

# The Queuer™ and The Tallye™ User Manual



## Features

The **Queuer™** queuing system features are described below.

- Assists chairperson with meeting continuity by offering equal opportunity to all participants.
- Each speaker has the opportunity to take turns speaking.
- The name of the speakers is displayed in an LCD display.
- The camera operator can pre-position an available camera on the next person in the list to speak. The result is a more professional result to the viewing audience.
- With the addition of the optional video title generator, the name of the speaker is available to the viewing audience.



- Expandable to 120 queuing/voting stations.
- Optional video title generator puts speaker's name into the streaming video.

The **Tallye™** voting system features are described below.

- Optional voting system. The **Tallye™** may be incorporated into the queuing system with the addition of the **Tallye™** Controller and a vote results display.
- Available in portable or permanently installed versions.

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## Applications

Some **Queuer™** application are described below.

### The **Queuer™** Queuing System.

- The queuing system is valuable in meetings where there are multiple people that may wish to speak. Each member of the group will have a queuing station with two buttons.
- When a member wishes to speak, he or she presses the “Queue” or **Request to speak** button. The person’s name is placed at the next position in the list.
- When the chairperson or moderator recognizes the next person on the list, the person up next to speak presses his or her **Talk** button. That person’s name is moved to the top of the list.
- This system can be configured to mute the microphone of all the speakers except when they have their respective **Talk** button enabled. This reduces the background noise when a person is not speaking. This also eases the load or eliminate the need for someone to operate the audio mixer.
- The person’s name is also displayed on the transmitted video so that the viewing audience knows the name of the person speaking.

### The **Tallye™** Voting System.

- The **Tallye™** permits the members of a meeting to vote on issues and agenda items in full secrecy.
- Each person that can vote will have a voting station with two buttons, **YES** and **NO**. To **ABSTAIN**, simply press the yes and no buttons simultaneously.

- Once everyone’s vote is stored in the system, the vote summary and/or detailed vote results may be displayed for all to see.
- The vote results summary is displayed on a large five inch high remote display. It displays the number of **YES**s, **NO**s and **ABSTAIN**s.
- The vote results are also displayed on a large display with individual names of the members voting along with the member’s respective vote using indicator lamps for the **YES**, **ON** and **ABSTAIN**.
- This **system** is great for City Council, Planning Commision, Corporate meetings, school board or any other meeting where multiple people may wish to vote on issues.

### Queuing/Voting System using the **Queuer™** and the **Tallye™** together.

- With the addition of The **Tallye™** to the **Queuer™**, this same system may now be used for voting as well as queuing.
- Each queuing station has two buttons. The **Queue/NO** button and the **Talk/YES** button. The button function changes depending on whether the system is in the **Queuer™** mode or is in the **Tallye™** mode.
- To enter the vote mode, the press the “**Vote Enable**” button on the **Tallye™** controller. The queuing stations now become voting stations. Once everyone has voted and the vote results displayed, press the “**Vote Enable**” button again to return to the **Queuer™** mode.

### Teleconferencing using the **Queuer™**.

- The queuing system is a valuable addition to teleconferenced meetings where there are multiple people at each location that may wish to speak. Each member of the group will have a queuing station with two buttons.

- When a member wishes to speak, he or she presses the “Queue” or **Request to speak** button. The person’s name is placed at the next position in the list.
- Often times only the aggressive or more verbal team members get to speak. Each team member can silently request to speak. This way everyone gets a fair chance to speak.
- When the chairperson or moderator recognizes the next person on the list, the person up next to speak presses his or her **Talk** button. That person’s name is moved to the top of the list. The person’s name is also displayed on the transmitted video so that the people at the other end of the teleconference knows the name of the person speaking.

### **Debate Teams using the Queuer™ and the Tallye™ together.**

- The **Queuer™** system is great for speech and debate teams. When there are multiple speakers or debate team members that are competing to speak, the order of the member’s request to speak is recorded in the system.
- Each team member has a queuing station. The first person that requested to speak will be at the top of the list on the LCD display.
- The person’s name is also displayed on the video so that the viewing audience knows the name of the person requesting to speak.

### **Distance Learning using the Queuer™.**

- In distance learning applications, each student will have a **Request to speak** button. When the request to speak button is pressed, the student’s name will be displayed on the video screen so that the instructor can address the student by name.

## **Optional accessories**

The following optional accessories are available for the queuing system.

- VT-101A Video Title Generator. The video title generator puts the name of the person speaking into the streaming video.
- TLY-101A Voting system Controller. With the addition of the **Tallye™** controller and the **Tallye™** results display, the **Queuer™** becomes a voting system.
- TLY-309A Voting system Results Display. The Voting system Results Display displays the **YES**, **NO** or **ABSTAIN** results of each of the individual members that voted.
- Voting system power supply. This power supply powers the TLY-309A.
- LC-122A remote LCD display(s). The LCD remote display displays the names of the person speaking and the persons up next to speak.
- DSP-250 Remote Display with 2-1/2” high letters. One or more displays may be connected to the display controller. This display indicates summary of the vote results. It displays the number of **YESes**, **NOs** and **ABSTAINs**.
- DSP-500 Remote Display with 5” high letters. One or more displays may be connected to the display controller. This display indicates summary of the vote results. It displays the number of **YESes**, **NOs** and **ABSTAINs**.
- PS-2RJ Power supply. This power supply is required if more than two remote displays are installed. One power supply can power two remote displays.

## **Description**

### **Queuer™ Functions (Queuing System).**

The **Queuer™** functions are summarized below.

- **Request to speak.** To request to speak, simply press the queue button. Your name will be placed at the bottom of the list.
- **Talk.** Once you are recognized by the speaker, press your talk button. Your name will move to the top of the list on the LCD displays.
- **Program Mode.** In the program mode, the names of the participants may be entered using a standard PC keyboard. Once all of the names have been entered, press the ESC key. The system is now in “RUN” mode.
- **Remote LCD Display.** Connect as many LCD displays to the system as is needed. The chairperson, clerk and camera operators may need LCD displays.

### Example Queuing System

A standard queuing system consists of the following items.

#### Queuing stations.

Any combination of permanently installed or portable queuing stations may be installed. The system supports a maximum of nine queuing stations.

#### Microphone Shock Mounts.

Each permanently installed queuing station requires a microphone shock mount.

#### Microphone mute relays.

An eight channel mute relay may be used for the first eight microphones. A single channel mute relay may be used for the ninth channel.

#### Queuing Station Controller.

Up to nine queuing stations are connected to the Queuing Station Controller. One Controller is required

per system.

### Queuing Station Master Control.

The Queuing Station Master Control serves two purposes. This unit may be used by the clerk or camera operator, or installed in the main equipment rack.

A standard PC keyboard may be connected to this unit to program the names of the persons speaking into the system. This unit is where the names are stored.

This unit is installed in the equipment rack used by the camera operator. One Controller is required per system.

**PC Keyboard.** The PC Keyboard plugs into the Queuing Station Master Control to program in the names of the persons at the microphones. One Controller is required per system.

#### Remote LCD Display.

This unit is used by the chair person, clerk and camera operators. At least one remote LCD display is required per system. Additional LCD displays may be installed if others want to monitor who's up to speak next.

#### TimeKeeper™.

The TimeKeeper™ is used to time the speakers so that each person is given an equal allotment of time. The TimeKeeper™ is optional.

*NOTE: See the TimeKeeper user manual for details on these units and associated accessories.*

#### Red-Yellow-Green Indicator Unit.

The Red-Yellow-Green Indicator Unit is a visual display to the user as to the amount of time remaining to speak. This unit is connected to the TimeKeeper™.

- Green indicates that the speaker may continue speaking.
- Yellow indicated that speaker has one minute (optional 30 seconds) of time remaining to speak.

- Red indicates that the speaker must stop speaking.

This unit is optional, but highly recommended.

*NOTE: See the TimeKeeper™ user manual for details on these units and associated accessories.*

### Large LED display.

This unit is connected to the TimeKeeper™. It displays the time remaining in minutes and seconds. This unit is optional. This display is available in three sizes.

- 9x18 inch with 5 inch high digits.
- 4x9 inch with 2.5 inch high letters.
- A second TimeKeeper™ may be configured to operate as a small table top remote display. A jumper strap inside the timer converts it from a timer to a remote display.

The Large LED Display may also be used to display a summary of the vote results.

### Power Supply.

One 12 volt power supply is required. The current requirements will vary depending on the equipment installed.

### System Operation.

The cueing system consists of up to 9 cueing stations and one or more LCD displays. Each cueing station has two buttons **CUE** and **TALK**. When the **CUE** button is pressed, the name of the person associated with the cueing station is displayed on the LCD display(s) at the bottom of the list. When the **TALK** button is pressed, the name moves to the top of the list. The word **TALK** is displayed next to the name on the LCD display.

The system supports up to 9 cueing stations.

- The user may store up to two lists of ten names into the cueing system.

- Each cueing station can be configured to turn on a microphone located at the cueing station

Several types of cueing stations are available.

- The stationary cueing station is permanently attached to the desk or table where it will be used.
- The portable Microphone base with built in Cueing Station is connected via a cord that plugs into the wall using a standard RJ-11 telephone jack.
- The portable Cueing Station is connected via a cord that plugs into the wall using a standard RJ-11 telephone jack.
- The mini-portable Cueing Station is connected via a cord that plugs into the wall using a standard RJ-11 telephone jack.

A typical system consists of up to 9 cueing stations; A master controller station in the control room; one or more remote LCD displays; and a count down timer with one or more remote timer displays to time the person speaking

### User controls.

The **Queuer™** has a Queuing Station for each person that may desire to speak. At the beginning of the meeting, the names of the participants are entered into the **Queuer™** memory.

Each queuing station has two buttons, The **CUE** button and the **TALK** button..

### CUE Button

- Pressing the **CUE** button indicates that the person at this cueing station desires to speak. The **CUE** button lights yellow.

When the **CUE** button is pressed the name associated with the respective button is added after the last entry in the queued list display..

- When the **TALK** button is lit, the **CUE** button is extinguished.

- Since the LCD displays have only 4 lines, only the four highest priority names are displayed.

### **TALK Button**

- Pressing the **TALK** button indicates that the person at this cueing station is going to talk. The **TALK** button lights green. If a microphone is connected, it is enabled.
- The persons name is displayed on the LCD display at the top of the list. The word "**TALK**" is displayed next to the persons name.
- When the **CUE** button is lit, the **TALK** button is extinguished.
- If the cueing station is configured to mute the microphone, the microphone will be activated when he **TALK** button is pressed.

## Programming the Cueing System

The programming mode is used to select between list A and list B. This mode is also used to store names for each of the cueing stations.

To enter the program mode:

1. Turn off the power to the cueing system.
2. Plug in a standard AT compatible PC keyboard to the keyboard connector on the front panel of the cueing system display.
3. Turn the power on.
4. Do your editing.
5. To exit the programming mode, press the ESC (Escape) key on the PC keyboard.

The table below describes functions of each of the PC keyboard keys while in the program mode.

<b>PC Keyboard Key</b>	<b>Description</b>	<b>Notes</b>
PgUp	Select List 'A'	There are two lists of 10 names.
PgDn	Select List 'B'	
Left Arrow	Move the cursor one position to the left.	Each name may be up to 12 characters long.
Right Arrow	Move the cursor one position to the right	
Home	Move to the first cursor position in the name.	
End	Move to the last cursor position in the line.	
Shift Key (Left)	Pressing this shift key while typing characters enters capitals.	
Shift Key (Right)	Pressing this shift key places the keyboard into caps lock.	Press and release the Left shift key to exit the caps lock mode.
Backspace	Back up the cursor one position and delete the character.	
Delete	Delete the character at the cursor position.	
Down Arrow	Move to the next entry on the list	Each list has 10 entries
Up arrow	Move to the previous entry in the list	

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<b>PC Keyboard Key</b>	<b>Description</b>	<b>Notes</b>
Escape	Exit the programming mode.	To re-enter the programming mode, follow the instructions above.
Other keys	Editable characters that are stored in memory.	Several special characters are not implemented including:   { }

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## Specifications

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Number of Cueing Stations	9
Number of lists of names	2
Programming	AT style PC Keyboard.
Cueing Stack	Up to 10 names may be cued up at one time.
LCD Display	Up to 4 names may be displayed at one time.
Power Consumption	12VDC, 1.5AMP
Data Cable	Two conductor twisted pair with shield 22ga. Up to 600 ft length
DC Power	Two Conductor twisted pair 18ga. Up to 600 ft length.

### Description of modules in the Cueing System

#### Tallye™ Functions (Voting System).

The Tallye™ functions are summarized below.

- **The Tallye™.** The members of a meeting can vote on issues and agenda items in full secrecy. Once everyone's vote is stored in the system, the vote summary and/or the detailed vote results may be displayed for all to see.
- **PC Interface.** Connect the TimeKeeper to a PC. An optional PC serial port interface unit connects the TimeKeeper to a PC.
- **PC Interface.** Connect the TimeKeeper to a PC. An optional PC serial port interface unit connects the TimeKeeper to a PC.

- **PC Interface.** Connect the TimeKeeper to a PC. An optional PC serial port interface unit connects the TimeKeeper to a PC.

### User controls.

The **Tallye™** has a Voting Station for each person that will be voting. At the beginning of the meeting, the voting system is configured to mark the persons present or absent.

### Configuration (Marking present and absent).

At the beginning of a meeting, the voting system must be configured to mark the persons present or absent.

1. Make sure that the voting system displays **OFF** in the vote controller display. If not, press the **Vote Enable** button until **OFF** is displayed in the display.
2. Press and hold the **Vote Results** button.
3. While the **Vote Results** button is held depressed, press the **Vote Enable** button.
4. The display will show “9 P”.
5. Press the **Vote Results** button to select between “P”=present, “A”= absent and blank=voting station not used.
6. Once the desired selection is made, press the **Vote Enable** button to decrement the voting station number to the next station.
7. Repeat step 5 and 6 until all voting stations have been configured.

### Voting

The voting system controller is used to enable and disable the voting process. This unit also enables the vote results to be displayed.

There is a voting station for each person that is allowed to vote. Each voting station has two buttons, The **CUE/NO** button and the **TALK/YES** button

- To initiate the voting process, press the **Vote Enable** button.
- The vote results button should begin blinking. Also, both the yes and no indicators on each of the voting stations will begin blinking.
- The count in the voting system controller display will be the number of persons that will be voting.
- Each of the voting members should select YES, NO or ABSTAIN (both buttons).
- Once one of the vote buttons have been pressed, the indicators at that voting station will stop blinking and display the resulting vote in the yellow and green indicators at that voting station
- The count in the voting system controller will be decremented by one.
- **NO Vote**
  - Pressing the NO button indicates that the person at this cueing station desires to record a NO vote.
  - The Yellow NO indicator will turn on and remain on.

- This vote may be changed at any time during the voting process until all persons have recorded their vote.
- **YES Vote**
  - Pressing the YES button indicates that the person at this cueing station desires to record a YES vote.
  - The Green YES indicator will turn on and remain on.
  - This vote may be changed at any time during the voting process until all persons have recorded their vote.
- **ABSTAIN Vote**
  - Pressing both YES and the NO buttons simultaneously indicates that the person at this cueing station desires to record an ABSTAIN vote.
  - The Green YES and Yellow NO indicators will turn on and remain on.
  - This vote may be changed at any time during the voting process until all persons have recorded their vote.
- Once everyone has voted, the count in the voting system controller display will be zero.

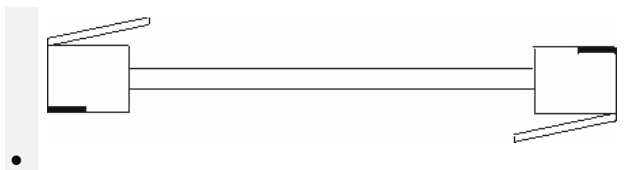
### Vote results.

The vote results button will be ignored until everyone has voted.

- Once everyone has voted, the **Vote Results** button may now be pressed to display the vote results.
- The result summary will be displayed on the voting system controller and on the large LED display.
- A detailed vote result will be displayed on the large vote results wall display.

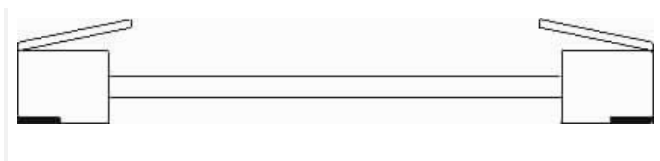
### Configuration options

- When connecting the queuing station controller QUE-101A to the QUE-521A Data 1 port, use a special crossover phone cord.
- When connecting the queuing station controller LCD-122A to the QUE-521A Data 2 port, use a special crossover phone cord.
- When connecting two TimeKeepers together use a special crossover phone cord.



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- Use standard phone cord for all other accessories.



# The Queuer™ and The Tallye™ Technical Manual

## Typical Configurations

The standard configurations are described below. All configurations have the same operational features except those listed below.

### Nine Station Queuing System:

This system is used for installations having up to nine queuing stations.

- **Equipment. CUE-101A** Queuing Station Controller
  - Up to nine queuing stations. Several styles are available.
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  - **CUE-521A** Queuing system master control. This unit is available in either a rack mount or portable version.
  - **LCD-122A** Remote LCD display for displaying the names of the persons requesting to speak. One or more displays may be required.
  - **RLY-08A** Eight channel Microphone mute relay module. One required. Instead of using the RLY-08A, you may install one QR-101B per queuing station instead.
  - **QR-101B** Single channel Microphone mute relay module. Up to nine required. If you install the RLY-08A, only the ninth station will use the QR-101B.
  - 
  - **VT-101A** Video title generator.
  - Wall transformer to power the system.

- **Connectors.**
  - The microphone mute relays use quick snap terminals to connect the microphone leads.
  - All other connections are made using RJ-11x and RJ-14X modular wiring.
  - The wall transformer is connected to the queuing station controller using a standard 2.5mm DC power plug.
- **Standard Accessories.**
  - PC Keyboard.
  - Modular cords
  - User Manual.

### Fifteen Station Queuing system:

This system is used for installations having up to fifteen queuing stations.

- **Equipment.**
  - **CUE-115A** Queuing Station Controller
    - Up to fifteen queuing stations. Several styles are available.
  - **CUE-521A** Queuing system master control. This unit is available in either a rack mount or portable version.
  - **LCD-122A** Remote LCD display for displaying the names of the persons requesting to speak. One or more displays may be required.
  - **RLY-08A** Eight channel Microphone mute relay module. Two required. Instead of using the RLY-08A, you may install one QR-101B per queuing station instead.
  - **QR-101B** Single channel Microphone mute relay module. Up to fifteen required. If you install the RLY-08A modules, the QR-101B modules are not required.
  - 
  - **VT-101A** Video title generator.
  - Wall transformer to power the system.

- Connectors.
  - The microphone mute relays use quick snap terminals to connect the microphone leads.
  - All other connections are made using RJ-11x and RJ-14X modular wiring.
  - The wall transformer is connected to the queuing station controller using a standard 2.5mm DC power plug.
- Standard Accessories.
  - PC Keyboard.
  - Modular cords
  - User Manual.
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### **One Hundred and Twenty Station Queuing system:**

This system is used for installations having up to 120 queuing stations.

- Equipment.
  - **CUE-115A** Queuing Station Controller for every fifteen queuing stations.
  - Up to 120 queuing stations. Several styles are available.
  - **CUE-521A** Queuing system master control. This unit is available in either a rack mount or portable version.
  - **LCD-122A** Remote LCD display for displaying the names of the persons requesting to speak. One or more displays may be required.
  - **RLY-08A** Eight channel Microphone mute relay module. Two required for every CUE-115A. Instead of using the RLY-08A, you may install one QR-101B per queuing station instead.
  - **QR-101B** Single channel Microphone mute relay module. Up to 120 required. If you install the RLY-08A modules, the QR-101B modules are not required.
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- **VT-101A** Video title generator.
- One Wall transformer per CUE-115A to power the system.

- Connectors.
  - The microphone mute relays use quick snap terminals to connect the microphone leads.
  - All other connections are made using RJ-11x and RJ-14X modular wiring.
  - The wall transformer is connected to the queuing station controller using a standard 2.5mm DC power plug.
- Standard Accessories.
  - PC Keyboard.
  - Modular cords
  - User Manual.

### **Nine Station Voting System:**

This system is used for installations having up to nine voting stations.

- Equipment.
  - **CUE-101A** Queuing Station Controller
  - Up to nine voting stations. Several styles are available.
  - **CUE-521A** Queuing system master control. This unit is available in either a rack mount or portable version.
  - **LCD-122A** Remote LCD display for displaying the names of the persons requesting to speak. One or more displays may be required.
  - **RLY-08A** Eight channel Microphone mute relay module. One required. Instead of using the RLY-08A, you may install one QR-101B per queuing station instead.
  - **QR-101B** Single channel Microphone mute relay module. Up to nine required. If you install the RLY-08A, only the ninth station will use the QR-101B.
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- **VT-101A** Video title generator.
- Wall transformer to power the system.
- Connectors.
  - The microphone mute relays use quick snap terminals to connect the microphone leads.
  - All other connections are made using RJ-11x and RJ-14X modular wiring.
  - The wall transformer is connected to the queuing station controller using a standard 2.5mm DC power plug.
- Standard Accessories.
  - Modular cords
  - User Manual.

#### **Fifteen Station Voting system:**

This system is used for installations having up to fifteen queuing stations.

- Equipment.
  - **CUE-115A** Queuing Station Controller
    - Up to fifteen queuing stations. Several styles are available.
  - **CUE-521A** Queuing system master control. This unit is available in either a rack mount or portable version.
  - **LCD-122A** Remote LCD display for displaying the names of the persons requesting to speak. One or more displays may be required.
  - **RLY-08A** Eight channel Microphone mute relay module. Two required. Instead of using the RLY-08A, you may install one QR-101B per queuing station instead.
  - **QR-101B** Single channel Microphone mute relay module. Up to fifteen required. If you install the RLY-08A modules, the QR-101B modules are not required.
  - 
  - **VT-101A** Video title generator.

- Wall transformer to power the system.
- Connectors.
  - The microphone mute relays use quick snap terminals to connect the microphone leads.
  - All other connections are made using RJ-11x and RJ-14X modular wiring.
  - The wall transformer is connected to the queuing station controller using a standard 2.5mm DC power plug.
- Standard Accessories.
  - Modular cords
  - User Manual.
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#### **One Hundred and Twenty Station Voting system:**

This system is used for installations having up to 120 queuing stations.

- Equipment.
  - **CUE-115A** Queuing Station Controller for every fifteen queuing stations.
    - Up to 120 queuing stations. Several styles are available.
  - **CUE-521A** Queuing system master control. This unit is available in either a rack mount or portable version.
  - **LCD-122A** Remote LCD display for displaying the names of the persons requesting to speak. One or more displays may be required.
  - **RLY-08A** Eight channel Microphone mute relay module. Two required for every CUE-115A. Instead of using the RLY-08A, you may install one QR-101B per queuing station instead.
  - **QR-101B** Single channel Microphone mute relay module. Up to 120 required. If you install the RLY-

08A modules, the QR-101B modules are not required.

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- **VT-101A** Video title generator.
- One Wall transformer per CUE-115A to power the system.
- Connectors.
  - The microphone mute relays use quick snap terminals to connect the microphone leads.
  - All other connections are made using RJ-11x and RJ-14X modular wiring.
  - The wall transformer is connected to the queuing station controller using a standard 2.5mm DC power plug.
- Standard Accessories.
  - Modular cords
  - User Manual.

## Installation

See the block diagrams and interconnection diagrams for more detail.

- Connect the queuing station controller QUE-101A ports 1 through 8 and port 9/Aux to each of the Queuing stations 1 through 9 using a standard 4 conductor modular phone cord.
- Connect the queuing station controller QUE-101A to the Queuing station master control QUE-521A Data 1 port using a special crossover 4 conductor modular phone cord.
- Connect the queuing station controller QUE-101A data port to the RL-08A mute relay module using a special crossover 4 conductor modular phone cord. You will need to install a splitter on the data port of the QUE-101A.
- Connect the remote LCD display LCD-122A to the Queuing station master control QUE-521A Data 2 port using a

special crossover 4 conductor modular phone cord.

- Connect the video title generator VT-101A to the Queuing station master control QUE-521A Data 2 port using a standard 4 conductor modular phone cord. You will need to install a splitter on the data 2 port of the QUE-521A.
- Connect the **Tallye**<sup>TM</sup> controller TLY-309A to the queuing station controller QUE-101A data port using special crossover 3 pair (6 conductor) modular phone cord. If you install a splitter, make sure that the splitter connects all 6 conductors. You will need to install a splitter on the data port of the QUE-101A.
- Connect the **Tallye**<sup>TM</sup> vote result display to the queuing station controller QUE-101A data port using 2 pair (4 conductor) modular phone cord. If you install a splitter, make sure that the splitter connects all 6 conductors. You will need to install a splitter on the data port of the QUE-101A.
- Connect the **Tallye**<sup>TM</sup> DSP-250A or DSP-500A large LED vote summary display to the queuing station controller QUE-101A data port using 2 pair (4 conductor) modular phone cord. If you install a splitter, make sure that the splitter connects all 6 conductors. The **Tallye**<sup>TM</sup> controller requires all 6 conductors. You will need to install a splitter on the data port of the QUE-101A.

*NOTE: Instead of using splitters, you can wire multiple RJ-11 jacks together according to the interconnection diagram provided.*

## The Power Supply Considerations

The current consumption of the devices are specified below. All currents are typical and

may vary plus or minus 20 percent from the stated values..

- The QUE-101A consumes 200 ma.
- The QUE-521A consumes 400 ma.
- The Queuing Stations with incadescent bulbs consumes 100 ma.
- The Queuing Stations with LEDs consumes 20 ma.
- The LCD-122A consumes 400 ma.
- The VT-101A consumes 100 ma.
- The TLY-309A consumes 350 ma. per name. Use a separate transformer for this display. A typical system with 9 voting stations comsumes 3.15 amps.
- The TLY-101A consumes 100 ma.
- The TimeKeeper consumes 100 ma.
- The DSP-250 consumes 200 ma.
- The DSP-500 consumes 350 ma.

The wall transformers provide the current as specified below.

- The WT-10VAC-500A provides 500 ma.
- The WT-10VAC-800A provides 800 ma.
- The WT-10VAC-2000A provides 2 amps.
- The WT-10VAC-4000A provides 4 amps.
- To reduce current consumption, use a 9VAC transformer.
- To increase the brightness of the displays, use a 10VAC transformer.

*WARNING: Using a power supply greater than 10VAC will result in shorter bulb life and hotter running voltage regulators. The power supply voltage affects the brightness of the RYG displays and the large LED displays.*

Refer to the national electric code for regulations in your area. Always use the shortest length phone cords as is reasonable.

- When the total current consumption is greater than 100ma and the cable length is over 25 feet, use 18 gauge or larger wire.
- When the total current consumption is greater than 100ma and the cable length is over 100 feet, use 16 gauge or larger wire.

## **Cable Length Specifications**