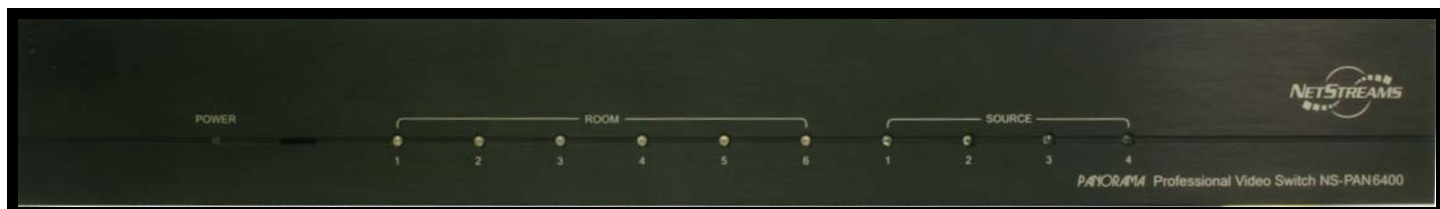




NetStreams® PANORAMA PAN6400 Multi-Room Video System

RS-232 Integration Guide



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Introduction

The *NetStreams PAN6400* Multi-Room Video system is a point to multi-point, balanced line level video system. The Pan6400 distributes HDTV quality (1080i) video to six display locations and is expandable up to 18 locations. The system is easy to install, easy to use, and easy to integrate with Multi-Room Audio and Control systems, using IR or RS-232.

With the *PAN6400*, the applications are endless. This manual details basic connection and control capabilities of the *PAN6400*.

NetStreams Documentation

To view or print *NetStreams* documentation:

1. From Internet Explorer, go to www.netstreams.com.
2. Click the Dealer Login button.
3. Log in with your dealer user name and password.
4. Select **Documents**.

Contacting NetStreams

If you have technical questions about the *PAN6400* that are not covered in this manual:

- visit the dealer section of the *NetStreams* website (www.netstreams.com) for application notes.
- email support@netstreams.com.
- call 1-866-353-3496 or 1-512-977-9393.

Serial Port Parameters and Pin-Outs

There are two RS-232 connectors located on the back panel of the *PAN6400* (see Figure 2-1).

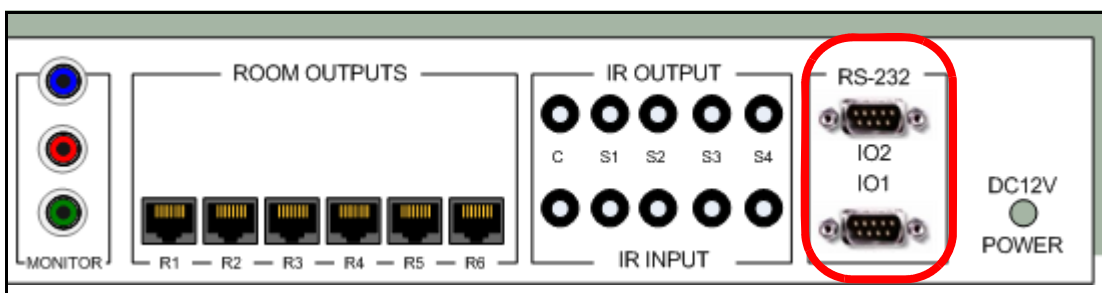


Figure 2-1 RS-232 connectors

IO1 is used to connect to the *Musica™ MU5066ADC* or another *PAN6400*. IO2 is used to connect to a computer or other control device.

Parameters

The following parameters refer to both the IO1 and IO2 RS-232 connections:

Common Standard	RS-232c
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	N
Pacing	None
Hardware Handshaking	None
Software Handshaking	None

Pin-Outs

The pin-outs for IO1 and IO2 are identical and are described in Table 2-1.

Table 2-1
Serial Port Pin-Out

Pin	Function	Abbreviation
1	Not Used	
2	Received Data	RD/RX/RXD
3	Transmitted Data	TD/TX/TXD
4	Not Used	
5	Signal Ground	GND
6	Not Used	
7	Not Used	
8	Not Used	
8	Not Used	

IR Codes

This chapter provides a list of IR codes for programming the *PAN6400*.

Table 3-1
IR Codes

Command	Pan6400	KL100	DATA
On	Power On		0FH
Off	Power Off	*(Power Off)	ODH
Mute Toggle	Mute		14H
Source Ring	Source		05H
Back Light C1	C1		OBH
Back Light C2	C2		17B
Menu Toggle	Menu		07H
Pause	#1		08H
Stop	#9		04H
Play	#2	Play/Stop (#2)	0CH
Rew	#3 (Shuffle)		02H
Up Arrow			0AH
FFW	#4 (Repeat)		06H
Left Arrow	#7		0EH
Down Arrow	"#"		01H
Right Arrow	#8		09H
Prev	#5	Transport Left (#5)	03H
Next	#6	Transport Right (#6)	1DH
Source Power	*(Mode)		00H
Volume (Menu) Up	Up	Up	1CH
Volume (Menu) DN	Down	Down	12H
Volume (Menu) L	Macro 1		18H
Volume (Menu) R	Macro 2		10H
Source 1	Switch	S1 (On)	21H
Source 2	Switch	S2 (On)	22H
Source 3	Switch	S3 (On)	23H
Source 4	Switch	S4 (On)	24H

RS-232c Control

The protocol described in this document provides the following commands:

Table 3-2
RS-232c Control

Command	Description
State	Version, Source, IR Frequency
Chang	Source, IR Frequency
Nudge	Single adjustments in one direction, Source
AllOff	All zones off command
AllOn	All zones on command (turns all zones on to last known state. If you need to turn on all zones to a known source, use the ChangeSrc command.
Event	These commands control the unsolicited data subscriptions; Source (Src)
Press	These commands allow IR source and display control using RS-232.

The system sends unsolicited data after any changes in the system are made. Input lines are to be terminated with a carriage return (CR) or a CR/line feed (LF) combination.

Commands

This chapter discusses:

- command parameters,
- command sets,
- sample commands, and
- the unsolicited data command set.

for the *PAN6400*.

NOTE: If you are using a *Musica* MU5066ADC in conjunction with the *PAN6400*, please refer to *Musica* IR commands in the *Musica 5066 Integration and Design Guide* (located on the *NetStreams* Dealer web site).

Command Parameters

The following parameter types are used in the command table below. Parameters are entered and returned as ASCII strings.

Table 4-1
Command Parameters

Parameter	Description
Z	Zone number. Range is 0-6. The 0 parameter is for all zones.
S	Source. 0=Off. 1 to 4 = source.
V	Volume 0-35
X	Logic Level Parameter. Values are 0=Off, and 1=On. (Loudness uses the X parameter in 2.0).
D	Direction to ramp. 0=down, 1=up.
P	Page Group to enable/disable.
C	Registered Source command
E	Enable=1/Disable=0

PAN6400 Command Set

When programming IR for the *PAN6400*, use the following RS-232 commands. If connected to an MU5066ADC, refer to the *Musica MU5066 Integration & Design Guide* on the *NetStreams* web site for the MU5066 command set.

Table 4-2
Commands from PC

Command	Sub_Command			Parameters				Send Command			Respond	Note
	Attribute	Description	Code	Zone(Z)	Value name (Initial)	Value	Dir(D)	State	Chang	Nudge		
State	Version	Version(Ver)	51	0	---	51	---	State/51/Z	---	---	State/51/0/N/50901	Zone: 0 (Main for version) Initialize Commands: State/51/V/I
Chang	Source(Src)	Source(Src)	61	0-6	Source No. (S)	0,1-4,N	0,1	State/61/Z	Chang/61/Z/S	Nudge/61/Z/D	State/61/Z/S	Source: 0 (Off) N (No change, just power on)
	IRFrequency (IRFreq)	IRFrequency (IRFreq)	62	---	Select Output. (O) Output No. (N) IR Frequency (KHz).(I)	R,S (0,1-6)(0,1-4) 0,1	0,1	State/62/O/N	Chang/62/O/N/I	Nudge/62/O/N/D	State/62/O/N/38(56)	Source: 0 (All) R (Room IR), S (Source IR) IR: 0 (38KHz), 1 (56 KHz)
Nudge	Status	Front Panel (Panel)	71	---	On/Off (O)	0,1	0,1	State/71	Chang/71/O	Nudge/71/D	State/71/O	---
Press			51	---	S, K	S (0-4, 10-16), K (0-9)						S (0:all source, 1-4:S1-S4, 10: all zone, 11-16:Z1-Z6) K (0-9:Remote Button Number)

Command	Sub_Command			Parameters		Send Command	Respond	Note
	Attribute	Description	Code	Zone(Z)				
Event	Source	Source Settings	51	---	0 : disable, 1 : enable	Event/51/E	Event/51/Z1/Z2/Z3/Z4/Z5/Z6	Z1-6 : Source No. for each Zone

Table 4-3
Commands from MU5066

Command	Sub_Command			Received Command	Respond	Note
	Attribute	Description	Code			
Event	Source	Source Settings	11	Event/11/Z1/Z2/Z3/Z4/Z5/Z6	---	Z1-6 : Source No. for each Zone, Source No. : 0(Off)
Event Press	---	---	---	EventPress/S/K/Z	---	S : Source Number K : Key Number Z : Zone Number

Sample Commands

Table 4-4
Sample Commands

Command	State	Example	Response from Pan6400
Zone Status	State/61/Z (Z=Zone) [0,1-6]	State/61/2 (Status of Zone 2)	State/61/2/3
Change Source	Chang/61/Z/S (Z=Zone, S=Source) [0,1-4]	Chang/61/3/2 (Switch Source 2 to Zone 3)	State/61/3/2* (*This command will follow unsolicited data if enabled.)
Nudge Source	Nudge/61/Z/D (Z=Zone, D=Direction) [0,1-4/ 0 down -1 up]	Nudge/61/3/1 (Switch to next source in Zone 3)	State/61/3/3* (* This command will follow unsolicited data if enabled.)

Table 4-4
Sample Commands

Command	State	Example	Response from Pan6400
Change Front Panel Display	Chang/71/0 Turn off front panel display Chang/71/1 Turn on front panel display		
Pause Source 1		Press/51/1/1	
Power Zone 1 Display		Press/51/11/2	

Unsolicited Data Command Set

These commands render unsolicited data that can be used to update status feedback on touch panels, software, or keypads.

Table 4-5
Unsolicited Data Command Set

Command	Description	Return String
Event/51/1	Turns on unsolicited data.	Event/51/21/22/23/24/25/26
Event/51/O	Turns off unsolicited data.	

