AV-HS410-Protocol-Ver1.3E

Live Switcher   AW-HS410
Interface Specifications

Vol.2
Network Control Protocol
(AUXP_IP)

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1. Introduction

This document explains the protocol for AUX remote panels for AV-HS410 (Multi format compact live switcher). (Protocol between AV-HS410 and the AUX remote panel.)
The communication specification is based on TCP/IP or UDP/IP.
1 packet starts from [STX]0x02 and ends with [ETX]0x03.
Command consist of 4character followed by : (colon).
There is the case multiple data will be sent , still each data is colon-delimited.
Numerical data is sent in ascii format.

2. About Communication

Communication between AUX remote panel and AV-HS410

It is possible to change IP address with HS410 menu to use port (LAN side) of HS410.
IP adores of AUX Pane should be assigned correctly according to IP address domain of HS410.
Communication from HS410 to AUX remote panel will be in multicast so multicast address should be assigned separately (Default is 224.0.0.200)

Communication between AUX Panel - HS410 will be changed TCP/IP or UDP/IP depends on contents.
TCP/IP: Port 60020:AUX Panel -> HS410   [XPTswitch, AUTO execution]
UDP/IP: Port 60020:AV-HS410 -> AUX Panel [Tally, XPT status]

3.Process in every field

1) AV-HS410

HS410 sends following two commands to AUX remote pane on regular interval.

ABST command (Status of XPT and Tally on each buses.)
ATST command (Status of transition.)
SPAT command (Status of　AUX or PinP transition pattern.)

2) AUX Remote Panel

AUX remote panel should send SPAT command (Parameter1:0, Parameter2:00) on every 500m sec interval. Because HS410 needs to know if AUX remote panel is connected and working. But HS410 doesn't send response to SPAT command.

4. List of Command

**Communication path REMt is the command which can be used for AUX remote panel to HS410 via TCP/IP.
REMu is the command which can be used for HS410 to AUX remote panel via UDP/IP.

Command related to XPT

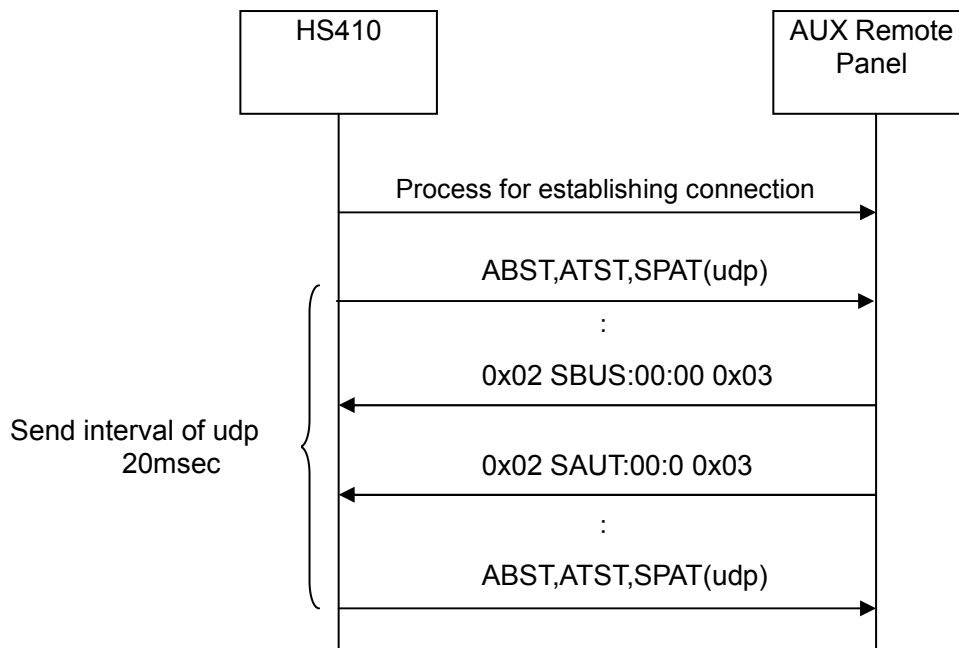| No	Command	Function	Communication Path
	SBUS	Selecting bus	REMt

Command related to Transition

No	Command	Function	Communication Path
	SAUT	Setting AUTO transition (activating trigger on)	REMt
	ABST	Reply of bus status (XPT status is returned)	udp,REMu
	ATST	Reply of AUTO transition status	udp,REMu
	SPAT	Setting or reply of transition pattern	udp,REMt

Command Sequence
HS410 start sending udp after establishing connection between HS410 and AUX remote panel.
After establishing connection, AUX remote panel send SBUS,SAUT,SPAT commands.

The example of communication sequence of udp and REMt,REMu is shown below.

```
        ┌─────────────┐                        ┌─────────────┐
        │   HS410     │                        │ AUX Remote  │
        │             │                        │   Panel     │
        └──────┬──────┘                        └──────┬──────┘
               │                                      │
               │  Process for establishing connection │
               │ ───────────────────────────────────▶ │
               │                                      │
               │         ABST,ATST,SPAT(udp)          │
               │ ───────────────────────────────────▶ │
               │                  :                   │
               │        0x02 SBUS:00:00 0x03          │
               │ ◀─────────────────────────────────── │
               │                                      │
               │        0x02 SAUT:00:0 0x03           │
               │ ◀─────────────────────────────────── │
               │                  :                   │
               │         ABST,ATST,SPAT(udp)          │
               │ ───────────────────────────────────▶ │
               │                                      │
```

Send interval of udp 20msec

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5. Command related to XPT

No	Command	Function
	SBUS	Selecting bus

【No of Parameter】
2

【Parameter】
Parameter 1: Bus selection

00	A bus (On the panel in every mode setting)
01	B bus (Under the panel in every mode setting)
02	PGM (PGM in every mode setting)
03	PVW (PVW in every mode setting)
04	KEY-F
05	KEY-S
06	DSK-F
07	DSK-S
08	-
09	-
10	PinP1
11	PinP2
12	AUX1
13	AUX2
14	AUX3
15	AUX4

Parameter 2: Source

00	XPT1
～	
23	XPT24
50	INPUT1
～	
62	INPUT13
70	Color Bar
71	CBGD
72	Black
73	Still1V
74	Still2V
75	Clip1V
76	Clip2V
77	PGM
78	PVW
79	KEYOUT
80	CLN
81	MULTI View
82	-
90	-
91	M-PVW
92	Still1K
93	Still2K
94	Clip1K
95	Clip2K
96	CBGD2

【Function】
 - Setting of bus selection.
 - Work in normal XPT switching process

【Notes】
 None

6. Command related to Transition

No	Command	Function
	SAUT	Setting AUTO transition (activating trigger on)

【No of Parameter】
　　　2

【Parameter】
　Parameter 1: Setting of the target for transition effect

00	BKGD
01	KEY
02	DSK
03	-
04	PinP1
05	PinP2
06	FTB

【Parameter】
　Parameter 1: Setting of operation

0	Activating trigger on (when AUTO button is pressed)

【Function】
　- Setting of AUTO transition. (Issue of trigger)
　- Work in normal XPT switching process

【Notes】
　None

No	Command	Function
	ABST	Reply of bus status (XPT status is returned)

【No of Parameter】
    3

【Parameter】
 Parameter 1: Bus selection

00	A bus (On the panel in every mode setting)
01	B bus (Under the panel in every mode setting)
02	PGM (PGM in every mode setting)
03	PVW (PVW in every mode setting)
04	KEY-F
05	KEY-S
06	DSK-F
07	DSK-S
08	-
09	-
10	PinP1 (destination bus of PinP1 transition)
11	PinP2 (destination bus of PinP2 transition)
12	AUX1 (destination bus of AUX1 transition)
13	AUX2
14	AUX3
15	AUX4
16	AUX1S (source bus of AUX1 transition)
17	PinP1S (source bus of PinP1 transition)
18	PinP2S (source bus of PinP2 transition)

   Parameter 2:XPT

00	XPT1
～	
23	XPT24
99	No selection

   Parameter 3:Tally

0	Tally Off
1	Tally On

【Function】
 - HS410 returns XPT status of each bus.
   AUX Remote Pane can get status of HS410 using this command.

【Notes】
 None

No	Command	Function
	ATST	Reply of AUTO transition status

【No of Parameter】
    2

【Parameter】
 Parameter 1: Setting of the target

0	BKGD
1	KEY
2	-
3	-
4	-
5	-
6	-
7	AUX
8	PinP1Bus
9	PinP2Bus

    Parameter 2: Status

00	Stop off (BKGD/AUX doesn't have Pause function)
01	Pause (BKGD only)
02	Transition running (BKGD/AUX only)

【Function】
 - Response of AUTO transition status.

【Notes】
 HS410 sends ATST command to AUX Remote Panel on regular interval..
 (1) In case of PGM/A, PST/B selection (AUX Panel)
   - Parameter 1- 0: BKGD
   - Parameter 2-00 :Stop, 01:Pause, 02:Transition running
 (2) In case of AUX1,PinP1,PinP2 selection (AUX Panel)
   - Parameter 1- 7:AUX, 8:PinP1Bus, 9:PinP2Bus
   - Parameter 2-00 :Stop, 01:Pause, 02: Transition running

No	Command	Function
	SPAT	Setting or reply of transition pattern

【No of Parameter】
　　　2

【Parameter】
 Parameter 1: Target

0	-
1	-
2	AUX1
3	-
4	PinP1
5	PinP2

 Parameter 2: Pattern

Parameter 1: 2 (AUX1,PiP1,PinP2)	
000	CUT (AUX,PinP1,PinP2 Transition Off)
001	MIX (AUX,PinP1,PinP2 Transition On)

【Function】

【Notes】
 None

                                                                                    End