tallies from other sources are available – e.g. tallies from other networked TallyMan systems or from, say, an Omnibus engine as serially provided GPIs

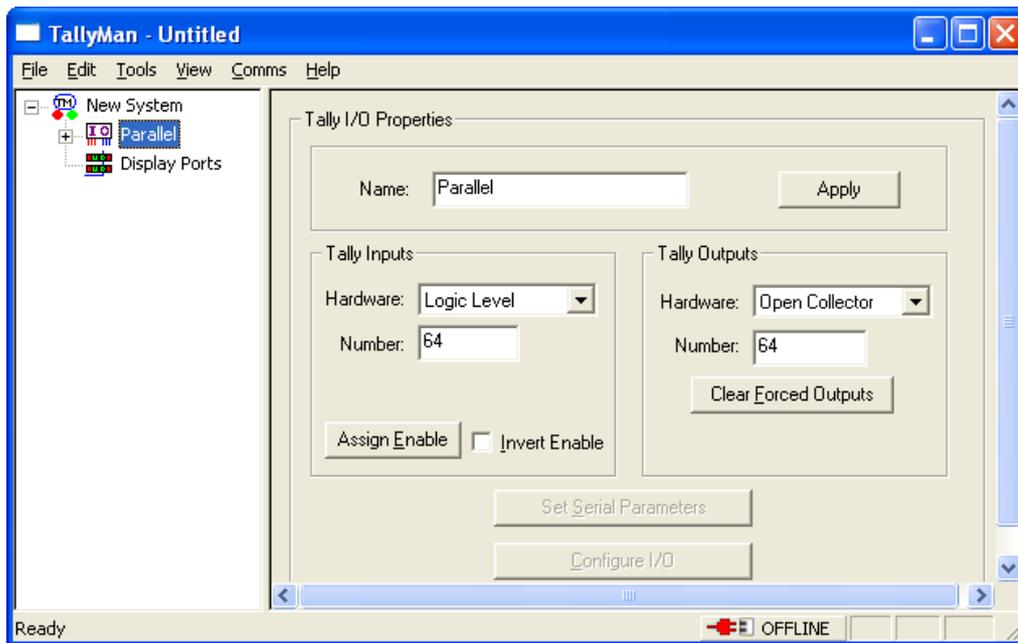
Please see Appendix 1 for Omnibus details.

Set the number of tally ins and outs that you need by changing the numbers in the Number box and then press Configure I/O.

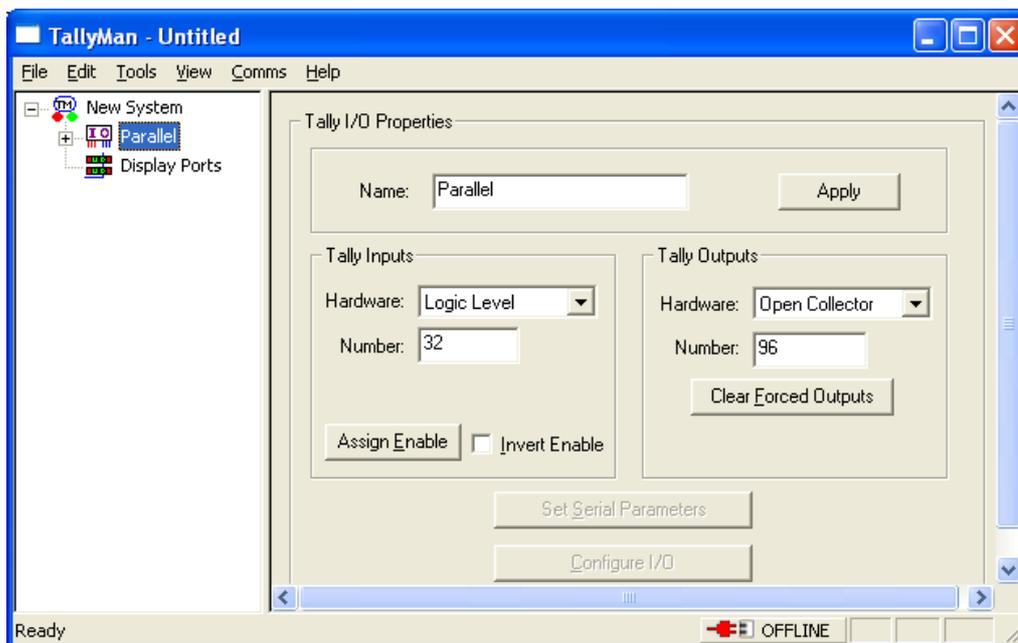
For a TM1 keep the total tally numbers to 64 and for the TM2 keep the tally numbers to a total of 128.

The units are sent out from the factory configured for either 32 in / 32 out (TM1) or 64 in / 64 out (TM2)

For a TM2



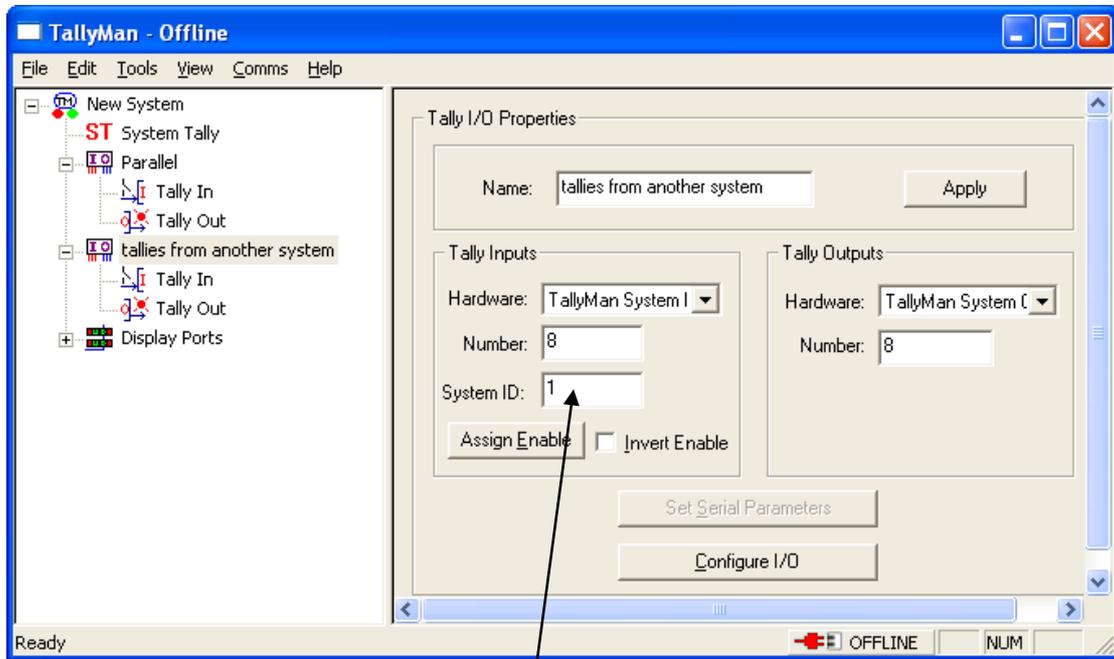
Changed to 32 in and 96 out.



TallyMan system tallies in

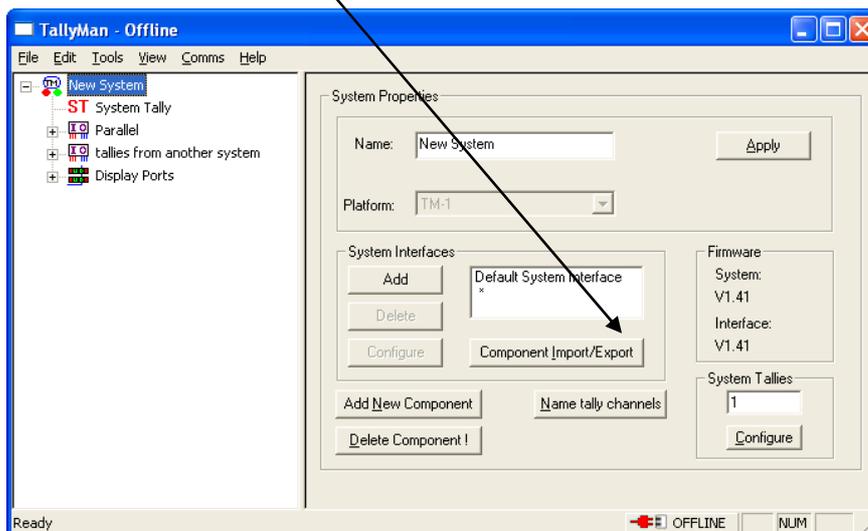
This is not the same as a **System Tally**.

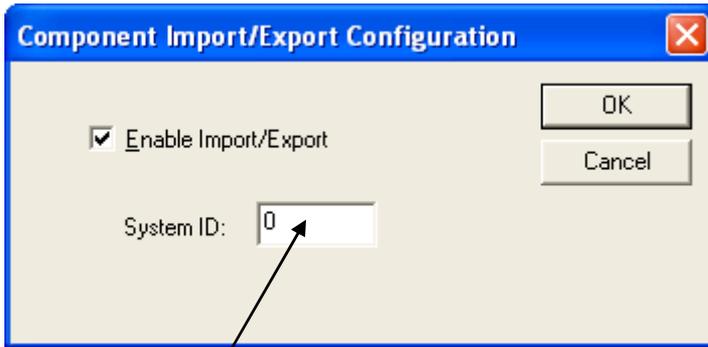
It is possible to export tallies from another TallyMan system serially via Ethernet and receive them locally by setting a Tally I/O module to read the remote TallyMan tallies.



The TallyMan System ID that is sending the tallies.

The Component Import/Export box must be enabled in the main config screen

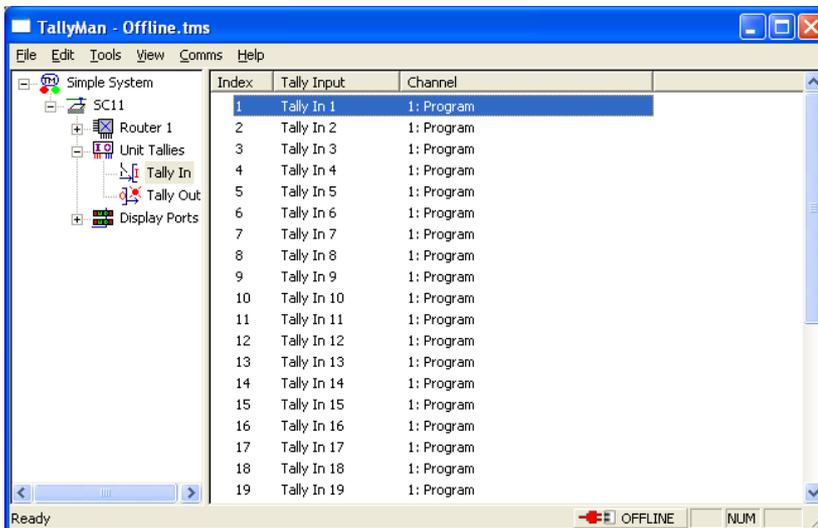




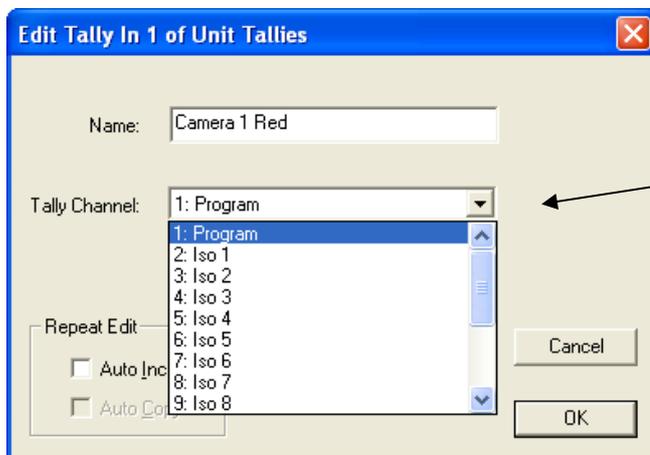
Local system ID.

### Setting up the Tally Ins.

Select the Tally In list.



A double-click on a tally input will show this dialog box.



The drop-down box will allow the tally to be assigned to a particular Tally channel.

This shows Tally 1 in from a Parallel I/O interface as having the user-defined **Name** as **Camera 1 Red**. It has been set to the **Program** Tally Channel.

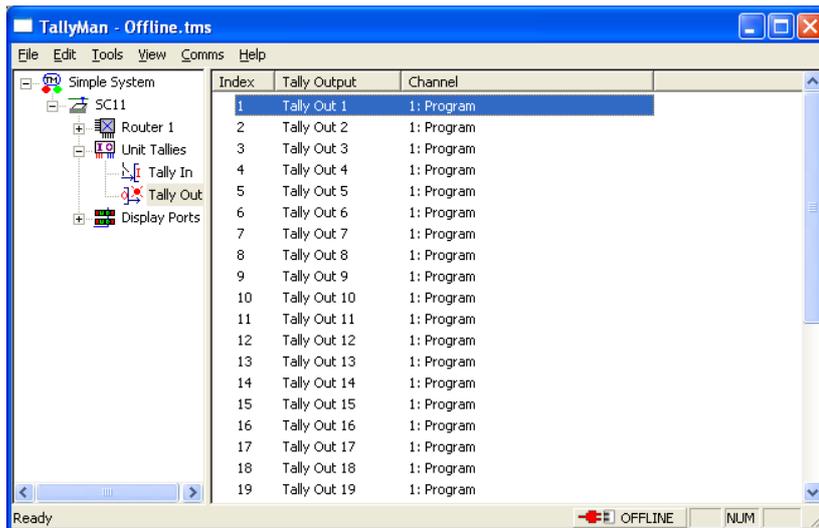
All incoming tallies may be set to any of the tally channels.

Note: Camera tallies will more normally be derived from information from the Mixer-generated tallies. Please see the section - 6.5 Tallies and Vision Mixers.

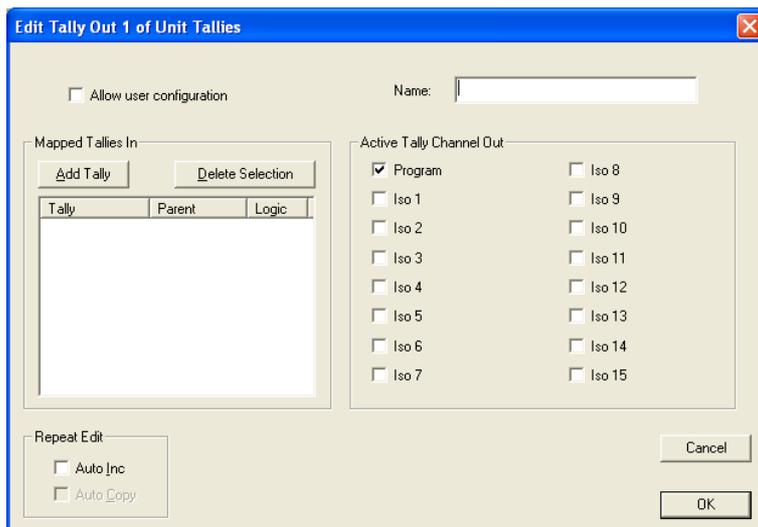
The tallies may be assigned to either the left or the right side UMD LEDs as a Direct Tally or output to a unique pin on a Parallel I/O interface unit for tallies out to the camera(s).

#### 4.0 Tally Outputs – Parallel Interface

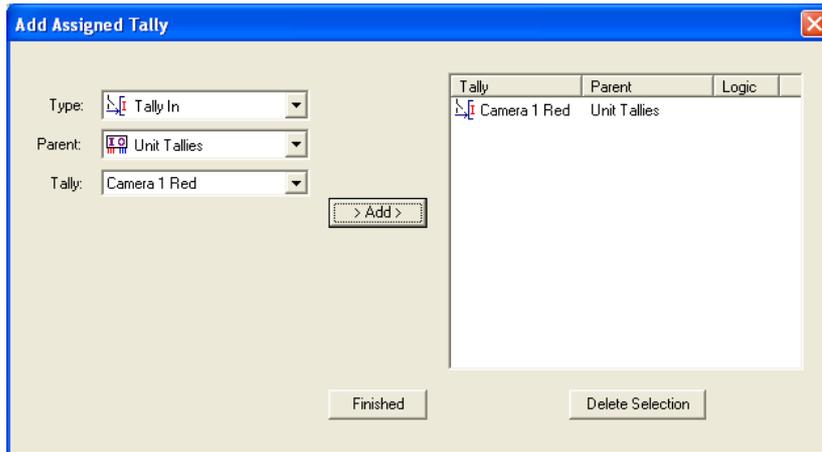
Select the Tally Out list.



Double click on an output

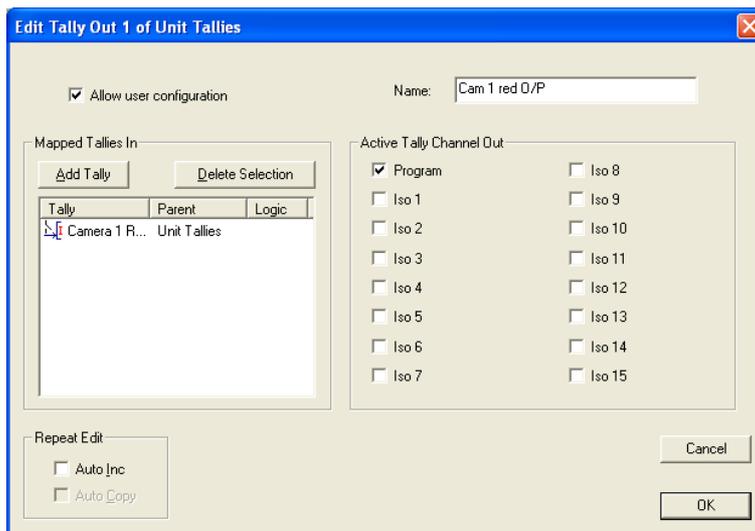


Add a tally to the output.



- Select the **Type**, in this case a Tally In.
- Select the **Parent** from the allowable list shown in the drop-down box.
- Select the **Tally** number.
- Click on **Add**

Click on **Finished**.



The Active Tally Channel Out area is a mask which allows the checked tally channel type through to the Output.

This shows that Tally 1 out from the Parallel I/O interface unit has been mapped to Tally 1 in from the Parallel I/O interface unit. As this input tally was flagged as Program, and Program in the **Active Tally Out** box has been checked, a tally is output.

**Allow user configuration** box has been checked in this example.

For a tally to be output the **Active Tally Channel Out** box must be checked to match the input tally attributes.

**Repeat Edit** will allow-

Auto Increment to the next Tally Output.

Auto copy will copy the input tally to the next Tally Output box.

Several Tally Ins/System Tallies may be mapped to a Tally Out.

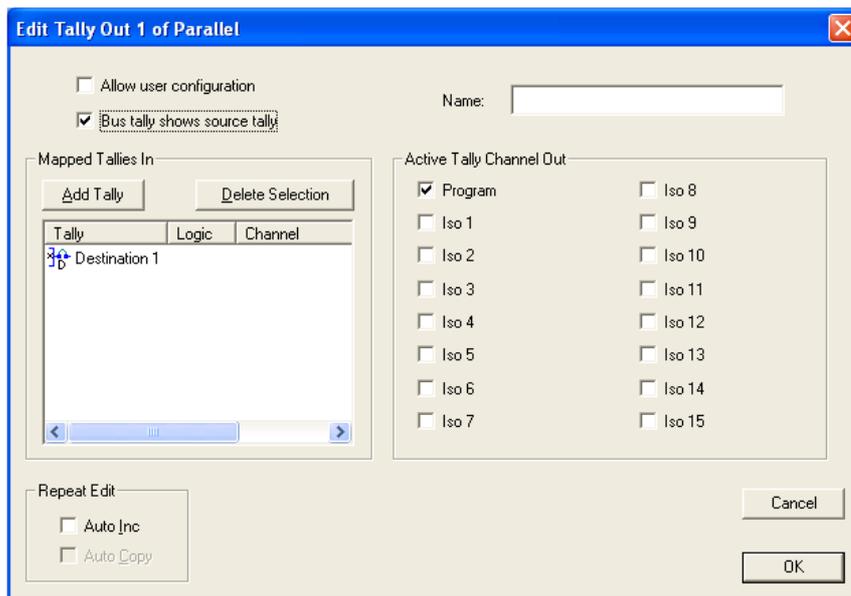
The **Active Tally Channel Out** mask must be set to allow the **Mapped Tallies In** to be output.

These dialog boxes enable User-defined Tally Outs to be made on a show-by-show basis, if necessary.

If the **Allow user configuration** box is checked, this screen is available to all users (non passworded).

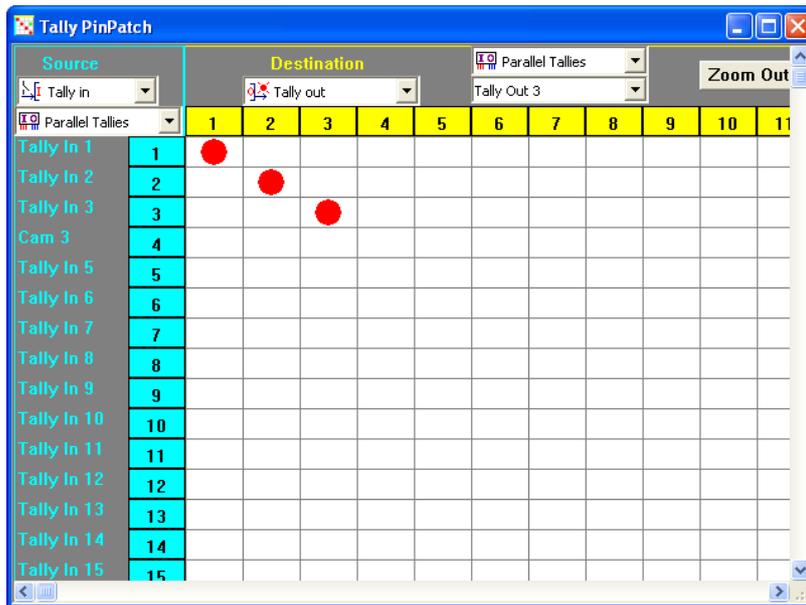
Tallies may now be mapped to anything that requires a tally; router buses, sources, UMDs or Physical o/p pins. The appropriate mapping is carried out in the respective dialog boxes

Note that a tally output may be mapped to a router destination and a check box may be set so that the O/P will show the status of the selected (tallied) source in the same way that a UMD would.



Check the **Bus tally shows source tally** box

Tallies also may be entered via the Tally Pin Patch found via **Tools > Tally PinPatch**.

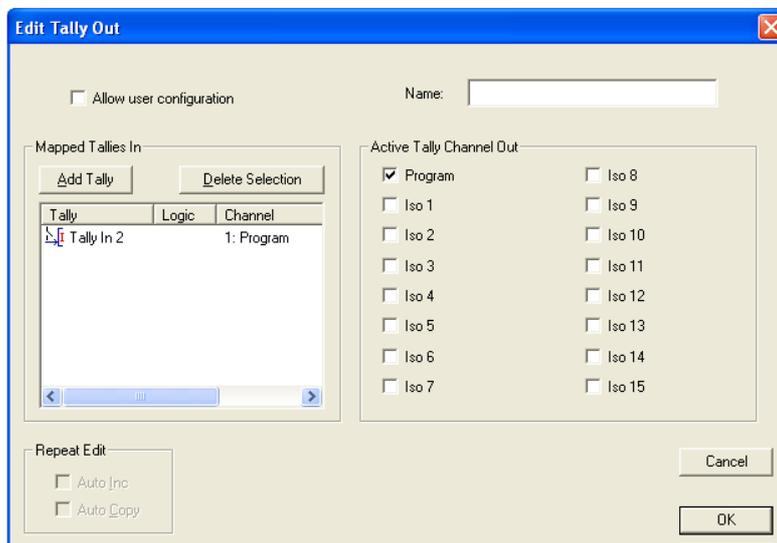


Select the Destination first.

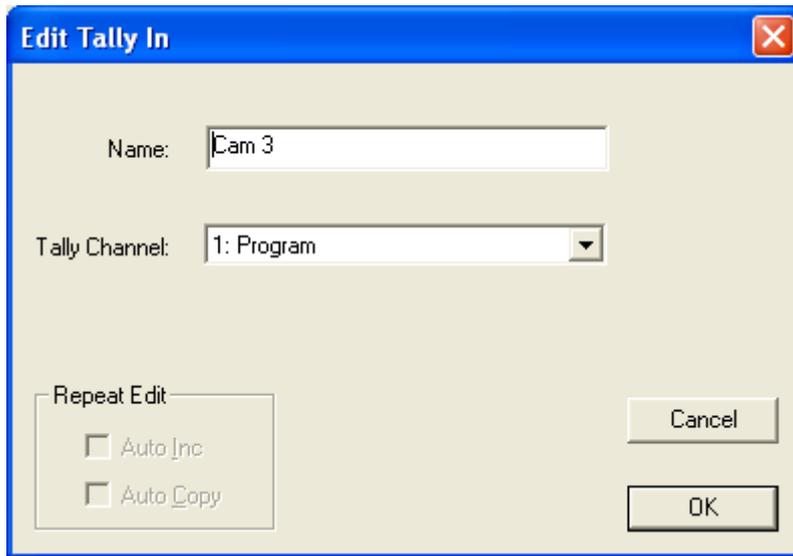
A click on the appropriate drop down arrows on any valid tally destination will allow tallies to be mapped to the correct area.

A click on the drop down arrow in Source will allow any valid tally source to be selected.

A RH mouse click in the Destination column will show all tallies assigned to this channel.



A Shift + RH mouse click in the Source row will show the tally input channel details.



When System Tallies are in use:



The orange coloured destinations show which destinations already have other tallies mapped to them.

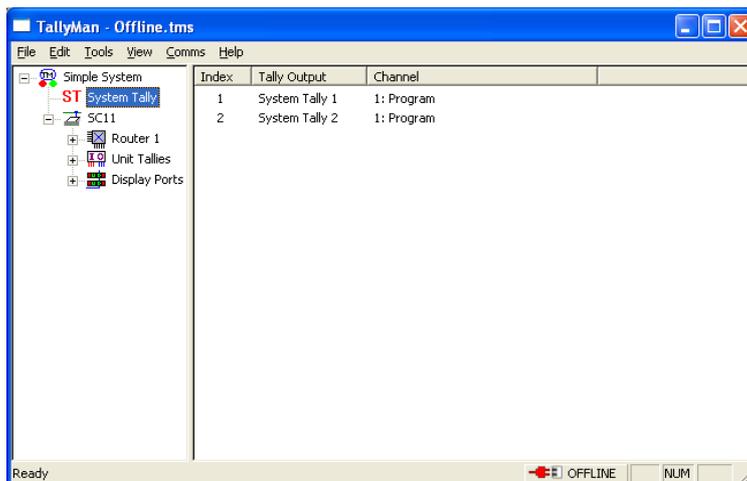
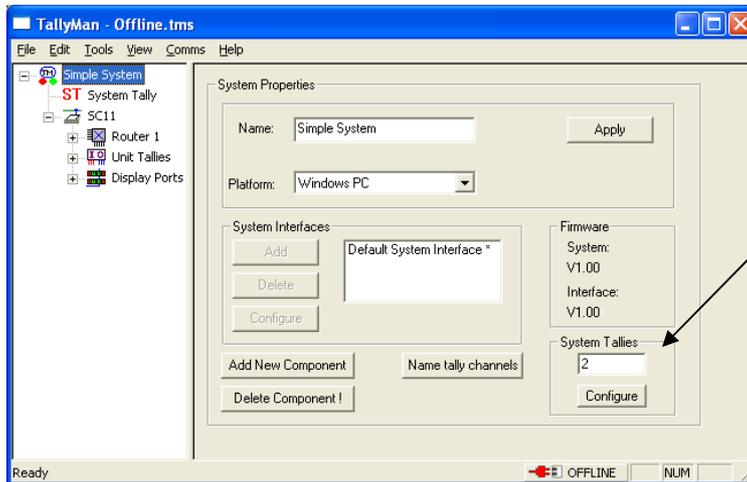
*Tip:*

*Select the Destination for the tallies first and then the available sources will be visible.*

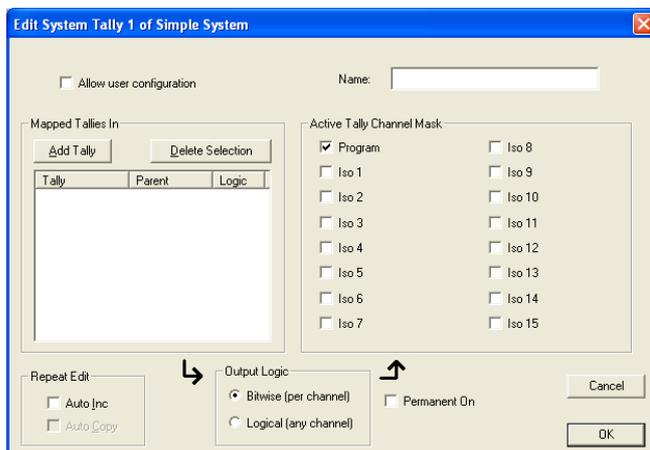
## 5.0 System Tallies.

System Tallies are tallies derived from other tallies or may be permanently ON tallies.

A System Tally may be regarded as a “multicore cable” carrying, possibly, several other tallies, which may be associated with different Tally Channels (Program, Iso1, Iso2 etc.). The Active Tally Output Channel can act as either a mask or as a routing tool, depending on how the Output Logic box is set.



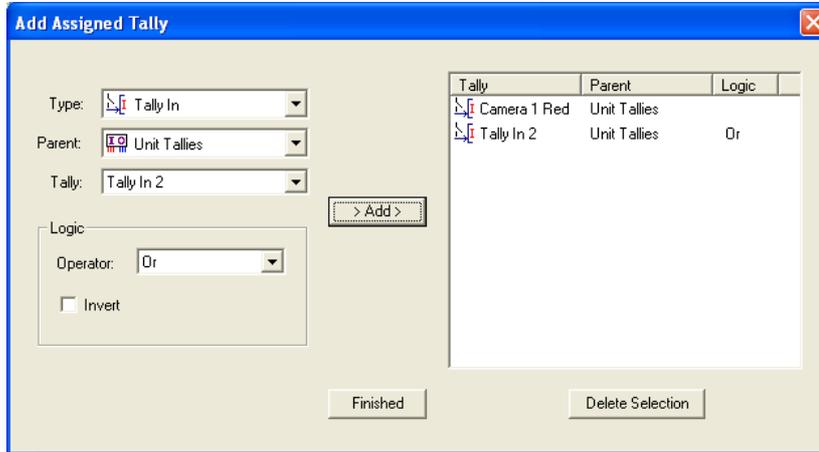
A double click on the System Tally out will show this dialog box.



## 5.1 Mapped Tallies In

### Add Tally

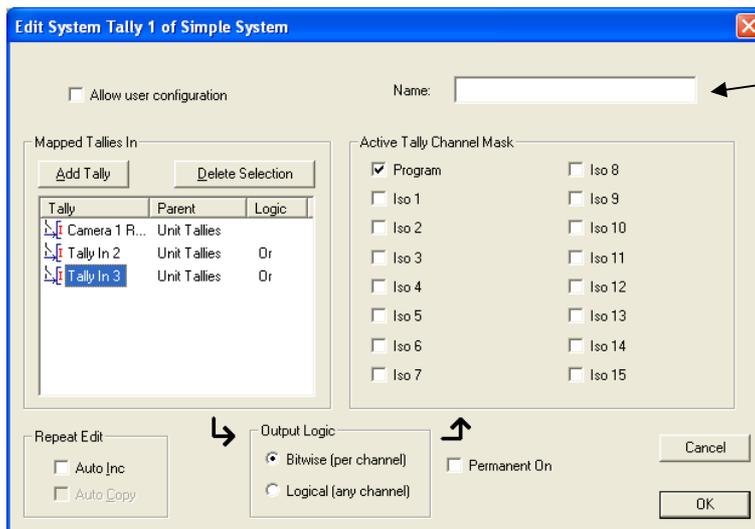
Input Tallies will be associated with one of the Tally Channels. It may be seen that combinations of tallies may form a System Tally.



Tally 1 and Tally 2 have been OR'd together to make a new System Tally 1

This shows a System Tally created from a Parallel I/O Interface associated with a System Controller. Parallel Tally In numbers 1 and 2 are OR'd together.

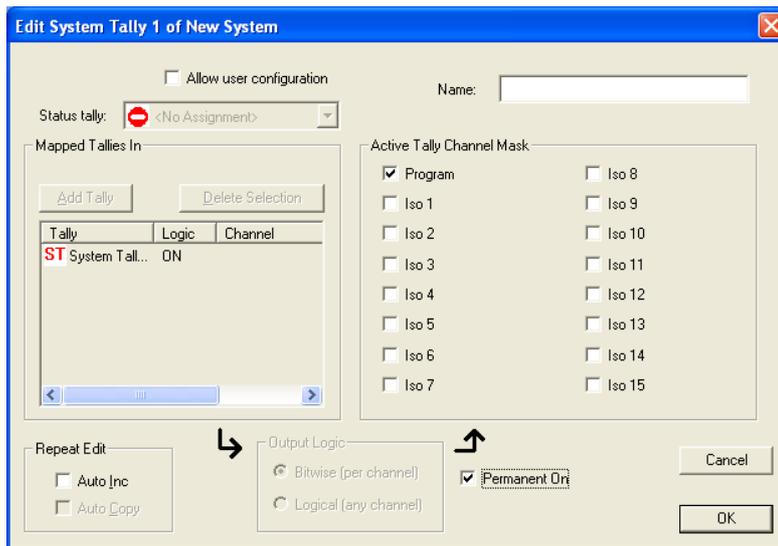
### Delete Selection



A Name for the System Tally may be entered here.

Use Ctrl and click on the tallies as required to delete the tallies from the input box using **Delete Selection**.

## 5.2 A Permanently ON System Tally.



This shows a System Tally has been created and is set to be Permanently ON and is allocated to the channel called Program/Red Tallies.

These names may be changed freely.

The Configurator can allow User access by checking the box.

A use of a permanently ON System Tally.

A permanently ON System Tally may be set, for example to the PGM bus of a vision mixer.

As the mixer cross point selection is known by TallyMan, the mixer sources are therefore tallied.

If the mixer source is linked to a Tally Out pin, the camera may then be tallied.

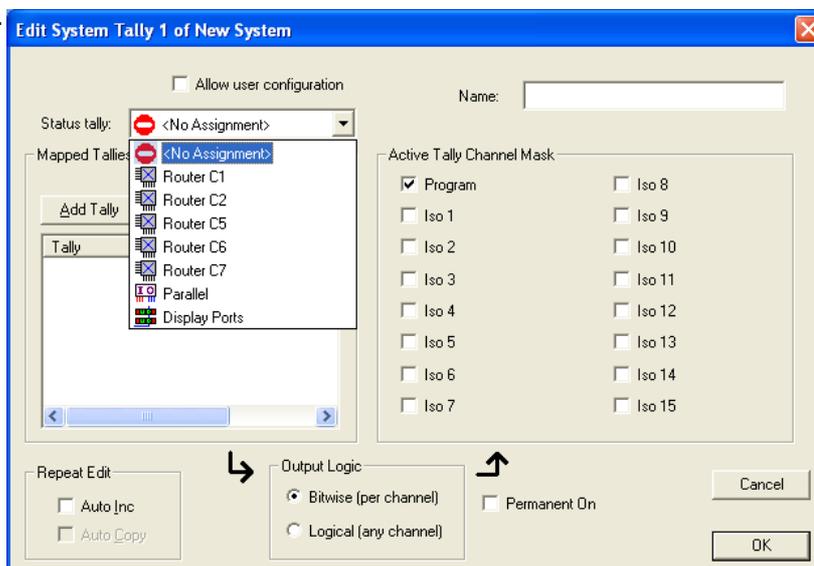
**Also:** A router destination feeding the mixer source will also be tallied (the assignment is done in TallyMan) which will in turn tally the selected router source.

This router source is tallied as On-Air.

If the router source is linked to a Tally Out pin, the camera may then be tallied.

## 5.3 Comms Status Tally

A System Tally may be used to indicate the status of the serial comms for any object.



The System Tally will be active for no link and inactive for good active comms.

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### 5.3 The Logic Operator

The operators, OR, AND, XOR and the inversion are allowed.

#### OR

Tally 1	Tally 2	Output
0	0	0
0	1	1
1	0	1
1	1	1

#### AND

Tally 1	Tally 2	Output
0	0	0
0	1	0
1	0	0
1	1	1

#### XOR

Tally 1	Tally 2	Output
0	0	0
0	1	1
1	0	1
1	1	0

#### Inversion

#### NOR

Tally 1	Tally 2	Output
0	0	1
0	1	0
1	0	0
1	1	0

#### NAND

Tally 1	Tally 2	Output
0	0	1
0	1	1
1	0	1
1	1	0

#### XNOR

Tally 1	Tally 2	Output
0	0	1
0	1	0
1	0	0
1	1	1

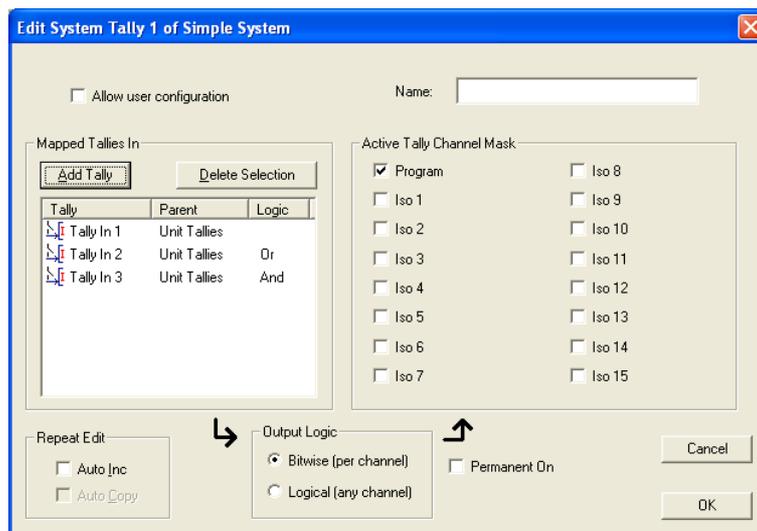
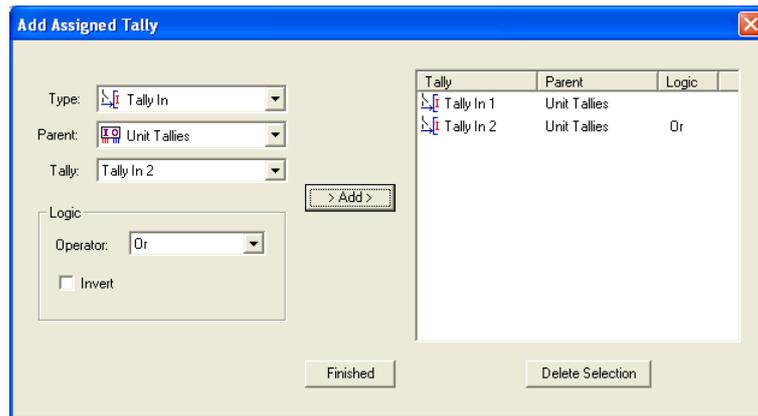
The logic operator adds tallies sequentially as they are added to the list.

E.g. (Tally 1 OR Tally 2) AND Tally 3 - then [(Tally 1 OR Tally 2) AND Tally 3] OR Tally 4.

## 5.4 Output Logic

### Bitwise

In the Bitwise mode the Active Tally Channel Mask boxes act as a mask for the tallies in the System Tally.



### Output Logic.

**Bitwise** outputs the tallies according to the logic operator. Input Tallies must be in the same Active Tally Channel.

### Logical

If both tallies are active, then the channels ticked in the output box will be active (the input channel associations are ignored)

The new System Tally 1 consists of two tallies OR'd, with a third one AND'd, taken from the Parallel I/O unit tally inputs and remains gated as Program.

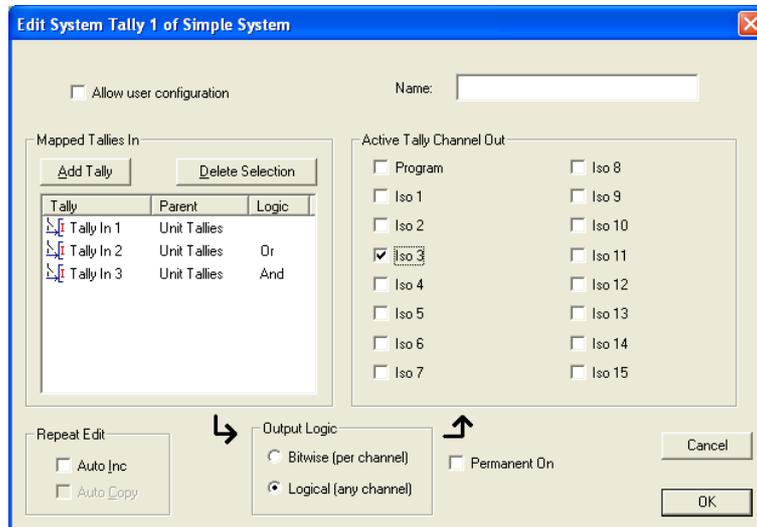
When the **Bitwise** button is selected the **Active Tally Channel Mask** boxes must be selected to match the **Mapped Tallies In** channels.

For example consider the above: Tallies 1 and 2 are associated with the Program channel. The logic operator is set to AND Tally 3 with Tallies 1 and 2. All tallies must belong to the same tally channel for the logic operator to work. When the tallies are active an output will be available that is associated with Program. Program must be checked in the Active Tally Channel Out mask for the System Tally to be output.

If there were a fourth tally input associated with Iso 4 channel and this is to be OR'd with the result of [Tallies 1, 2 and 3], for this tally to be output, Iso 4 must be checked too in the Active Tally Channel Out mask.

## Logical

The logical operator acts in the same way for the input tallies as described for Bitwise but the important difference is that the output may be mapped to a different **Active Tally Channel Out** from any of the input tallies, if desired.



In the Logical mode the Active Tally Channel Out boxes route the input tallies to a selected active channel.

The channel Iso 3 is shown here.

In this example, the tallies are output in Active Tally Channel Iso3.

## Summary

In the **Bitwise** mode the **Active Tally Channel Mask** boxes act as a mask for the tallies in the System Tally ("cable").

In the **Logical** mode the **Active Tally Channel Out** boxes route the input tallies to the selected active channel.

## 6.0 Tallies and Vision Mixers

In TallyMan, vision mixers are treated exactly as though they are routers.

*Tallies from a mixer are not necessarily used directly.* It is possible to tally a mixer destination to have sources tallied correctly. This is a use for a System Tally set to Permanently ON and assigned to the PGM bus.

If a tally is set to a mixer / router destination, any source that the destination selects will also be tallied as long as the mixer outputs router status.

This tallied router / mixer source may be assigned to a UMD and / or to a physical output pin via a Parallel I/O unit so that cameras may be tallied.

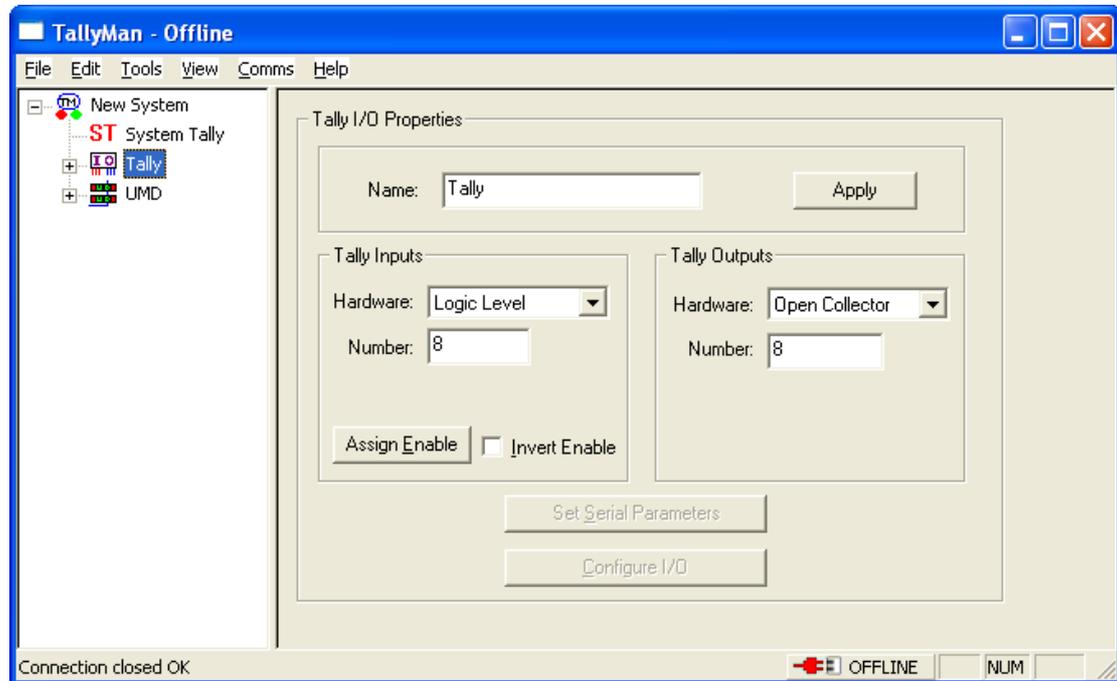
The tally information coming from the actual mixer into TallyMan is read so that cross point information is known.

*Tip: Several mixer modules do have a **Tally In** listing. Under these circumstances, as the Mixer's internal tally mapping probably needs to be use, it is advisable to map the **Tally In** inputs to the Mixer Sources as a first step.*

## 7.0 Inhibited Tallies

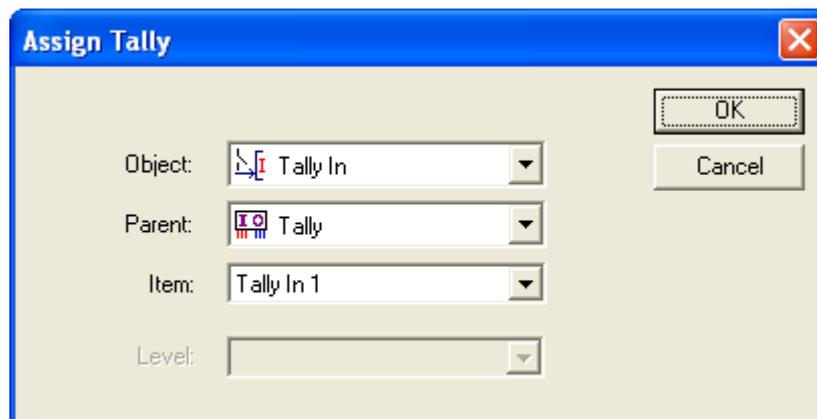
There may be a requirement to inhibit or enable tallies from an object (e.g.) the parallel Sony Mixer input tallies or from the parallel tally input on the TM1, so that in an emergency, all tallies from the mixer or parallel inputs are inhibited.

This may be done by using the Assign Enable feature.



Without any configuration all tallies will normally be enabled in the system.

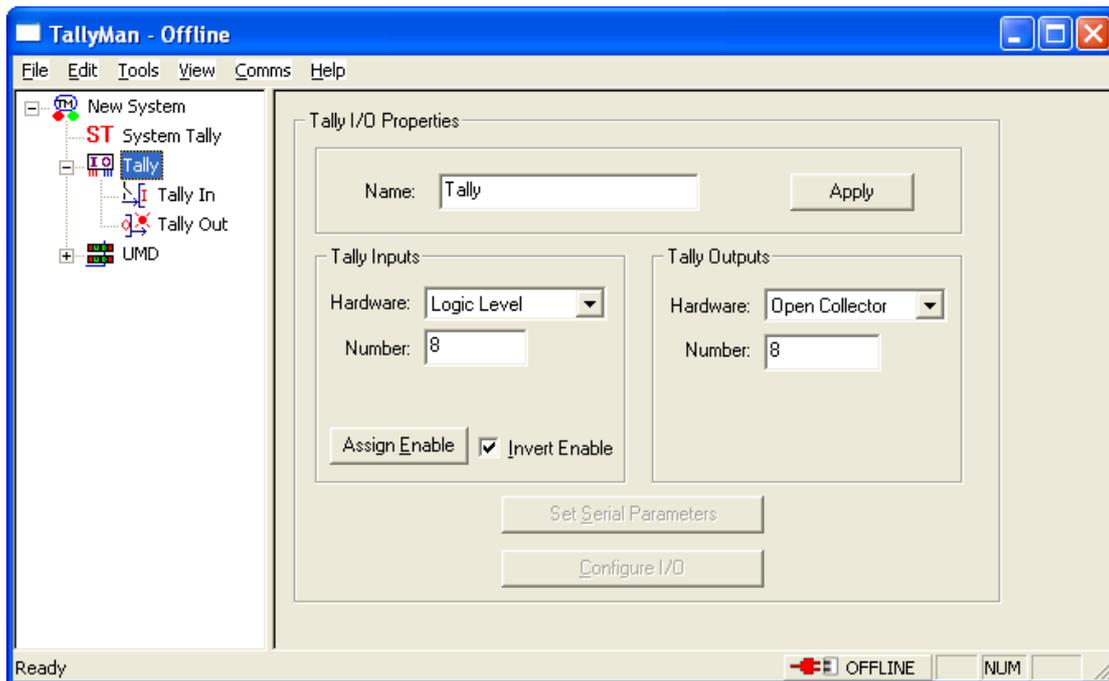
Press **Assign Enable**.



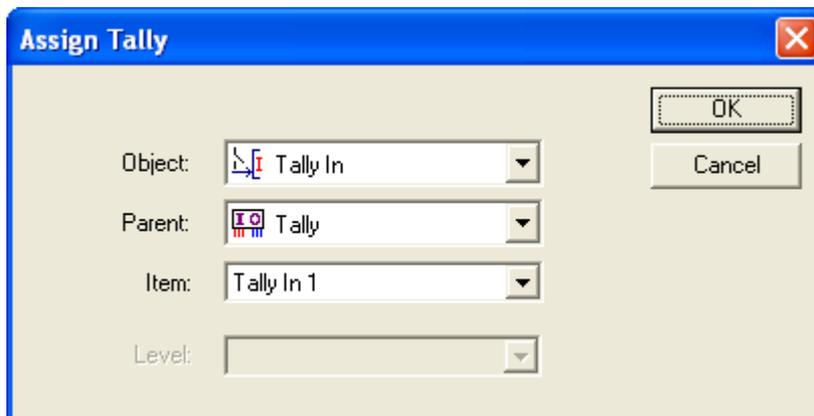
This shows that Tally 1 from the Parent called Tally has been assigned as the inhibiting tally.

When Tally In 1 is active, no tallies will be output from the object called Tally In.

## Invert Enable



Also



This now means that when Tally In 1 is active, tallies will only then be output from the object called Tally In.

## Notes

- The Tally Mimic under **Tools > Tally Mimic** will always show the actual incoming tally status.
- Even if an Object is inhibited, the activating tally for the inhibit function that belongs to that same object still remains active. Consider the case where there are both serial tallies (mixer) and parallel tallies (GPIs) in the same Object. The serial tallies are required to be inhibited but a parallel tally is needed for the inhibit action.

## 8.0 Tallies and Routers

If a tally is set to a router destination / bus, any source that the destination selects will also be tallied.

This tallied router source may be assigned to a UMD or to a physical output pin via a Parallel I/O unit such as the ESP-1/R so that cameras may be tallied.

The serial information coming from the actual router into TallyMan is read so that cross point information is known.

## 9.0 Tallies and UMDs

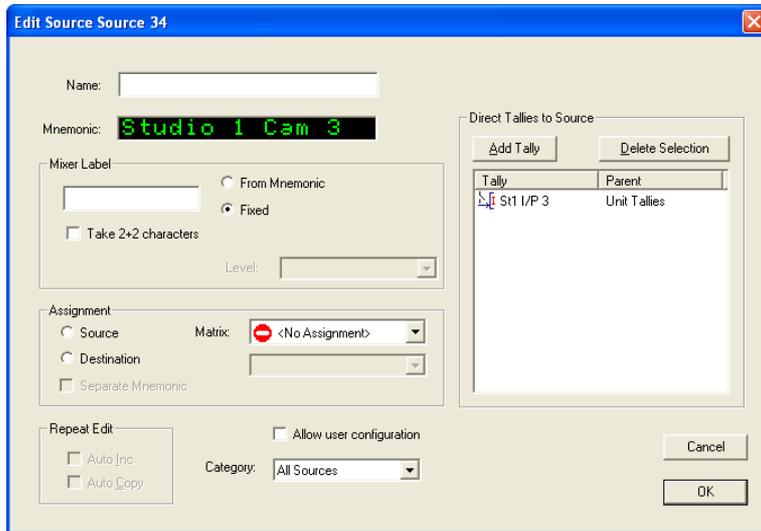
UMDs may receive the tallies either directly or via associations with a router destination or source. Tally Channels need to be associated with the left and right UMD LEDs etc. Please see the UMD Section for further details.

## 10.0 The Tally Map

This is accessed via the View Menu and show how the tallies are routed.

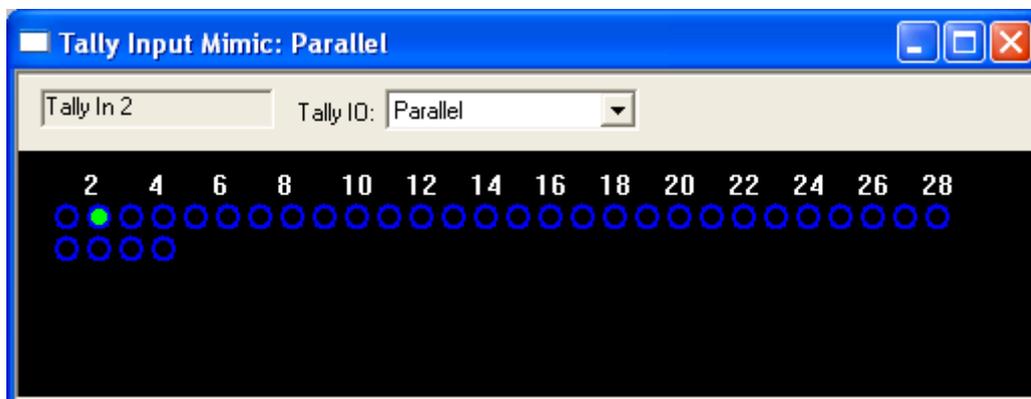
Parent	Tally	Mapped To:	Tally	Channel
Unit Tallies	St1 I/P 1	Aurora	Source 32	1: Studio 1
Unit Tallies	St1 I/P 2	Aurora	Source 33	1: Studio 1
Unit Tallies	St1 I/P 3	Aurora	Source 34	1: Studio 1
Unit Tallies	St1 I/P 4	Aurora	Source 35	1: Studio 1
Unit Tallies	St2 I/P 1	Aurora	Source 36	2: Studio 2
Unit Tallies	St2 I/P 2	Aurora	Source 37	2: Studio 2
Unit Tallies	St2 I/P 3	Aurora	Source 38	2: Studio 2
Unit Tallies	St2 I/P 4	Aurora	Source 39	2: Studio 2
Unit Tallies	St3 I/P 1	Aurora	Source 40	3: Studio 3
Unit Tallies	St3 I/P 2	Aurora	Source 41	3: Studio 3
Unit Tallies	St3 I/P 3	Aurora	Source 42	3: Studio 3
Unit Tallies	St3 I/P 4	Aurora	Source 43	3: Studio 3
Unit Tallies	St1 I/P 14	Aurora	Source 47	1: Studio 1
Unit Tallies	St1 I/P 16	Aurora	Source 48	1: Studio 1
Unit Tallies	St2 I/P 14	Aurora	Source 49	2: Studio 2
Unit Tallies	St2 I/P 16	Aurora	Source 50	2: Studio 2
Unit Tallies	St3 I/P 14	Aurora	Source 51	3: Studio 3
Unit Tallies	St3 I/P 16	Aurora	Source 52	3: Studio 3
Unit Tallies	St1 I/P 18	Aurora	Source 59	1: Studio 1
Unit Tallies	St2 I/P 18	Aurora	Source 59	2: Studio 2
Unit Tallies	St3 I/P 18	Aurora	Source 59	3: Studio 3
Unit Tallies	St1 I/P 19	Aurora	Source 60	1: Studio 1
Unit Tallies	St2 I/P 19	Aurora	Source 60	2: Studio 2
Unit Tallies	St3 I/P 19	Aurora	Source 60	3: Studio 3
Unit Tallies	St1 I/P 20	Aurora	Source 61	1: Studio 1
Unit Tallies	St2 I/P 20	Aurora	Source 61	2: Studio 2
Unit Tallies	St3 I/P 20	Aurora	Source 61	3: Studio 3
Unit Tallies	St1 I/P 21	Aurora	Source 62	1: Studio 1
Unit Tallies	St2 I/P 21	Aurora	Source 62	2: Studio 2
Unit Tallies	St3 I/P 21	Aurora	Source 62	3: Studio 3
Unit Tallies	St1 I/P 5	Aurora	Source 65	1: Studio 1

A double mouse click on a tally line will allow direct editing of the object (e.g. router source or a Tally Out pin etc.) to which the tallies are mapped.



## 11.0 The Tally Mimic

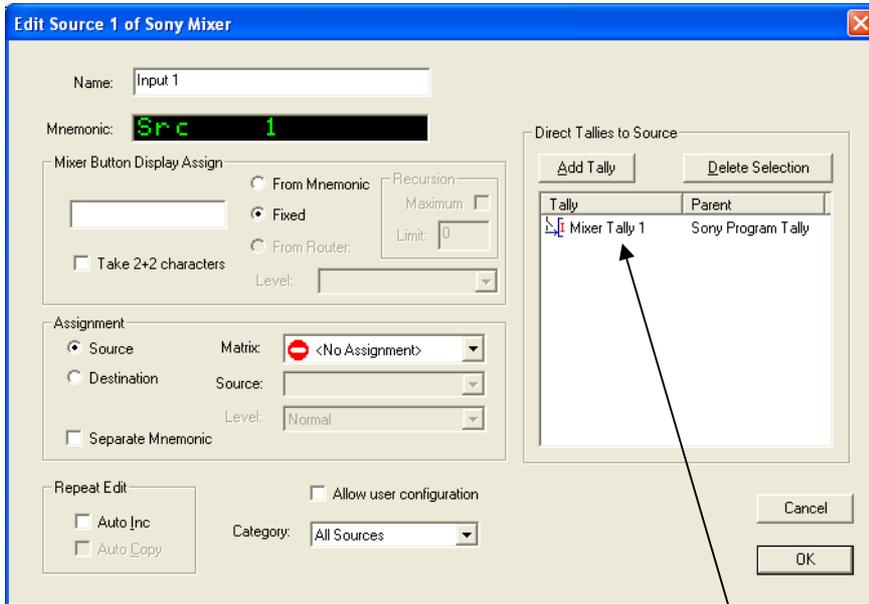
This mimic, seen via **Tools > Tally Mimic**, will show the status on incoming tallies to the system and the colour assigned.



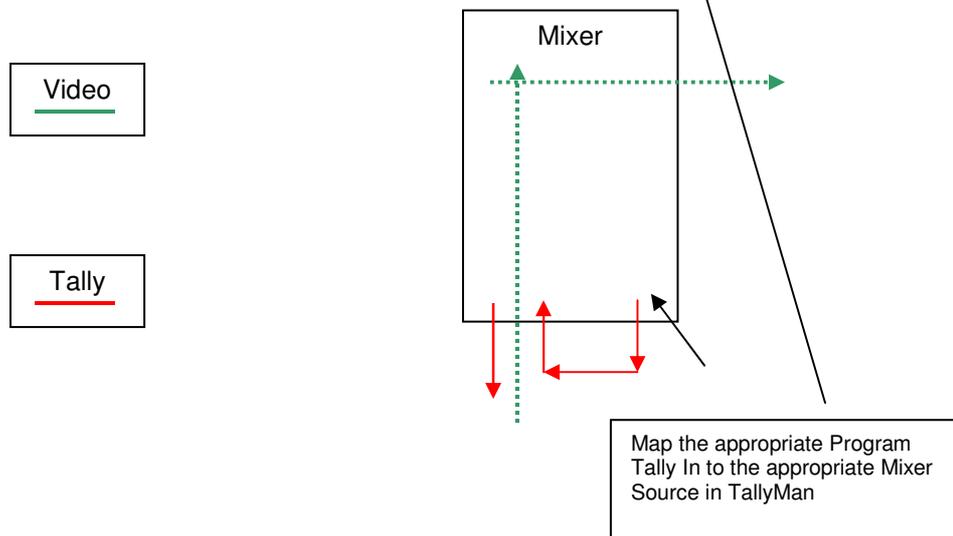
Select the appropriate Tally I./O in the drop down box.

## 12.0 Notes on Mixer and Router tallying

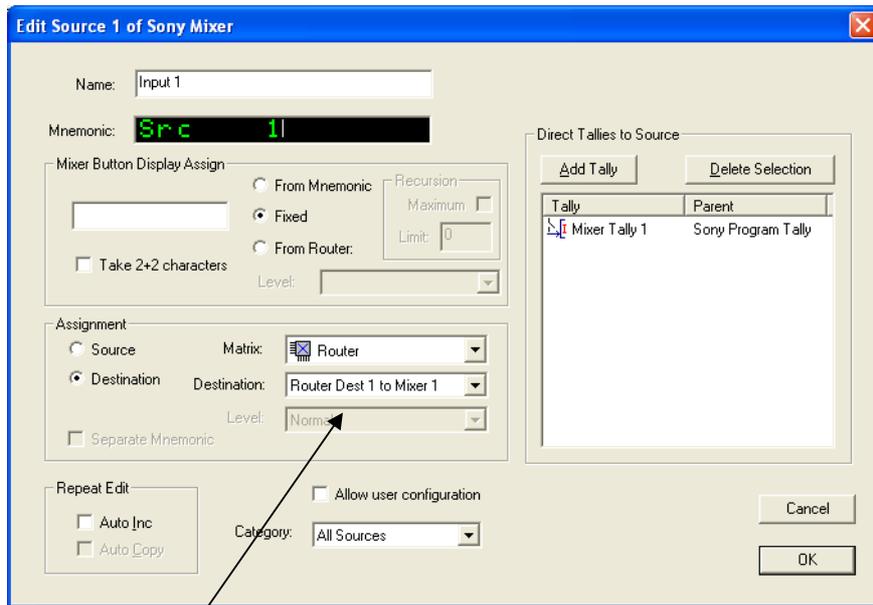
### Mixer Program Tally to Mixer Source Mapping



This is the linking in TallyMan. The box below indicates the TallyMan object. The video path is shown only to show that the tallies may be regarded as running in the opposite direction to the actual video.

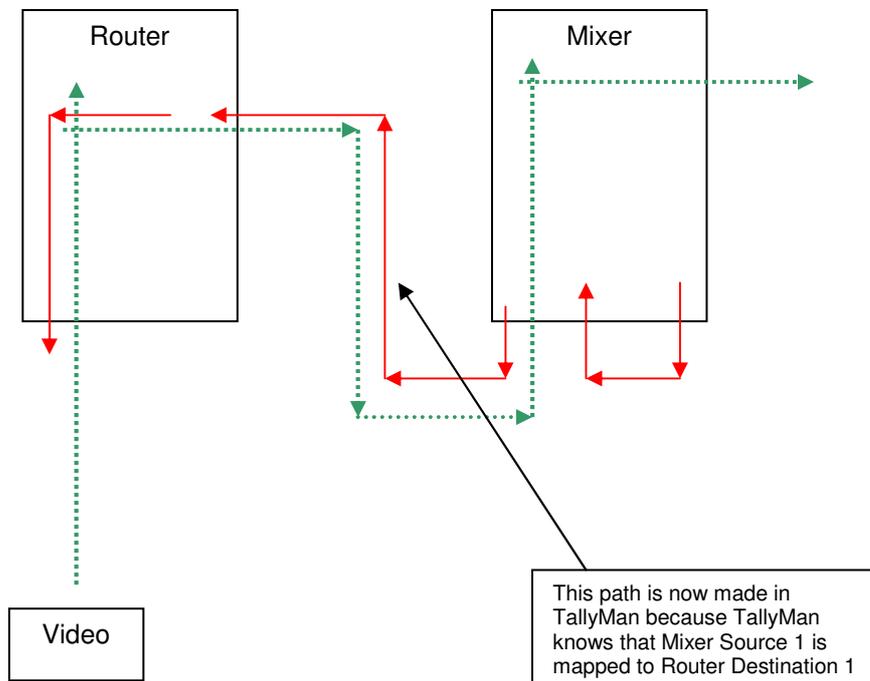


## Mixer Source to Router Destination Mapping



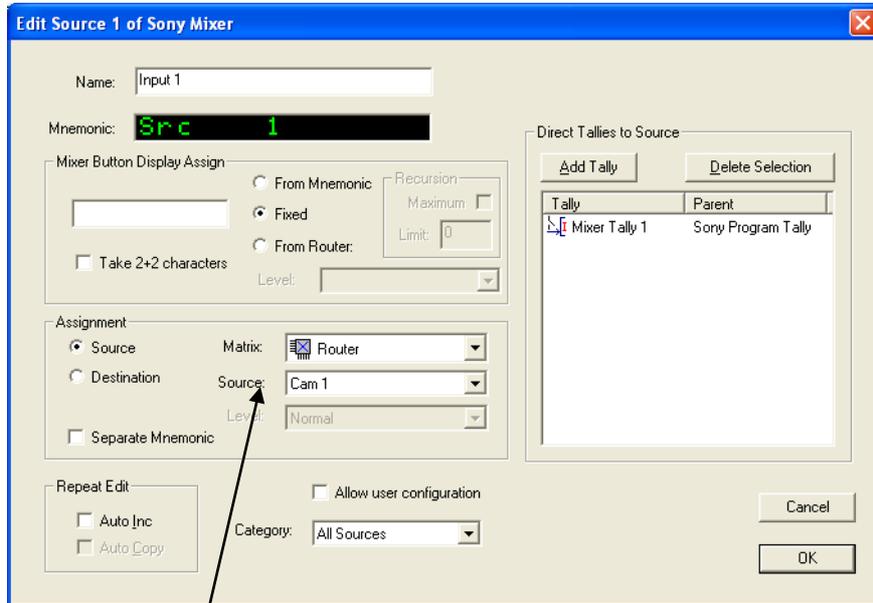
This is the linking in TallyMan.

It will be seen that any UMDs on the router will be tallied.

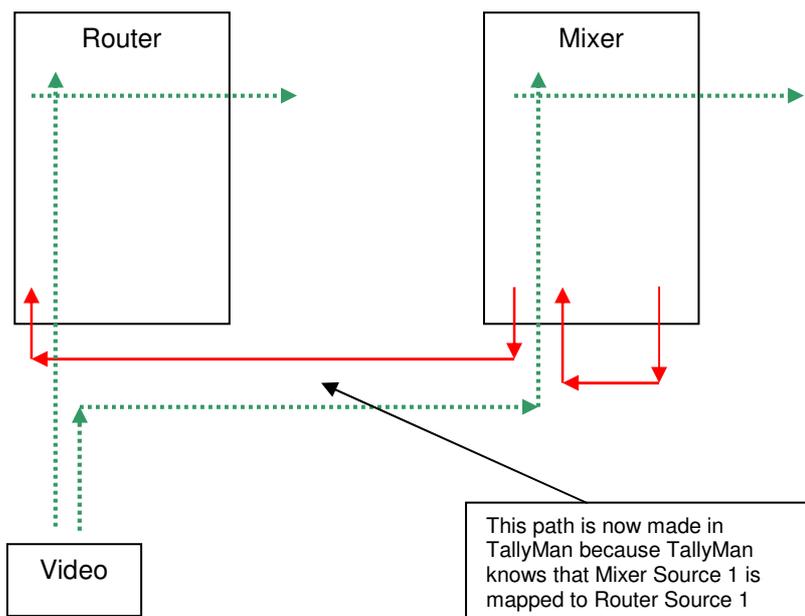


## Mixer Source to Router Source Mapping

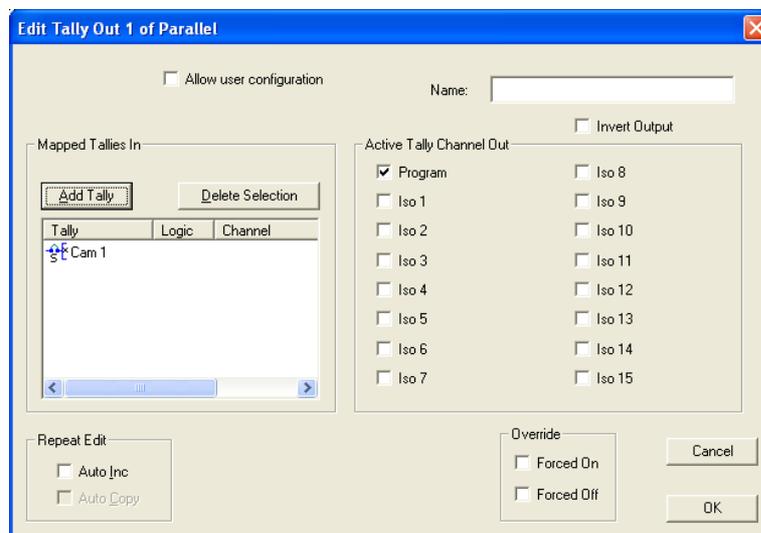
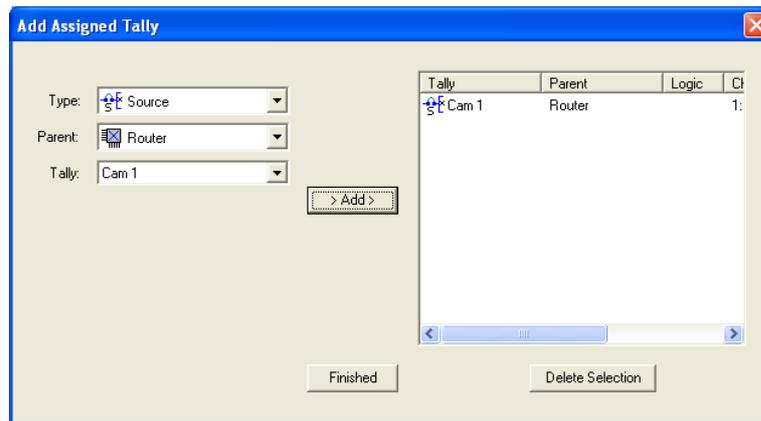
This would be used where the router is a monitoring router only and is used for feeding monitor walls. For example a Camera feeds the input to a router and an input to a Mixer. Both inputs are effectively common so the Source to Source linking is done in TallyMan. It will be seen that any UMDs on the router will be tallied.



This is the linking in TallyMan.



Now map the Tally Out pin to the Router Source for the Camera CCUs

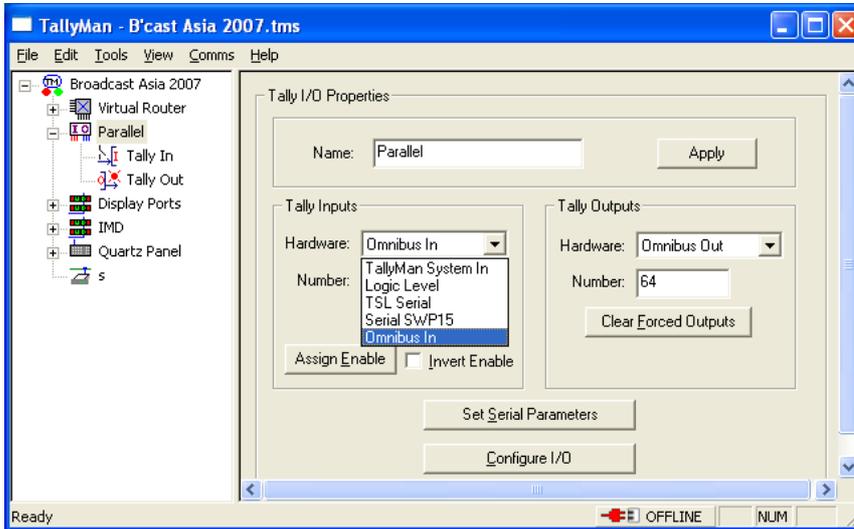


It will be seen that due to the linking within TallyMan, the Cameras will get a Tally (cue) as well as any UMDs that are driven via the router information.

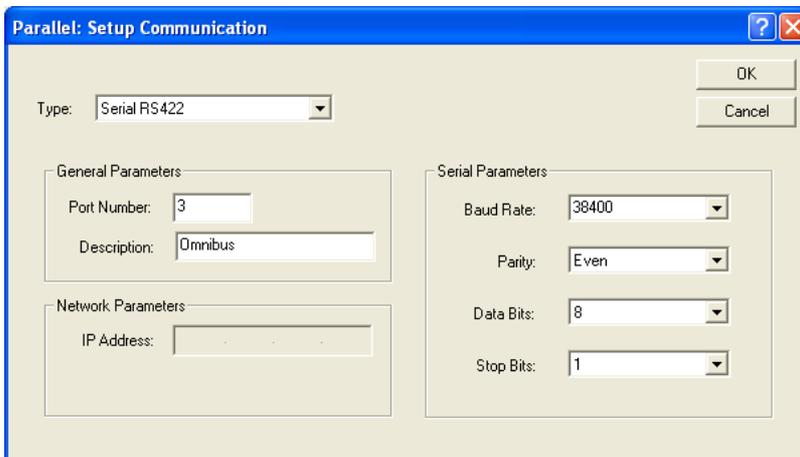
## Appendix 1

### Tally/GPO control using Omnibus code

#### Omnibus GPI Mapping Details



Set the required serial port that is used for the Omnibus connection.



Setting the Tally I/O to "Omnibus" results in the physical inputs (if any) being sent to Omnibus, and the physical outputs being controllable by Omnibus (OBS).

Omnibus can switch on or off a tally output.

The inputs and outputs continue to behave as normal within Tallyman. The Tally Inputs may be assigned to objects as normal. The Tally Mimic will show the physical input status. The Tally Outputs may be mapped as is usual. The link to OBS is effectively overlaid on top of the normal I/O.

OBS can "see" the input status, and can control the output status. This is where the "force on, force off" options are used. OBS can force the state one way or another, overriding any mapping in TallyMan to that output.

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The mapping procedure is as follows:

- This protocol operates on the existing hardware parallel Tally I/O module - locate this module (currently set to input type "Logic Level", output type "Open Collector").
- Select "Omnibus In" and "Omnibus Out" as hardware type.
- Configure number of Tally Outputs as required.
- Set the Serial Parameters on the port used to connect to Omnibus.

The parallel tally outs are now controlled by the Omnibus GPI protocol.