



Marquee Manager - v8.16 Protocol Specification

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Chapter One

Protocol Overview

This chapter introduces **Marquee Manager** protocol and describes how to utilize it from within your applications.

	Refer to the Marquee Manager Server Installation and User manual for more details on the Marquee Manager Server product.
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Getting Started

This manual contains procedural and conceptual information about the **Marquee Manager Protocol**. It is written for System Administrators and Developers to enable them to utilize Marquee Manager from within their applications.

While it is not required that the user have any prior programming or marquee display experience, the user should understand basic Windows NT/2000 concepts.

Documentation Conventions

This document contains the following documentation conventions to help you navigate through the manual, obtaining a better understanding of the material.



- Notes contain tips or reminders about procedural and conceptual information within the manual.



- Cross-references provide you with a link to further information about the section of the document that you are currently reading.

Chapter Two

Marquee Manager Server

This chapter describes **Marquee Manager Server** fundamentals that the application developer should know before attempting to develop a Marquee Manager enabled application.

Server Engine

The Marquee Manager Server engine is a Windows-NT/2K service which provides a vendor neutral interface to many different manufacturers marquees, andons, stack lights, clocks and speaker/tune devices. To accomplish this, a generic specification language is utilized to describe the text to be displayed, cell to be manipulated, or speaker/tune attributes. This document will describe these items in detail so that the developer may form the correct packets to achieve the desired results.

Connecting to the Server

The Marquee Manager Server engine listens, by default, on TCP/IP port number 8011. To connect to the engine the user must open a TCP/IP socket to the appropriate IP host, using this port. Once the connection is open the user may begin to execute the commands indicated below. You may opt to maintain this connection or it may be open and closed for each transaction if the application is not robust enough to provide reconnect on loss of this connection.

Disconnecting from the Server

When the application is finished with the Marquee Manager Server any outstanding transactions to TUNE, MARQUEE, GROUP, CELL etc. devices should first be cleared, before the application disconnects from the server. Unless the application is prepared to remember the assigned serial numbers for it's

transactions across restarts, this is important as to not orphan messages within the engine.

Object Terminology

Within this document the following acronyms (as detailed in the glossary) will be utilized.

Term	Description
CCD	Character Cell Display
CLK	Clock Display
CTRL	Display Controllers
CNT	Counter Display
CON	Controller
SCD	Solid Cell Display
TD	Tune Devices
SL	Stack Lights
TXT	Text Display

Packet Formats

All packets sent to and from the Marquee Manager Server follow a standard format. A standard transaction follows the following convention:

Client: operation;sub-op;[[object][;data]];

Server: operation;STATUS;code;message;

Field	Description	Notes
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operation	The operation family being requested.	
sub-op	The sub-operation within the operation family desired.	
object	The object the operation/sub-op is to be performed against.	
data	Any optional data required for the operation/sub-op to be executed.	
STATUS	A static value always included in a 'STATUS' packet to indicate it's type.	
code	The status code resulting from the execution of the operation/sub-option.	
message	The status message explaining the reason for the status code.	

For extended status commands the format above is consistent but one or more result packets may follow. Result packets will only be returned, for commands need to return more data to the client than a status code, and if the 'code' value of the STATUS packet is 0, which indicates the command was a success. The format of an extended transaction is as follows:

Client: operation;sub-op;[[object][;action]];

Server: operation;STATUS;code;message;

Server: operation;RESULT;eofflag;data;

For the 'RESULT' packet, the 'eofflag' will be '0' if another result packet will follow, or '1' if this is the last result packet. The data portion of the packet is specific to the command being executed, and the trailing ';' is always provided.

Field	Description	Notes
RESULT	A static value always included in a 'RESULT' packet to indicate it's type.	
eofflag	End of File flag. 1 is this is the last RESULT packet, 0 if more will follow.	
data	Operation/Sub-Op specific data.	

Note: The ';' character, as it is used as the protocol field separator, must be escaped if it is used within a field. To accomplish this prefix any ';' character with a '\' character, and escape any '\' character with another '\' character.

Chapter Three

ADMIN Operations

This chapter describes the **Marquee Manager** protocol subset known as the ADMIN operations. These commands, typically only used by administration tools, allow the developer to request information about the **Marquee Manager** Server status, force a clock sync to occur before it is scheduled, force destinations to be reset or cleared etc. These commands are not normally referenced by **Marquee Manager** gateways.

CLEAR

The CLEAR sub-operation requests that the engine clear all transactions tagged with with the specified host;appl;instance;. If the ADMIN;REGISTER; command has been issued before this command then no parameters are required, it will clear the values supplied with the REGISTER sub-op.

Format: ADMIN;CLEAR;[host;appl;[instance;]]
Status: ADMIN;STATUS;statuscode;statusmessage;

CLOCKSYNC

The CLOCKSYNC sub-operation requests that the engine force a clock sync packet to a display, if this display contains an onboard clock.

Format: ADMIN;CLOCKSYNC;destinationname;
Status: ADMIN;STATUS;statuscode;statusmessage;

DETAIL

The DETAIL sub-operation requests that the engine return certain details to allow the administrator to determine which version is running.

Format: ADMIN;DETAIL;
Status: ADMIN;STATUS;statuscode;statusmessage;

Result: ADMIN;RESULT;1;Marquee Manager
Server|hostname|major_ver|complete_ver|platform|start_datetime;

Field	Description
Server Name	Always "Marquee Manager Server"
Hostname	Host name of the server running the server
Major_Ver	Major version #
Complete_Ver	Complete version specification
Platform	Platform specification
Start_datetime	Date/time the engine started specified in UCT

LIST

The LIST sub-operation requests that the engine return a list of the known unique host;appl;instance; combinations which have been registered. One of these unique values may then be used with the ADMIN;CLEAR; command to remove all transactions from that source.

Format: ADMIN;LIST;
Status: ADMIN;STATUS;statuscode;statusmessage;
Result: ADMIN;RESULT;eof;host;appl;instance;

Field	Description
Host	Host name of registered server
Appl	Application name of the registered server
Instance	Optional instance name of the registered server

REFRESH

The REFRESH sub-operation requests that the engine force a destination to be rebooted, if possible, and then repaints the display with it's current messages.

Format: ADMIN;REFRESH;destinationname;
Status: ADMIN;STATUS;statuscode;statusmessage;

REGISTER

The REGISTER sub-operation requests that the engine tag any incoming transactions on this connection with the specified host/application information. This tagging can then be used in the future to remove all transactions.

Format: ADMIN;REGISTER;host;applname;[instance;]
Status: ADMIN;STATUS;statuscode;statusmessage;

RELOAD

The RELOAD sub-operation indicates to the Marquee Manager Server that it should reload, most likely because it's database contents have been manipulated and it needs to make changes to it's internal data structures as appropriate.

Format: ADMIN;RELOAD;
Status: ADMIN;STATUS;statuscode;statusmessage;

RESET

The RESET sub-operation requests that the engine clear a destination of it's current messages, returning it to it's default state.

Format: ADMIN;RESET;destinationname;
Status: ADMIN;STATUS;statuscode;statusmessage;

SECMODE

The SECMODE sub-operation requests that the engine return details as to which security mode it is running under.

Format: ADMIN;SECMODE;
Status: ADMIN;STATUS;statuscode;statusmessage;
Result: ADMIN;RESULT;1;Secmode;

Field	Description
Secmode	Security mode bitmask. Bit: 0 – Authentication required Off = No authentication required On = Authentication required Bit: 1-4 - Unused

	Bit: 5 – Ford Authentication (Requires bit 0 be on) Off = Ford authentication off On = Ford authentication on
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SHUTDOWN

The SHUTDOWN sub-operation requests that the engine cleanly shutdown. The engine will proceed to clear all displays and release all connections to devices.

Format: ADMIN;SHUTDOWN;

Status: ADMIN;STATUS;statuscode;statusmessage;

Chapter Four

CELL Commands

This chapter describes a subset of the **Marquee Manager** protocol known as the CELL operations. These commands enable the developer to remit transactions to Character Cell, Solid Cell and Stack Light based devices for processing.

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the cell destinations current transaction or queue. This sub-op requires the specification of the cell destination to be acted upon, and the serial number of a previous DISPLAY or PRIDISP transaction to clear. The 'serial#', if not known, can be obtained using the QUERY sub-op.

Format: CELL;CLEAR;celldevice;serial#;
Status: CELL;STATUS;statuscode;statusmessage;

DETAIL

The DETAIL sub-operation facilitates the interrogation of the detailed current configuration for the cell destination. Each row represents the defined cell variables for the specified location. The result value repeats until the "eof" flag = 1.

Format: CELL;DETAIL;celldevice;locationtokens;
Status: CELL;STATUS;statuscode;statusmessage;
Result: CELL;RESULT;eof;<CVAR-##>|value;

DISPLAY

The DISPLAY sub-operation requests that a cell be activated with the specified token values. The application issuing the DISPLAY

sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: CELL;DISPLAY;celldevice;tokens;
Status: CELL;STATUS;statuscode;statusmessage;
Result: CELL;RESULT;1;serial#;

QUERY

The QUERY sub-operation facilitates the interrogation of the cell contents for the specified cell device. For the specified cell, this sub-op returns the serial # for the transaction that populated this cell, as well as the transaction contents. This sub-op requires the specification of the cell destination, as well as the row and column to be acted upon.

Format: CELL;QUERY;celldevice;locationtokens;
Status: CELL;STATUS;statuscode;statusmessage;
Result: CELL;RESULT;0;serial#;
Result: CELL;RESULT;1;tokens;

Chapter Five

CELLGROUP Commands

This chapter describes a subset of the **Marquee Manager** protocol known as the CELLGROUP operations. These commands enable the developer to remit transactions to cell groups for processing. Cell groups allow the developer to update multiple cell based displays with a single command. Cell groups may include Character Cell, Solid Cell or Stack Lights.

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the cell devices current transaction or queue. This sub-op requires the specification of the cell group to be acted upon, and the serial number of a previous DISPLAY or PRIDISP transaction to clear. The 'serial#', if not known, can be obtained using the QUERY sub-op.

Format: CELLGROUP;CLEAR;cellgroup;serial#;
Status: CELLGROUP;STATUS;statuscode;statusmessage;

DISPLAY

The DISPLAY sub-operation requests that a cell be activated with the specified token values. The application issuing the DISPLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: CELLGROUP;DISPLAY;cellgroup;tokens;
Status: CELLGROUP;STATUS;statuscode;statusmessage;
Result: CELLGROUP;RESULT;1;serial#;

QUERY

The QUERY sub-operation facilitates the interrogation of the cell contents for the specified cell device. For the specified cell group, this sub-op returns the serial # for the transaction that populated this cell, as well as the transaction contents. This sub-op requires the specification of the cell group, as well as the row and column to be acted upon.

Format: CELLGROUP;QUERY;cellgroup;locationtokens;
Status: CELLGROUP;STATUS;statuscode;statusmessage;
Result: CELLGROUP;RESULT;0;serial#;
Result: CELLGROUP;RESULT;1;tokens;

Chapter Six

CONTROLLER Operations

This chapter describes the **Marquee Manager** protocol subset known as the CONTROLLER operations. These commands allow the developer to request information about the defined controllers of any type as well as remit transactions to individual controllers.

CDETAIL

The CDETAIL; sub-operation requests that the engine return the details of a cycle definition on the specified controller.

Format: CONTROLLER;CDETAIL;contname;cycle;
Status: CONTROLLER;STATUS;statuscode;statusmessage;
Result: CONTROLLER;RESULT;eof;template|start|end|dur;

Field	Description
template	Name of the marquee this is a member of the specified template.
start	Start time of cycle
end	End time of cycle
dur	Duration of cycle

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the controller current or pending queue. It requires the specification of the controller to be acted upon, and the serial number of a previous SWITCH transaction to clear. Unknown 'serial#'s can be obtained using the QUERY sub-op.

Format: CONTROLLER;CLEAR;contname;serial#;
Status: CONTROLLER;STATUS;statuscode;statusmessage;

LIST

The LIST sub-operation requests that the engine return a list of the known cycles & templates on the specified controller.

Format: CONTROLLER;LIST;conname;
Status: CONTROLLER;STATUS;statuscode;statusmessage;
Result: CONTROLLER;RESULT;eof;type|name;

Field	Description
Type	CYCLE or TEMPLATE
Name	Name of cycle or template

QUERY

The QUERY sub-operation facilitates the interrogation of the current controller configuration. For each occupied slot this sub-op returns the serial # for the transaction that populated this slot, as well as the transaction contents.

Format: CONTROLLER;QUERY;conname;
Status: CONTROLLER;STATUS;statuscode;statusmessage;
Result: CONTROLLER;RESULT;eof;tokens;

Field	Description
tokens	The controller tokens specified

SWITCH

The SWITCH sub-operation enters a template/cycle selection transaction into the controllers queue. The application issuing the SWITCH sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: CONTROLLER;SWITCH;conname;tokens;
Status: CONTROLLER;STATUS;statuscode;statusmessage;

TDETAIL

The TDETAIL; sub-operation requests that the engine return the details of a template definition on the specified controller.

Format: CONTROLLER;TDETAIL;contname;template;
Status: CONTROLLER;STATUS;statuscode;statusmessage;
Result: CONTROLLER;RESULT;eof;marqueename;

Field	Description
marqueename	Name of the marquee this is a member of the specified template.

Chapter Seven

GROUP Operations

This chapter describes a subset of the **Marquee Manager** protocol known as the GROUP operations. These commands enable the developer to obtain information about marquee groups defined within the associated Marquee Manager server and remit transactions to marquee groups for processing. This set of operations can be used to interrogate groups of any type as well as remit transactions to groups of type text, clock and counter displays marquees. Each sub-op will note which type of displays they apply to.

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the group queue. It requires the specification of the destination group to be acted upon, and the serial number of a previous DISPLAY or PRIDISP transaction to clear. This sub-op applies to groups of type text, clock and counter.

Format: GROUP;CLEAR;group;serial#;
Status: GROUP;STATUS;statuscode;statusmessage;

DETAIL

The DETAIL sub-operation facilitates the interrogation of the members of the specified group. The result value repeats until the “eof” flag = 1. This sub-op applies to groups of any type.

Format: GROUP;DETAIL;groupname;
Status: GROUP;STATUS;statuscode;statusmessage;
Result: GROUP;RESULT;eof;marquee;

DISPLAY

The DISPLAY sub-operation performs the same function as the PRIDISP sub-operation, but the priority is always 9, the lowest priority. The application issuing the DISPLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op. This sub-op applies to groups of type text, clock and counter.

Format: GROUP;DISPLAY;groupname;tokens;
Status: GROUP;STATUS;statuscode;statusmessage;
Result: GROUP;RESULT;eof;serial#;

LIST

The LIST sub-operation facilitates the interrogation of the known groups of any type. Groups of clock displays are not supported. The result value repeats until the "eof" flag = 1.

Format: GROUP;LIST;
Status: GROUP;STATUS;statuscode;statusmessage;
Result: GROUP;RESULT;eof;group|description;

PRIDISP

The PRIDISP sub-operation enables priority based marquee transactions to be submitted. The highest priority transactions will seize the display if any transactions exceed the displays threshold priority, and any lower priority transactions will wait in the queue until all transactions with a priority value higher than the priority threshold have been cleared. The application issuing the PRIDISP sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: GROUP;PRIDISP;marquee;priority;tokens;
Status: GROUP;STATUS;statuscode;statusmessage;

Result: GROUP;RESULT;1;serial#;

QUERY

The QUERY sub-operation facilitates the interrogation of the display queue contents for the specified group. For each slot found this sub-op returns the serial # for the transaction that populated this slot, as well as the transaction contents. This sub-op applies to groups of type text, clock and counter.

Format: GROUP;QUERY;group;slot#;

Status: GROUP;STATUS;statuscode;statusmessage;

Result: GROUP;RESULT;0;serial#;

Result: GROUP;RESULT;1;tokens;

Chapter Eight

MARQUEE Operations

This chapter describes the **Marquee Manager** protocol subset known as the MARQUEE operations. These commands allow the developer to request information about the defined destinations of any type as well as remit transactions to individual text, clock and counter displays marquees. Each sub-op will note which type of displays they apply to.

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the display destinations current or pending queue. This sub-op applies to text, clock, and counter displays. It requires the specification of the destination to be acted upon, and the serial number of a previous DISPLAY or PRIDISP transaction to clear. Unknown 'serial#'s can be obtained using the QUERY sub-op.

Format: MARQUEE;CLEAR;marquee;serial#;
Status: MARQUEE;STATUS;statuscode;statusmessage;

DETAIL

The DETAIL sub-operation facilitates the interrogation of the detailed configuration for any type of destination. The result value repeats until the "eof" flag = 1. This sub-op applies to any destination type with the fields returned determined by the "Applies To" column of the field definition table below.

Format: MARQUEE;DETAIL;marquee;
Status: MARQUEE;STATUS;statuscode;statusmessage;
Result: MARQUEE;RESULT;eof;field|value(s);

Field	Applies To	Description
<FNT-xxx>	TXT	Supported font and

	CCD SCD CLK	Width Height
BinCount	CCD SCD SL	Number of bins supported
Cell Size	CCD SCD SL	Pixel size (Height Width)
ColorsAvail	TXT CCD SCD CLK SL	Color Mask 1 = Black 2 = Red 4 = Green 8 = Amber 16 = Light Red 32 = Light Freen 64 = Brown 128 = Orange 256 = Yellow 512 = Blue 1024 = Clear
CycleSupport	TD	Cycle support (on/off/iteration/duration support) 0=on/off only 1=iteration available 2=duration
DefaultMessage	CCD CLK CNT CON SCD TD SL TXT	Tokens as appropriate
DeviceState	All	0 = Allocated but not configured 1 = Configured but not connected 2 = Disconnected 3 = Connected (Normal) 4 = Deallocated

DisplayType	All	0 = Marquee, 1 = Cell, 2 = Tune, 3 = Clocks, 4 = Stack Light, 5=ColorBlock, 6=Controller
FlashAvail	TXT CCD SCD SL CLK	Availability of flashing (0=not available, 1=available) Note: Depreciated, use ModesAvail in new gateways.
Manufacturer	All	Manufacturer name
Model	All	Manufacturer model
ModesAvail	TXT CCD SCD SL CLK	Mode Mask 1 = Static 2 = Flash 4 = Fast Flash 8 = Strobe 16 = Reverse 32 = Reverse Flash 64 = Reverse Fast Flash
ScrollAvail	TXT CCD SCD SL CLK	Scroll Masl 0=Not available 1=Available
SignSize	TXT CCD SCD SL CLK	Size in pixels (Height Width)
SlotInfo	All	Queue size of display and remaining queue entries available for use (Queuesize Available)
State	All	0 = Enabled 1 = Disabled 2 = Test Mode
TuneCount	TD	Number of tunes supported

DISPLAY

The DISPLAY sub-operation performs the same function as the PRIDISP sub-operation, but the priority is always submitted as 9, the lowest priority. This sub-op applies to text, clock, and counter displays. The application issuing the DISPLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: MARQUEE;DISPLAY;marquee;tokens;
Status: MARQUEE;STATUS;statuscode;statusmessage;
MARQUEE;RESULT;1;serial#;

LIST

The LIST sub-operation facilitates the interrogation of the known destinations (of any type). The result value repeats until the "eof" flag = 1. Type codes and device state's reported are defined as listed under the MARQUEE;DETAIL sub-op.

Format: MARQUEE;LIST;
Status: MARQUEE;STATUS;statuscode;statusmessage;
Result:
MARQUEE;RESULT;eof;marquee;description;typecode;devicestate;

PRIDISP

The PRIDISP sub-operation enables priority based marquee transactions to be submitted. The highest priority transactions will seize the display if any transactions exceed the displays threshold priority, and any lower priority transactions will wait in the queue until all transactions with a priority value higher than the priority threshold have been cleared. This sub-op applies to text, clock, and counter displays. Other destination types are populated with the CELL or TUNE operations. The application issuing the PRIDISP sub-op should remember the 'serial#' returned so that

the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: MARQUEE;PRIDISP;marquee;priority;tokens;
Status: MARQUEE;STATUS;statuscode;statusmessage;
Result: MARQUEE;RESULT;1;serial#;

QUERY

The QUERY sub-operation facilitates the interrogation of the current display queue contents for the specified device. This sub-op applies to text, and counter displays. There is no ability to query clocks, as they contain no slots, only a default message as found in the MARQUEE;DETAIL operation. For each found slot this sub-op returns the serial # for the transaction that populated this slot, as well as the transaction contents.

Format: MARQUEE;QUERY;marquee;slot#;
Status: MARQUEE;STATUS;statuscode;statusmessage;
Result: MARQUEE;RESULT;0;serial#;
Result: MARQUEE;RESULT;1;tokens;

Chapter Nine

TUNE Commands

This chapter describes a subset of the **Marquee Manager** protocol known as the TUNE operations. These commands enable the developer to remit transactions to tune based devices for processing. This operation only applies to Tune destinations.

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the tune devices queue. This sub-op requires the specification of the tune destination to be acted upon, and the serial number of a previous PLAY or PRIPLAY transaction to clear.

Format: TUNE;CLEAR;speaker;serial#;
Status: TUNE;STATUS;statuscode;statusmessage;

PLAY

The PLAY sub-operation performs the same function as the PRIPLAY sub-operation, but the priority is always 9, the lowest priority. The application issuing the PLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#', if not known, can also be obtained using the QUERY sub-op.

Format: TUNE;PLAY;speaker;tokens;
Status: TUNE;STATUS;statuscode;statusmessage;
Result: TUNE;RESULT;1;serial#;

PRIPLAY

The PRIPLAY sub-operation enables priority based tune transactions to be submitted. The highest priority transaction will seize the sound device and sound according to the specified token rules. The application issuing the PRIPLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#', if not known, can also be obtained using the QUERY sub-op.

Format: TUNE;PRIPLAY;speaker;priority;tokens;
Status: TUNE;STATUS;statuscode;statusmessage;
TUNE;RESULT;1;serial#;

QUERY

The QUERY sub-operation facilitates the interrogation of the queue contents for the specified tune destination. For each slot found this sub-op returns the serial # for the transaction that populated this slot, as well as the transaction contents.

Format: TUNE;QUERY;speaker;slot#;
Status: TUNE;STATUS;statuscode;statusmessage;
Result: TUNE;RESULT;0;serial#;
Result: TUNE;RESULT;1;tokens;

Chapter Ten

TUNEGROUP Commands

This chapter describes a subset of the **Marquee Manager** protocol known as the TUNEGROUP operations. These commands enable the developer to remit transactions to tune groups for processing.

CLEAR

The CLEAR sub-operation facilitates the removal of an existing transaction from the tune groups queue. This sub-op requires the specification of the tune group to be acted upon, and the serial number of a previous PLAY or PRIPLAY transaction to clear.

Format: TUNEGROUP;CLEAR;speakergroup;serial#;
Status: TUNEGROUP;STATUS;statuscode;statusmessage;

PLAY

The PLAY sub-operation performs the same function as the PRIPLAY sub-operation, but the priority is always 9, the lowest priority. The application issuing the PLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: TUNEGROUP;PLAY;speakergroup;tokens;
Status: TUNEGROUP;STATUS;statuscode;statusmessage;
Result: TUNEGROUP;RESULT;1;serial#;

PRIPLAY

The PRIPLAY sub-operation enables priority based tune transactions to be submitted. The highest priority transaction will seize the tune group. The application issuing the PRIPLAY sub-op should remember the 'serial#' returned so that the CLEAR sub-op may be used later to remove it. The 'serial#' can also be obtained using the QUERY sub-op.

Format: TUNEGROUP;PRIPLAY;speakergroup;priority;tokens;
Status: TUNEGROUP;STATUS;statuscode;statusmessage;
Result: TUNEGROUP;RESULT;1;serial#;

QUERY

The QUERY sub-operation facilitates the interrogation of the queue contents for the specified tune group. For each slot found this sub-op returns the serial # for the transaction that populated this slot, as well as the transaction contents.

Format: TUNEGROUP;QUERY;speakergroup;slot#;
Status: TUNEGROUP;STATUS;statuscode;statusmessage;
Result: TUNEGROUP;RESULT;0;serial#;
Result: TUNEGROUP;RESULT;1;tokens;

Chapter Eleven

Formatting/Operation Tokens

This chapter describes a subset of the **Marquee Manager** protocol formatting and operation tokens. These tokens, when inserted within the transaction data, change the way in which messages are processed on Text, Character Cell, Solid Cell, Tune, Stack Light and Controllers.

The tokens listed below will only be supported if within the destinations capabilities.

Background Colors

Background color tokens change the secondary/background color of the specified item as specified. If the color is not available on the end device then the nearest available color is used. If no similar color is available then the devices default color is utilized. All text following the token will assume that background color, until another background color token is encountered or the end of the line is reached, within display capabilities. For each line, should no color token be specified, <BCL-DEF> will be assumed, until a <BCL-xxx> tag is specified.

Token	Description	Notes
<BCL-AMB>	Amber	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.

<BCL-BLK>	Black	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-BLU>	Blue	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-BRN>	Brown	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-CLR>	Clear	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-DEF>	Default color (display specific)	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-GRN>	Green	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-LGR>	Light Green	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.

<BCL-LRD>	Light Red	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-ORG>	Orange	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-RED>	Red	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-WHI>	White	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<BCL-YLW>	Yellow	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.

Colors

Color tokens change the color of the specified item as specified. If the color is not available on the end device then the nearest available color is used. If no similar color is available then the devices default color is utilized. Multiple color tokens may be inserted per line. All text following that token will assume that color, until another color token is encountered or the end of the line is reached, within display capabilities. For each line, should no

color token be specified, <COL-DEF> will be assumed, until a <COL-xxx> tag is specified.

Token	Description	Notes
<COL-AMB>	Amber	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-BLK>	Black	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-BLU>	Blue	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-BRN>	Brown	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-CLR>	Clear	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-DEF>	Default color (display specific)	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack

		Lights.
<COL-GRN>	Green	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-LGR>	Light Green	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-LRD>	Light Red	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-ORG>	Orange	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-RED>	Red	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-WHI>	White	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<COL-YLW>	Yellow	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack

		Lights.
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Fonts

Font tokens change the font attribute of the specified text item. If the specified font is not available then the devices default font will be utilized. For each line, should no font token be specified, <FNT-DEF> will be assumed, until a <FNT-xxx> tag is specified.

Token	Description	Notes
<FNT-BLD>	Bold	Only applies to Character Cell and Text Displays.
<FNT-CAP>	All Capitals	Only applies to Character Cell and Text Displays.
<FNT-DEF>	Default font (display specific)	Only applies to Character Cell and Text Displays.
<FNT-FIX>	Fixed width	Only applies to Character Cell and Text Displays.
<FNT-SML>	Small	Only applies to Character Cell and Text Displays.

Miscellaneous

The miscellaneous tokens allow you to specify various items such as what line is to be specified, insertion of date and time values into text messages etc.

Token	Description	Notes
<CLM-#>	Specifies the cell column to be set	Only applies to Character Cell, Solid Cell and Stack Light destinations. Must be 2 digits.
<CVAR-##>	Cell bin value to be activated.	Only applies to Character Cell, Solid Cell and Stack Light destinations
<CYC-cyclename>	Cycle name to be selected.	Only applies to Controllers.
<DATE>	Insert current date at the specified location in the text.	Only applies to Clocks and Text Displays which support it.
<LIN-#>	Line number that following tokens/text apply to. At a minimum <LIN-1> is required.	Only applies to Text Displays.
<ROW-##>	Specifies the cell row to be set.	Only applies to Character Cell, Solid Cell and Stack Light destinations. Must

		be 2 digits.
<TIME>	Insert current time at the specified location in the text.	Only applies to Clocks and Text Displays which support it. Sets the display format for clocks.
<TIME-12>	Insert the current time, in 12 hour format, at the specified location in the text.	Only applies to Clocks and Text Displays which support it. Sets the display format for clocks.
<TIME-24>	Insert the current time, in 24 hour format, at the specified location in the text.	Only applies to Clocks and Text Displays which support it. Sets the display format for clocks.
<TMPL-templname>	Template name to be selected.	Only applies to Controllers.

Modes

Mode tokens change the mode attribute of the specified item as specified. If the specified mode is not available then the closest available mode will be used or the devices default mode will be utilized. All text following that token will assume that mode, until another mode token is encountered or the end of the line is reached, within display capabilities. For each line, should no mode token be specified, <MOD-DEF> will be assumed, until a <MOD-xxx> tag is specified.

Token	Description	Notes
<MOD-DEF>	Default mode (display specific)	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<MOD-FFL>	Fast Flashing	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<MOD-FL>	Flashing	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<MOD-ST>	Static	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<MOD-STR>	Strobe	Only applies to Character Cell, Solid Cell, Text Displays, Counters, and Stack Lights.
<MOD-REV>	Reverse	Only applies to Character Cell, Solid Cell, Text Displays, Counters
<MOD-RFL>	Reverse Flash	Only applies to Character Cell, Solid Cell, Text

		Displays, Counters
<MOD-RFF>	Reverse Fast Flash	Only applies to Character Cell, Solid Cell, Text Displays, Counters

Scrolling

Scrolling tokens change the scrolling attribute of the specified text item. If the specified scrolling method is not available then the devices default scrolling method will be utilized.

Token	Description	Notes
<SCR-0>	Slow	Only applies to Text Displays.
<SCR-1>	Medium	Only applies to Text Displays.
<SCR-2>	Fast	Only applies to Text Displays.
<SCR-DEF>	Default scrolling method (device specific)	Only applies to Text Displays.
<SCR-S>	Static	Only applies to Text Displays.

Tunes

Tune related tokens enable the user to specify parameters related to audible tones.

Token	Description	Notes
<ITER-count>	Iteration count. Valid range from 1 – 99.	Only applies to Tune destinations.
<OFF-seconds>	Off time in seconds. Valid range from 1 – 99.	Only applies to Tune destinations.
<ON-seconds>	On time in seconds. Valid range from 1 – 99.	Only applies to Tune destinations.
<TUNE-###>	Tune number. Valid range from 1 – 255.	Only applies to Tune destinations.

Technical Assistance

FAQ

Every NETCON product contains a FAQ file specific to that product. You can view this FAQ file by visiting the NETCON web site (www.netcontech.com) and browse the product page for the product you are using.

Support Contracts

You may purchase a support contract for Marquee Manager based products. Various levels of support are available. View the NETCON web site (www.netcontech.com) and browse the product page for product you are using.

Help Desk

To reach our help desk please use one of the following methods:

Telephone: +1.519.652.0401

Fax: +1.519.652.9275

Web: www.netcontech.com - Customer Care

E-Mail: support@netcontech.com

Please have your support contract, or product license key ready, before calling or include it in your correspondence. Support is free for product trials and for the first 30 days of product ownership.

Glossary

Controller

A display controller is a system board level device which can be used to control certain aspects of the operation of a marquee, or collection of marquees. Items such as scroll speeds, template selection, led intensity, and power saving modes are all managed via a controller.

Marquee

A sign display that serves as a visualization communication tool, providing the means to display time, date and message text such as production counts, and what areas of a plant are experiencing problems.

Marquees types may include those capable of displaying text such as the Nu-Media single and dual line marquees or cell-based Andon boards such as the 974 models from Static Controls Corporation which display data in a grid format.

Priority

The importance or priority that can be placed on each message sent to the marquee sign, with one being the highest priority and nine being the lowest priority.

Speaker

A device connected to the marquee display that allows a tune to be played for alarm states of Generate, Acknowledge, or Reset.