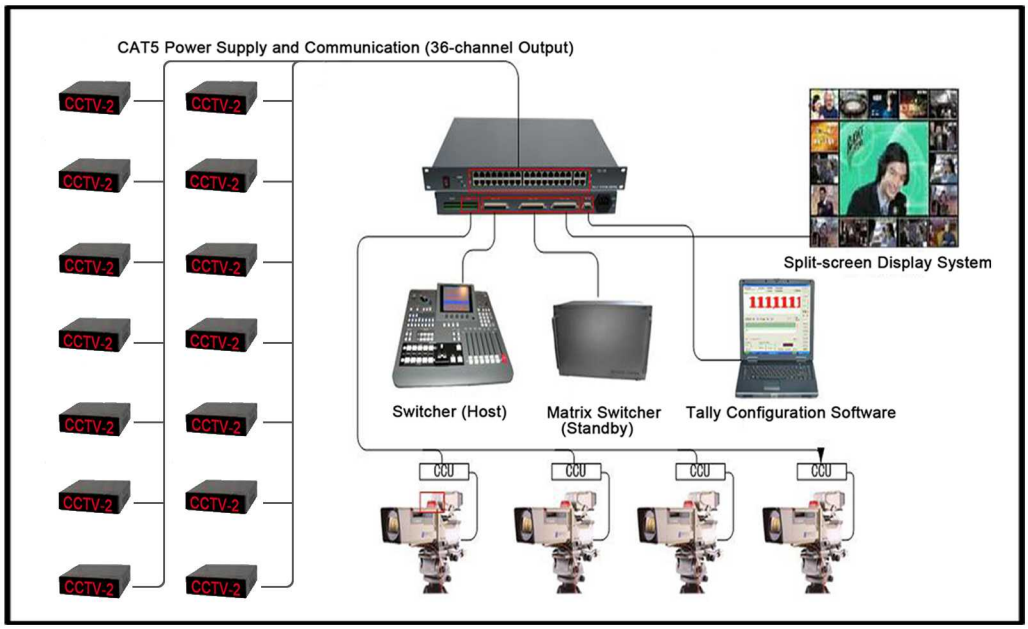
Tally Control System

Operating Instructions



Overview

The prompt system applied to television wall and switching signals in the studio or OB van is called Tally light, which plays the role of prompting signal sources in the process of live or recorded broadcast.

Tally is an LED display mainly used to mark the signal sources on the television wall and OB van and automatically indicate the broadcast state of current signal. It can be connected to switcher, broadcast control desk and matrix to accept Tally control information, and indicate different signal states in three colors: red, green and yellow.

Our Four-Chinese-character double-color Tally light display is composed of eight 8×8 lattice double-color LED modules, and can display four 16×16 lattice standard Chinese characters on the same screen.

The system uses the starlike bus structure in half-duplex communication mode based on RS-422. Theoretically, one Tally host controller can maximally drive 36×127 Tally clients without adding signal relay and amplification, and all Tally lights are connected into Tally bus network. The host is provided with double power supply (optional). Clients can be powered by the host uniformly or powered separately, and hot plug can be allowed, so it is very flexible to use. Each client works independently without interfering each other. Each Tally light has its own address. The displayed contents and the color of light are written by computer, and displayed contents are stored in EEPROM of each Tally light. Displayed contents can be rewritten online by the PC connected to Tally host controller, and displayed word font can be set with the font of WINDOWS word stock at will. So it is particularly convenient and simple to design, install and adjust.

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Working conditions of Tally system: Tally host controller is only responsible for the acquisition and transmission of signals. PC is transferred to RS-422 from RS-232 and then mounted onto the bus, so it can clearly monitor the situation on the bus and judge the working conditions of current system.

Working conditions of client (Tally light): the task of client (Tally light) is to judge the signal on the bus and control the display of LED. Each client has one ID address which can be reduplicative. The states displayed by Tally lights with identical ID address will also be the same. Where there is a message on the bus, the client will receive the message but doesn't judge its target address. All clients will receive the message.

- If a client is switched to PGM signal by the switcher, the LED of this client will turn red, and the Tally light (PGM dedicated client) with ID=254 will turn red, with its content display same as that of this client

- If a client is switched to PVW signal by the switcher, the LED of this client will turn orange, and the Tally light (PVW dedicated client) with ID=253 will turn orange, with its content display same as that of this client

- If a client is switched to PGM and PVW by the switcher simultaneously, the LED of this client will turn red, and the Tally light (PGM dedicated client) with ID=254 will turn red, with its content display same as that of this client; and the Tally light (PVW dedicated client) with ID=253 will turn orange, with its content display same as that of this client

Communication: With the RS-485 serial interface standard adopted, the maximum transmission distance can be1.2 km, the differential transmission way is used, and multipoint communication networks can be formed with the differential transmission.

Power supply: As the total number of LED is large, the power requirement is larger. The voltage output of power bus is 5V. When a 300W power supply is used, the maximum operating current of 60A can be available. (Note: if the operating mode of optional main and stand-by double power supply is adopted, the system can work more stably)

PC management program: the Tally control program coming with the device can be used for the rewriting of stored contents of Tally lights and the on-line test of Tally lights.

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Studio Divided Series Prompter

- Dual power is optional for the equipment, so the power supply is more reliable and stable
- PC can perform overall management for all Tally equipment so long as accessing to the host for easy commissioning. Data contents of all Tally clients are the same and only ID addresses are different, so it is very convenient to use and change ID address on site
- The interface of Tally host controller uses 37-pin D-type socket, and can be connected with GPI interface of any switcher. The interface of one Tally host controller can be accessed to 108-channel GPI interface monochromatic Tally input signals, or 54-channel GPI interface dichromatic Tally input signals
- The maintenance is convenient. Each Tally can be accessed to the host separately, or many Tallys can to be accessed to the host in a group so as to easily judge the scope of failure. The host totally provides 36 RJ45 bus access ports which do not correspond with ID address one by one, and can be swapped at will
- Tally control output board of optional CCUs is not fixed on some ports on the switcher, and can be changed to be controlled by any output port at any time. The maximum Tally quantity of CCUs controlled by each board is 72 (monochromatic CCU input) by default. Tally extension controller of CCUs can also be customized to increase the Tally quantity of CCUs. For example, only if three Tally extension controllers of CCUs are accessed, 216 (monochromatic CCU input) or 108 (dichromatic CCU input) Tallys of CCUs can be controlled and so on
- By changing the logic addresses, the corresponding relation between Tally lights and switcher's signal sources can be changed at will without changing physical addresses. For the studio technicians, this function is in great need in their daily work

The overall design of Tally system is star-shaped bus structure, with Tally host controller and all Tally lights connected to the bus.

PC can access to the client's data to make some settings through the connection with Tally host controller, such as displayed characters, displayed color, ID address number, etc. By such connection, PC can also view whether the current bus datagram is at normal state. The setting status of host is mainly used for system setup and debugging.

There is a set of host computer programs on PC to manage and set up Tally host controller, CCU controller board and all Tally lights.

The interface of switcher and Tally host controller is 37-core parallel line which transmits the switching signal of switcher to the Tally host controller from GPI output port. Each 37-core interface can transmit 36-channel Tally signals at maximum (permanent default setting is to input 18-channel Tally signals). The 19th pin of 37-core interface is internally permanent grounding.

Working process of Tally system: when the switcher or emergency switch is switched to certain equipment, the switcher or emergency switch will switch out signal, and then the Tally host controller switches and sends data to the bus after data acquisition via GPI interface circuit. Tally will process signals after receiving them and control internal display circuit to change display state, and then the whole switching display process is completed.

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