INNES

AVCmd

Application note

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1 Aim of document

The aim of this application note is to explain how to configure the player and how to use AVCmd Web IDL so that the player can communicate with a TV Set with serial or Ethernet connector with custom or “Innes standard” commands.

2 Minimal version

- Gekkota : 3.12.31* (or above)
- Screen Composer: 3.11.12

**DDC is not support for EEEBOX and LCAN players*

3 Introduction

3.1 AVCmd profiles

This AVCmd Web IDL permits to final user to implement different **AVCmd profiles:**

- Ethernet
- Serial
- DDC

The AVCmd profile permits to the player to control some of the functions of the TV set without

- Pressing any key of the TV set remote control and
- Pressing any button of the TV set

3.2 TV devices protocols

Each AVCmd profile supports several **TV devices protocols**:

- Standard (implemented by INNES following TV device user guide)
  - Samsung_m1
  - nec_m1
  - …
- Custom
  - Up to customer to implement it and install it in Gekkota

3.3 TV Commands

Each TV device protocol support several **TV commands:**

- Standard
  - Standby
  - Brightness
  - Video input
  - Mute
  - …
- Custom
  - Up to customer to implement it and install it in Gekkota

⚠ only one TV device protocol is active at a time

**Some RS232 TV commands are already embedded in Gekkota and can already support a large subset of TV devices (and requires no Web IDL implementation). The backward of these command implementation is that*

- *a new version build is required each time a new TV device protocol serial is required*
- *the custom TV device protocols are supported*
- *Ethernet TV device protocol is not supported*

For more information about these serial TV commands, refer Gekkota release notes Gekkota_os DMC200, Gekkota_os DMB300, Gekkota_RT on site INNES http://www.innes.pro/fr/support/

4 AVCmd profiles

The **AVCmd profile serial** is used for TV screen connected to the player with RS232 cable:

  - SUB-D9 to SUBD9
  - SUB-D9 to Jack 3.5
- Gekkota_os does not support USB to serial adapter driver*
  **except SMA300 (since V3.12.31).*
- In case your player has not serial connector DTE RS232, do prefer use Ethernet profile
- COM1 to COM4 are supported
- TV has to be configured in serial mode according to

The **AVCmd profiles Ethernet** is used for TV screen connected to the player with

- Ethernet cable
- TV has to be configured in Ethernet mode according to

The AVCmd profiles DDC is used for TV screen (or monitor) connected to the player

- With HDMI, VGA or DVI cable supporting DDC
  - The monitor has to support DDC/CI
  - The used HDMI, VGA or DVI video connector has to support DDC (pin DDC/SDA & DDC/SCL)

4.1 TV Commands

4.1.1 Standard TV commands

AVCmd is using standard TV API

- Standby
- Power mode
- Brightness
- Backlight
- Video input
- Mute
- Volume

Note: AVCmd "mute" and "volume" can control player audio sound when audio is transmitted from the player to the TV by

- *audio-video cable (HDMI) or*
- *audio cable (jack35)*

The list of standard TV command are implemented with this pattern

- `power-mode_OFF`
- `power-mode_ON`
- `power-mode_STANDBY`
- `mute_ON`
- `mute_OFF`
- `video-input_DVI1`
- `video-input_DTV1`
- `video-input_HDMI1`
- `video-input_HDMI2`
- `video-input_PC1`
- `brightness_0, brightness_1, ... , brightness_99, brightness_100`

- `backlight_0, backlight_1, ... , backlight_99, backlight_100`
- `volume_0, volume_1, ... , volume_0, volume_100`

*Refer to chapter Example of AVCmd script for Samsung device: “Samsung_m1”

4.1.2 Custom TV commands

AVCmd is using command:call API to call custom TV commands (Command:call can be used also to call standard TV commands).

A standard TV command becomes custom when the command name is different of the pattern described above

4.2 List of TV device protocols (supported by default)

These are the TV devices protocols supported by default in serial and in Ethernet.

Note: The AVCmd profiles serial and Ethernet are not activated by default. Indeed, some specific preferences need to be programmed in the player. Please refer to next chapter Configuration for more information.

4.2.1 RS232 (serial)

Most of legacy serial TV device protocol previously embedded in 3.12.24 are now supported with AVCmd IDL / Serial

- eiki_xb42
- nec_np3150
- philips_m2
- extron_m1
- nec_x461s
- samsung_m1
- hitachi_m1
- nudam_m2
- sanyo_m1
- optoma_m1
- sharp_m1
- lge_m1
- panasonic_m1
- sony_m1
- mitsubishi_xl6x00
- panasonic_m2
- toshiba_m1
- nec_m1
- philips_m1
- toshiba_tdpt420

Supported only with AVCmd IDL / Serial

- kramer_m1

An HTML test file is permitting to the final user to have an example of implementation of AVCmd IDL and use it directly on Gekkota (require a USB keyboard connected to the player).

The HTML can be downloaded from Innes support site.

(refer also to appendix to have a quick view of HTML test file)

4.2.2 Ethernet (TCP/IP)

These TV device protocols are supported in AVCmd / Ethernet

- nec_m1
- samsung_m1

Another test HTML test file is permitting to the final user to have an example of implementation of AVCmd IDL and use it directly on Gekkota (require a USB keyboard connected to the player).

The HTML test file can be downloaded from Innes support site.

(Please refer also to appendix to have a quick view of HTML test file)

4.2.3 DDC (over HDMI/DVI/VGA)

Supports DDC over HDMI, DVI and VGA connector

- DDC-EDID
- DDC-CI v1 / MCCS v2.2

Most of devices support DDC-CI but only few of them supports fully MCCS v2.2.

If your screen does not support MCCS, some AVCmd could not work properly.

Note: Most of screen does not support yet MCCS v3

4.3 Configuration

The AVCmd supports these profiles:

- "**Ethernet**" AVCmd
  - Player is connected to the IP network (for publishing)
  - TV set is connected to the IP network and configured to receive TCP/IP TV commands
  - Player is connected to the TV Set with AV cables
  - Daisy chain: head TV is connected to the player with Ethernet, other TV in serial (TVs belong to same manufacturer series)
- "**Serial**" AVCmd
  - Player is connected to the IP network (for publishing)
  - Player supporting RS232 DTE connector is connected to the TV set with serial cable
    - *Note in some case, RS232 input connector on TV set is a jack 3.5" format and requires a specific cable*
    - *Gekkota does not support adapter serial to USB except SMA300 – V3.12.31)*
  - Player SMA300 supporting serial to USB adaptor (vendor id "profilic" of "ftdi"), serial connector side is connected to the TV set with serial cable.
    - *See Gekkota application note "Driver USB to serial: supported devices vendor ID" for more information*
  - Player is connected to the TV Set with AV cables
  - Daisy chain: head TV is connected to the player with serial cable and other TV are also connected in serial IN/OUT (TV are belong to same manufacturer series)
- "**DDC**" AVCmd
  - Player is connected to the IP network (for publishing)
  - Player is connected to the TV Set (supporting DDC) with VGA/HDMI/DVI cables (supporting DDC)

4.3.1 Serial configuration

4.3.1.1 User preferences for AVCmd - Serial profile COM1

In order to use AVCmd IDL with serial profile, set the preferences with the values below:

```
innes.app-profile.av-cmd.uart_1.*.*.class-name = simple-protocol
innes.app-profile.av-cmd:simple-protocol.uart_1.*.*.authorized = true
innes.app-profile.av-cmd:simple-protocol.uart_1.*.*.protocol = samsung_m1

innes.app-profile.av-cmd:simple-protocol.uart_2.*.*.authorized = false
innes.app-profile.av-cmd:simple-protocol.uart_3.*.*.authorized = false
innes.app-profile.av-cmd:simple-protocol.uart_4.*.*.authorized = false
```

- "samsung_m1" is corresponding to one of the device protocols specific to some TV sets already available in Gekkota V3.12.26.

- Please double check in next chapter that your TV set is supported in the chosen AVCmd profile.

Note: it is possible to add a new custom protocol with USB injection of auto-configuration file properly configured.

Please refer to AVCmd Install custom TV device protocol for more information

- If already used before, unactivate the AVCmd Ethernet profile if it is not required

```
innes.app-profile.av-cmd:simple-protocol.network.*.*.authorized = false
```

User preferences for AVCmd - Serial profile COM2, COM3, COM4

Some TV screen with rack-able system embedding Gekkota_RT do reserve COM1 for internal bus. So most of the time the external RS232 has to be done through COM2.

For the same reason Gekkota RT embedded on Windows player can support several ports COM, especially if an adapter USB to RS232 is installed. In this case, do activate the uart_<i> according to where the RS232 is plugged and inactivate all others.

```
innes.app-profile.av-cmd.uart_2.*.*.class-name = simple-protocol
innes.app-profile.av-cmd:simple-protocol.uart_2.*.*.authorized = true
innes.app-profile.av-cmd:simple-protocol.uart_2.*.*.protocol = samsung_m1

innes.app-profile.av-cmd:simple-protocol.uart_1.*.*.authorized = false
innes.app-profile.av-cmd:simple-protocol.uart_3.*.*.authorized = false
innes.app-profile.av-cmd:simple-protocol.uart_4.*.*.authorized = false
```

4.3.1.2 TV device serial configuration

TV Set requires to be configured in serial mode according to:

For example

Samsung PE46C

- Menu Multi-Control
  - Connection MDC
    - Select "**RS232C MDC**"

Connect RS232 serial cable between TV Set and the RS232 DTE connector of the player

4.3.2 Ethernet configuration

4.3.2.1 User preferences for AVCmd - Ethernet profile

In order to use AVCmd IDL with Ethernet profile,

- Set the preferences with the value below:

```
innes.app-profile.av-cmd.network.*.*.class-name = simple-protocol
innes.app-profile.av-cmd:simple-protocol.network.*.*.authorized = true
innes.app-profile.av-cmd:simple-protocol.network.*.*.protocol = samsung_m1
innes.app-profile.av-cmd:simple-protocol.network.*.*.tcp.host = 192.168.1.10
innes.app-profile.av-cmd:simple-protocol.network.*.*.tcp.port =  1515
```

- "samsung_m1" is corresponding to one of the available device protocols available in Gekkota 3.12.26*.
- "192.168.1.10" is corresponding to the IP address of the TV Set in the local network

Note: it is possible to add a new custom protocol with USB injection of auto-configuration file properly configured.
Please refer to AVCmd Install custom TV device protocol for more information

*Please double check in next chapter that your TV set is supported in the chosen AVCmd profile.

- If already used before, inactivate the AVCmd serial profile if not required

```
innes.app-profile.av-cmd:simple-protocol.uart_1.*.*.authorized = false
```

4.3.2.2 TV device Ethernet configuration

TV Set requires to be configured in Ethernet mode according to:

For example

Samsung PE46C

- Menu Multi-Control
  - Connection MDC
    - Select "**RJ45 MDC**"
- Menu Multi-Control
  - Network settings:
    - IP configuration:
      - IP address:
        - Static: 192.168.52.10 (or DHCP : **192.168.1.10**)
      - Mask : 255.255.128.0
      - Gateway : 192.168.0.1

Connect the TV Set to the local network with an Ethernet cable

Note:

It is required to wait for a while before the TV is ready to communicate over Ethernet after these different use cases (this delay is depending on the device manufacturer)

- *TV device electric unplug*
- *Ethernet cable unplug*
- *IP socket reinit (for example when 2 players are using AVCmd to access the same TV device)*
- *After player first publishing*

4.3.3 DDC configuration

DDC is not activated by default. In order to use AVCmd IDL with DDC profile,

- Set the preferences of the used connector with the value 'true':

```
innes.app-profile.av-cmd.i2c_1.<connector>.authorized= true
```

.<connector>: can be

- *.*
- vga_1,
- hdmi_1,
- dvi_1

- For SMT210, set the preference below with the value 'true' (instead of previous one):

```
innes.app-profile.monitor-monitoring.gpu_1.lcd-module_1.authorized = true
```

5 AVCmd Install custom TV device protocol

It is possible to install a custom TV device protocol for

- Serial profile
- Ethernet profile

It is possible to build and install custom TV device protocol by

- Using auto-configuration file
- Using WebUI*
  (not yet implemented)

5.1 Building custom TV device using player WebUI (not yet implemented)

Not yet implemented

5.2 Building custom TV device using auto-configuration script

In order to install a new TV device protocol in your player

- Open the auto-configuration script V1.10.19 (or above) and follow the different step below
  - *Available in CDROM or on Innes support site (Gekkota application note auto-configuration)*

5.2.1 Build your own device protocol directly inside the auto-configuration file

- On the base of the tiny script below, write your own TV device protocol inside the template script. You can implement the different TV commands by picking up some existing TV commands names in JSON file (example in chapter Example of AVCmd script for Samsung device: "Samsung_m1") and porting the appropriate bytes sequence for each TV commands corresponding to your TV device (refer to your TV device user manual according to)
- The custom protocol are not provided by INNES
- Don't use an existing name of default device protocol for your custom device protocol else the installation will failed
- In case Gekkota upgrade the device TV procotol custom name are kept and priority in case name conflict.
- Attention: the Javascript object is case sensitive; These are the good practises to port the JSON file into auto-configuration file:
  - Copy paste the JSON content (respect the parity of {} and [])
  - Add a header and choose a appropriate name for device TV and custom protocol name
    `let TVDeviceName="toshiba_custom";`
    `let TVDeviceProtocol=`
  - Change "name" and "description"
  - Add the ; character at the end of file
  - Implement the byte sequence according to your TV device in all the TV commands (the number of byte in the sequence can be different depending on manufacturer and TV commands types)
  - Do use the Javascript character " (do not use the MS Windows one " !!!)
  - In case installation error, you should be able to read error status in device-status (if it is well configured in WebUI)

```
let TVDeviceName="toshiba_custom";
let TVDeviceProtocol=
{
    "name":"toshiba_custom_info",
    "description":"Commands (on,off) for display TOSHIBA type AV/RV625D",
       "commands":
       [
              {
                     "name":"power-mode_ON",
```

```
                        "command":[
                                "0x77","0x30","0x34","0x20","0x00","0x20","0x01","0x0D"
                        ]
                },
                {
                        "name":"power-mode_OFF",
                        "command":[
                                "0x77","0x30","0x34","0x20","0x00","0x20","0x00","0x0D"
                        ]
                }
        ]
}
;
```

```
let TVDeviceName2="samsung_m1_custom";
let TVDeviceProtocol2=
{
   "name":"samsung_m1_custom_info",
   "description":"Commands (on,off,mute)",
   "commands":
   [
      {
         "name":"power-mode_OFF",
         "command":["0xAA","0xF9","0xFE","0x1","0x1","0xF9"]
      },
      {
         "name":"power-mode_ON",
         "command":["0xAA","0xF9","0xFE","0x1","0x0","0xF8"]
      },
      {
         "name":"power-mode_STANDBY",
         "command":["0xAA","0x4A","0xFE","0x1","0x1","0x4A"]
      },
      {
         "name":"mute_ON",
         "command":["0xAA","0x13","0xFE","0x1","0x1","0x13"]
      },
      {
         "name":"mute_OFF",
         "command":["0xAA","0x13","0xFE","0x1","0x0","0x12"]
      }
   ]
}
;
```

With 0xFE = Samsung broadcast id

5.2.1.1 Configure auto-configuration file to install your script for serial profile

In order to install your script in serial profile, in auto-configuration script, activate the line

- `let avCmdSerial = AvCmdGetProfile("uart_1");`
- `AvCmdInstallProtocol(avCmdSerial,TVDeviceName,TVDeviceProtocol);`
- `AvCmdActivateProfile(avCmdSerial);`

Note: several TV device custom protocol can be installed in Gekkota but only one can be active. Even if all your TV device custom protocol are installed, you have to install your TV device custom protocol again before to activate it.

```
// ------------------------------------------------------------------------------
// ---- AVCmd: init installation for custom TV device protocol for serial profile
// ------------------------------------------------------------------------------
// ---- Get the "av-cmd" from the uart_1 profile : uncomment the line after
// ---- Double check which player COM number (COM1 on uart1, COM2 on uart2... ) is used to control by
serial cable the TV set and set the uart_n according to
let avCmdSerial = AvCmdGetProfile("uart_1");
//let avCmdSerial = AvCmdGetProfile("uart_2");
//let avCmdSerial = AvCmdGetProfile("uart_3");

// ------------------------------------------------------------------------------
// ---- AVCmd: activate and install a custom TV device protocol for serial profile
// ------------------------------------------------------------------------------
// ---- Install a protocol for the serial profile: uncomment the line after
AvCmdInstallProtocol(avCmdSerial,TVDeviceName,TVDeviceProtocol);
// ---- Activate the serial profile : uncomment the line after
```

```
AvCmdActivateProfile(avCmdSerial);

// ------------------------------------------------------------------------------
// ---- AVCmd: inactivate and uninstall a custom TV device protocol for serial profile
// ------------------------------------------------------------------------------
// ---- Inactivate the serial profile : uncomment the line after
//AvCmdDesactivateProfile(avCmdSerial);
// ---- Uninstall custom device protocol for the serial profile: uncomment the line after
//AvCmdDesinstallProtocol(avCmdSerial,TVDeviceName);
```

Save the file and put it in a empty USB key with the according naming format of your needs

- universal file name:
    - 000000000000.js

See Gekkota application note auto-configuration for more information

5.2.1.2 Configure auto-configuration file to install your script for Ethernet profile

In order to install your script in serial profile, in auto-configuration script, activate the lines

- `let avCmdTCPIP = AvCmdGetProfile("network");`
- `AvCmdInstallProtocol(avCmdTCPIP,TVDeviceName,TVDeviceProtocol);`
- `AvCmdActivateProfile(avCmdTCPIP);`

Note: several TV device custom protocol can be installed in Gekkota but only one can be active. Even if all your TV device custom protocol are installed, you have to install your TV device custom protocol again before to activate it.

```
/ ------------------------------------------------------------------------------
// ---- AVCmd: init installation for custom TV device protocol for Ethernet profile
// ------------------------------------------------------------------------------
// ---- Get the "av-cmd" from Ethernet profile: uncomment the line after
let avCmdTCPIP = AvCmdGetProfile("network");

// ------------------------------------------------------------------------------
// ---- AVCmd: activate and install a custom TV device protocol for Ethernet profile
// ------------------------------------------------------------------------------
// ---- Install a device protocol for the Ethernet profile : uncomment the line after
AvCmdInstallProtocol(avCmdTCPIP,TVDeviceName,TVDeviceProtocol);
// ---- Activate the TCP/IP profile : uncomment the line after
AvCmdActivateProfile(avCmdTCPIP);


// ------------------------------------------------------------------------------
// ---- AVCmd: inactivate and uninstall a custom TV device protocol for Ethernet profile
// ------------------------------------------------------------------------------
// ---- Inactivate the Ethernet : uncomment the line after
//AvCmdDesactivateProfile(avCmdTCPIP);
// ---- Uninstall custom device protocol for the Ethernet profile : uncomment the line after
//AvCmdDesinstallProtocol(avCmdTCPIP,TVDeviceName);
```

Save the file and put it in an empty USB stick with the according naming format of your needs

- universal file name:
    - 000000000000.js

See Gekkota application note auto-configuration for more information

5.2.2 Inject USB stick containing the auto-configuration script

Once USB stick injected, follow the indication on the TV screen connected to the player.

In case error is raised after script installation, it is probably due to a Javascript error inserted in the script. Please double check the implementation of your script by following the good practises

Internal Innes for support:
once installed, the script is installed with the those supported by defaut in Gekkota

- `/usr/playzilla/profile/res/system/av-cmd/serial`
- `/usr/playzilla/profile/res/system/av-cmd/tcp`

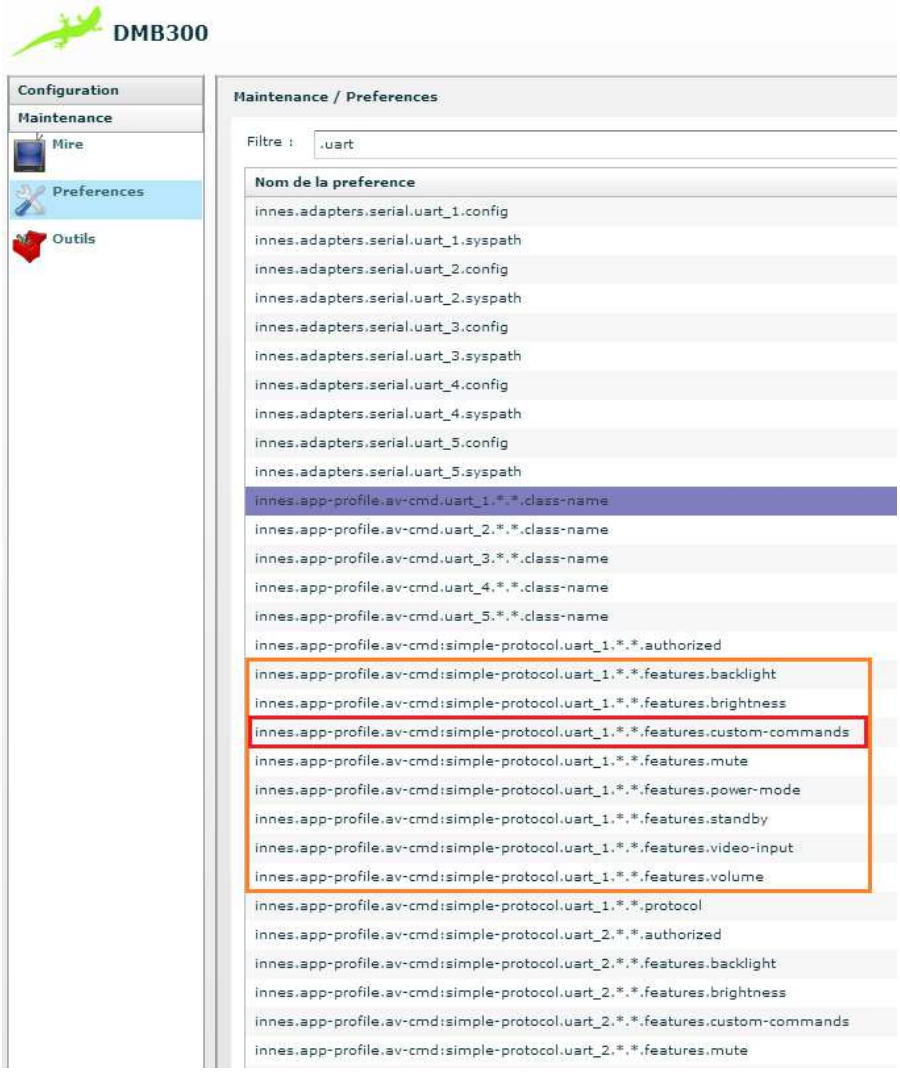
These path are available by installing a debug patch. Please contact support@innes.pro for more information

6 AVCmd inactivate standard (or custom) TV commands

When a profile serial or Ethernet is activated, by default all the TV commands types are activated (value is true).

It is possible to manually inactivate (or reactivate) the TV commands types:

- Features.backlight
- Features.brightness
- Features.mute
- Features.power-mode
- Features.standby
- Features.video-input
- Features.volume
- Features.custom-commands



6.1 Custom TV commands

Custom TV commands can be implemented only in custom device protocol.

A TV command becomes custom when its name is different of TV commands names listed in chapter:

Example of AVCmd script for Samsung device: “Samsung_m1”

Note: Standard device protocol does not embed custom TV commands.

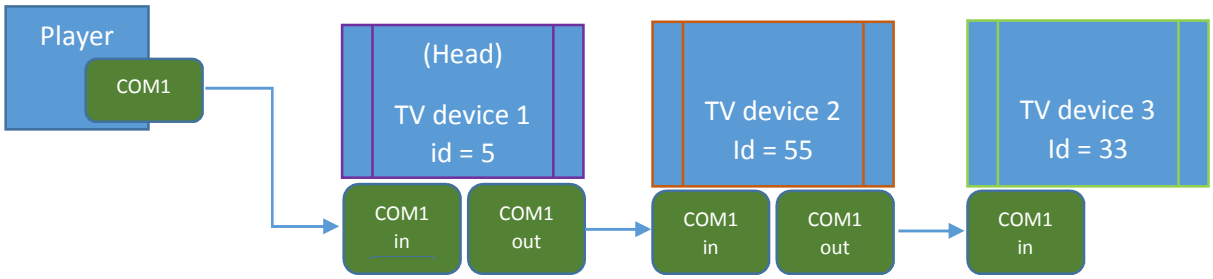
7 Daisy chain

Daisy chain is a chain of TV devices connected each other with RS232 cable and with the same manufacturer serie.

- The head TV device can be addressed as well by serial or Ethernet
- Each TV device can have a broadcast_id different:
  - Ex:
    - TV device 1: Samsung
      - Broadcast Id = 5
    - TV device 2: Samsung
      - Broadcast Id = 55
    - TV device 3 Samsung
      - Broadcast Id = 33
- Two mode permitting to send RS232 TV commands to TV device:
  - Mode broadcast
    - Meaning the TV command is applied by all the TV connected each other by RS232
  - Mode with TV device broadcast id
    - Meaning the TV command is applied only to TV
      - connected each other by RS232
      - having some specific id

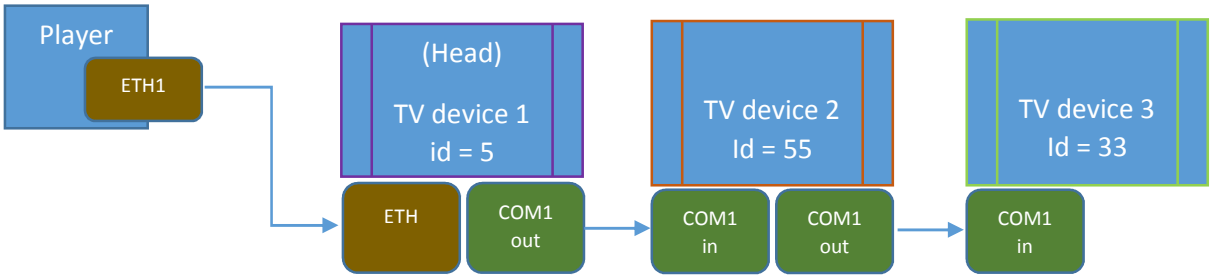
7.1 Head TV device: connected to the player in serial

Ex: TV device are Samsung manufacturer



7.2 Head TV device: connected to the player in Ethernet

Ex: TV device are NEC manufacturer



7.3 Broadcast id (Not implemented)

The broadcast id can be configured in the TV device (same menu as TV device Ethernet or serial configuration)

When the TV command is using manufacturer broadcast id, the TV command is propagated through all the TV device but only the TV device with the proper broadcast id apply the TV command.

Note: TV devices of the daisy chain are same manufacturer series

7.4 Broadcast

When the TV command is using manufacturer broadcast byte value (ex 0xFE for Samsung), the TV command is propagated through all the TV device (of same manufacturer) connected with RS232 cable, and all the TV apply the TV command.

Note: TV devices of the daisy chain are same manufacturer series

8 AVCmd internal serial protocols for specific TV device (Gekkota_RT embedded on TV screen with rack-able module)

In Gekkota 3.12.26 (and above), the AVCmd is supporting some additional specific TV device protocol for TV screen equipped with rack-able system in which the serial communication is done between rack-able PC system and TV screen. Indeed given that a propriety protocol is used on this bus, the player has to send a specific binary frame to completely standby the TV Screen. These are the different typical connection:

- Through the OPS interface
  - Ex: NEC V 423 compatible OPS or
- Through the HDMI cable (MagicInfo video input)
  - Ex:
    - Samsung 480MX-3, rack-able system (not compatible with OPS interface)
      - To activate MagicInfo, switch off the TV and switch on then press MagicInfo on remote control
      - HDMI cable compatible
        - HDMI cable “standard”: AWV E258864 STYLE 20276
        - Note: for this use case, do not use “HDMI cable supporting Ethernet” !!
- Through an external serial link

There is not AVCmd Web IDL for TV device internal protocol and there is no possibility to implement custom internal protocol.

For information:

1. *The rack-able PC systems are not always compatible with OPS interface (ex: Samsung PE46C)*
2. *Some recent TV screen compatible OPS can support standard AVCmd serial profile (ex: Samsung serie ME)*

8.1 TV Commands

The supported TV commands are those used in INNES products to control the TV screen

- **TV screen standby**
- **TV screen wake up**

- Compatibility
  - Screen Composer G3
  - PlugnCast G2/G3

8.2 List of TV device internal serial protocols

- “**samsung internal**”
  - for Samsung series MDC2 and MDC3

- “**nec-internal**”
  - for NEC V 423 series for example

Note:

- *The TV screen standby/wake up through AVCmd replaces the legacy protocol implemented in previous version "display-output" automatically with the appropriate AVCmd serial profile Samsung or NEC. That means that customer using Gekkota_RT 3.12.24 (or previous version) should install 3.12.26 without regression on TV standby/TV wake up.*
- *The preference installation is done while the migration from version 3.12.25 (or lower) to 3.12.26 (or upper). Before migration, switch OFF then switch ON TV Screen (it could be needed in some case to restore player factory settings before migrations)*
- *Pre-requisite: while the migration, some the serial internal communication between rack-able system and TV screen has to work properly. For example for Samsung 480MX-3 the TV screen video input has to be "MagicInfo". If not, the user preference will not be installed properly.*
- *In case regression (meaning that TV standby and TV wake up does not work properly because migration has failed), install manually by connecting to the WebUI:*
    - *Samsung 480MX-3*

```
innes.app-profile.av-cmd.uart_1.*.*.class-name = samsung-internal
innes.app-profile.av-cmd:samsung-internal.uart_1.*.*.authorized = true
innes.app-profile.display-output.*.*.*.features.standby = false
```

    - *NEC V 423*

```
innes.app-profile.av-cmd.uart_1.*.*.class-name = nec-internal
innes.app-profile.av-cmd:nec-internal.uart_1.*.*.authorized = true
innes.app-profile.display-output.*.*.*.features.standby = false
```

8.3 Configuration of TV device internal protocol

8.3.1 Samsung series with rack-able module

8.3.1.1 User preferences automatic activation

The AVCmd specific serial profile is automatically activated when Gekkota RT 3.12.26 (or above) is installed.

In case issue with complete Samsung TV standby/wake-up (meaning that the migration has failed for any unexpected reason), set the user preferences below.

```
innes.app-profile.av-cmd.uart_1.*.*.class-name = samsung-internal
innes.app-profile.av-cmd:samsung-internal.uart_1.*.*.authorized = true
innes.app-profile.display-output.*.*.*.features.standby = false

innes.app-profile.av-cmd:Samsung-internal.uart_1.*.*.features.power-mode = true
innes.app-profile.av-cmd:Samsung-internal.uart_1.*.*.features.standby = true
```

These preferences can be inactivated to inactivate the specific functions linked to

- **Power mode**

```
innes.app-profile.av-cmd:samsung-internal.uart_1.*.*.features.power-mode = false
```

- **Standby mode**

```
innes.app-profile.av-cmd:samsung-internal.uart_1.*.*.features.standby = false
```

8.3.2 NEC series with rack-able module

8.3.2.1 User preferences automatic activation

The AVCmd internal serial protocol automatically activated once fwhen Gekkota RT 3.12.26 (or above) is installed.

In case issue with complete TV NEC standby/wake-up (meaning that the migration has failed for any unexpected reason), set the user preferences below.

```
innes.app-profile.av-cmd.uart_1.*.*.class-name = nec-internal
innes.app-profile.av-cmd:nec-internal.uart_1.*.*.authorized = true
innes.app-profile.display-output.*.*.*.features.standby = false

innes.app-profile.av-cmd:nec-internal.uart_1.*.*.features.power-mode = true
innes.app-profile.av-cmd:nec-internal.uart_1.*.*.features.standby = true
```

These preferences can be inactivated to inactivate the specific functions linked to

- **Power mode**

```
innes.app-profile.av-cmd:nec-internal.uart_1.*.*.features.power-mode = false
```

- **Standby mode**

```
innes.app-profile.av-cmd:nec-internal.uart_1.*.*.features.standby = false
```

9 AVCmd Sound output

9.1 TV Commands

- Mute ON / Mute_OFF
- volume (de 0 à 100)

An HTML test file “sound_output.html” is permitting to test the API

See appendix for more information

Note: in case mute is activated in WebUI, Sound output unmute or control the volume is not effective. To solve the issue, unmute the sound first in player WebUI.

10 Appendix

10.1 AVCmd standard device protocol

10.1.1 device reference versus TV device protocol name

10.1.1.1 Standard TV devices protocols over serial

These are the standard TV devices protocols of serial profile

10.1.1.1.1 Supported by default

- NEC (type: NP3150): `nec_np3150`
- TOSHIBA (type: TDP-T420 series): `toshiba_tdpt420`
- EIKI (type: XB42): `eiki_xb42`
- MITSUBISHI (type: XL6600U/XL6500U/XL6600LU/XL6500LU): `mitsubishi_xl6x00`
- LGE (type 19LU40/50, 22LU40/50, 26LU50, 19/22/26/32/37/42LH20, 32/37/42/47LH30/40/50/70, 32/37/42LF25, 32/37/42/47LH49, 32/37/42LG21, 50/60PS70/80, 19/22/26/32LD3xxx, 32/37/42/47LD4xxx, 32/42/46/52/60LD5xxx, 19/22/26LE3xxx, 32/37/42/47/55LE5xxx): `lge_m1`
- TOSHIBA (ref type AV/RV625D): `toshiba_m1`
- HITACHI (type CP-X10000/CP-WX11000/CP-SX12000): `hitachi_m1`
- SANYO (ref PLC-WXU700): `sanyo_m1`
- SAMSUNG SyncMaster (type 400CXn-2, 460CXn-2, 400DXn-2, 460DXn-2, 700DXn-2, 820DXn-2, 400UXn-2, 460UXn-2):`samsung_m1`
- PHILIPS (supporting PHILIPS DICP protocol): `philips_m1`
- SONY BRAVIA: `sony_m1`
- SHARP (type: LC-40LE924E, LC-40LE924RU, LC-40LE824E, LC-40LE824RU, LC-40LU824E, LC-40LU824RU, LC-46LE824E, LC-46LE824RU, LC-46LU824E, LC-46LU824RU, LC-40LE814E, LC-40LE814RU, LC-46LE814E, LC-46LE814RU, LC-40LX814E, LC-46LX814E): `sharp_m1`
- PANASONIC (type TH50PH11E): `panasonic_m1`
- NEC (type V321, V461, LCD4215(R)): `nec_m1`
- Optoma (type: EW762): `optoma_m1`
- PANASONIC (type PT-EX16KE): `panasonic_m2`
- PHILIPS (supporting PHILIPS DICP protocol with id=1): `philips_m2`
- EXTRON: `extron_m1`
- NEC_X461: `nec_x461`
- KRAMER: `kramer_m1`
- on/off and select digital output for nudam module (type 6050/6052/6053/6054/6056/6058/6060/6063 whose module address is 0x2): `nudam_m2`

10.1.1.1.2 Not supported by default

- protocol 2000: switch in1 to out3, in2 to out3, in3 to out3 and in3 to out2: `proto2000`

10.1.1.2 Standard TV devices protocols over Ethernet

These are the standard TV devices protocols of Ethernet profile

1. nec_m1
2. samsung_m1

10.1.1.2.1 Supported by default

- NEC (type V321, V461, LCD4215(R)): `nec_m1`

- SAMSUNG SyncMaster (type 400CXn-2, 460CXn-2, 400DXn-2, 460DXn-2, 700DXn-2, 820DXn-2, 400UXn-2, 460UXn-2):`samsung_m1`

10.1.1.2.2 Not supported by default

- NEC (type: NP3150): `nec_np3150`
- TOSHIBA (type: TDP-T420 series): `toshiba_tdpt420`
- EIKI (type: XB42): `eiki_xb42`
- MITSUBISHI (type: XL6600U/XL6500U/XL6600LU/XL6500LU): `mitsubishi_xl6x00`
- LGE (type 19LU40/50, 22LU40/50, 26LU50, 19/22/26/32/37/42LH20, 32/37/42/47LH30/40/50/70, 32/37/42LF25, 32/37/42/47LH49, 32/37/42LG21, 50/60PS70/80, 19/22/26/32LD3xxx, 32/37/42/47LD4xxx, 32/42/46/52/60LD5xxx, 19/22/26LE3xxx, 32/37/42/47/55LE5xxx): `lge_m1`
- TOSHIBA (ref type AV/RV625D): `toshiba_m1`
- HITACHI (type CP-X10000/CP-WX11000/CP-SX12000): `hitachi_m1`
- SANYO (ref PLC-WXU700): `sanyo_m1`
- PHILIPS (supporting PHILIPS DICP protocol): `philips_m1`
- SONY BRAVIA: `sony_m1`
- SHARP (type: LC-40LE924E, LC-40LE924RU, LC-40LE824E, LC-40LE824RU, LC-40LU824E, LC-40LU824RU, LC-46LE824E, LC-46LE824RU, LC-46LU824E, LC-46LU824RU, LC-40LE814E, LC-40LE814RU, LC-46LE814E, LC-46LE814RU, LC-40LX814E, LC-46LX814E): `sharp_m1`
- PANASONIC (type TH50PH11E): `panasonic_m1`
- Optoma (type: EW762): `optoma_m1`
- PANASONIC (type PT-EX16KE): `panasonic_m2`
- PHILIPS (supporting PHILIPS DICP protocol with id=1): `philips_m2`
- EXTRON: `extron_m1`
- NEC_X461: `nec_x461`
- KRAMER: `kramer_m1`
- on/off and select digital output for nudam module (type 6050/6052/6053/6054/6056/6058/6060/6063 whose module address is 0x2): `nudam_m2`
- protocol 2000: switch in1 to out3, in2 to out3, in3 to out3 and in3 to out2: `proto2000`

10.1.1.3 Standard TV device protocol over DDC

10.1.1.3.1 Supported by default

There is no specific protocol embedded in Gekkota for DDC profile.

10.2 TV device protocols file system installation (Gekkota 3.12.26)

10.2.1 Serial

The TV device protocols are installed in

```
/usr/bin/Playzilla/res/system/av-cmd/serial
```

Available by installing a patch (Gekkota 3.12.26)

10.2.2 Ethernet

```
/usr/bin/Playzilla/res/system/av-cmd/tcp
```

Available by installing a patch (Gekkota 3.12.26)

Note: these TV device protocol Ethernet JSON files have exactly the same form and content as those situated in serial directory

10.2.3 Example of TV device protocol

Note: a TV device protocol Ethernet has exactly the same form and content as a TV device protocol serial

10.2.3.1 Samsung device: “Samsung_m1”

```
{
   “name":"samsung_m1",
   "description":"Commands (on,off,dvi,dtv,pc,hdmi) for SAMSUNG SyncMaster 400CXn-2, 460CXn-2, 400DXn-2, 460DXn-2,
700DXn-2, 820DXn-2, 400UXn-2, 460UXn-2",
   "commands":
   [
      {
         "name":"power-mode_OFF",
         "command":["0xAA","0xF9","0xFE","0x1","0x1","0xF9"]
      },
      {
         "name":"power-mode_ON",
         "command":["0xAA","0xF9","0xFE","0x1","0x0","0xF8"]
      },
      {
         "name":"power-mode_STANDBY",
         "command":["0xAA","0x4A","0xFE","0x1","0x1","0x4A"]
      },
      {
         "name":"mute_ON",
         "command":["0xAA","0x13","0xFE","0x1","0x1","0x13"]
      },
      {
         "name":"mute_OFF",
         "command":["0xAA","0x13","0xFE","0x1","0x0","0x12"]
      },
      {
         "name":"video-input_DVI1",
         "command":["0xAA","0x14","0xFE","0x1","0x18","0x2B"]
      },
      {
         "name":"video-input_DTV1",
         "command":["0xAA","0x14","0xFE","0x1","0x40","0x53"]
      },
      {
         "name":"video-input_HDMI1",
         "command":["0xAA","0x14","0xFE","0x1","0x21","0x34"]
      },
      {
         "name":"video-input_HDMI2",
         "command":["0xAA","0x14","0xFE","0x1","0x20","0x33"]
      },
      {
         "name":"video-input_PC1",
         "command":["0xAA","0x14","0xFE","0x1","0x14","0x27"]
      },
      {
         "name":"brightness_0",
         "command":["0xAA","0x25","0xFE","0x1","0x0","0x24"]
      },
      {
         "name":"brightness_1",
         "command":["0xAA","0x25","0xFE","0x1","0x1","0x25"]
      },
      {
         "name":"brightness_2",
         "command":["0xAA","0x25","0xFE","0x1","0x2","0x26"]
      },
      {
         "name":"brightness_3",
         "command":["0xAA","0x25","0xFE","0x1","0x3","0x27"]
      },
      {
         "name":"brightness_4",
         "command":["0xAA","0x25","0xFE","0x1","0x4","0x28"]
      },
      {
         "name":"brightness_5",
         "command":["0xAA","0x25","0xFE","0x1","0x5","0x29"]
      },
      {
         "name":"brightness_6",
         "command":["0xAA","0x25","0xFE","0x1","0x6","0x2A"]
      },
      {
         "name":"brightness_7",
         "command":["0xAA","0x25","0xFE","0x1","0x7","0x2B"]
      },
      {
         "name":"brightness_8",
         "command":["0xAA","0x25","0xFE","0x1","0x8","0x2C"]
      },
      {
         "name":"brightness_9",
         "command":["0xAA","0x25","0xFE","0x1","0x9","0x2D"]
      },
      {
         "name":"brightness_10",
         "command":["0xAA","0x25","0xFE","0x1","0xA","0x2E"]
      },
      {
         "name":"brightness_11",
         "command":["0xAA","0x25","0xFE","0x1","0xB","0x2F"]
```

```
    },
    {
       "name":"brightness_12",
       "command":["0xAA","0x25","0xFE","0x1","0xC","0x30"]
    },
    {
       "name":"brightness_13",
       "command":["0xAA","0x25","0xFE","0x1","0xD","0x31"]
    },
    {
       "name":"brightness_14",
       "command":["0xAA","0x25","0xFE","0x1","0xE","0x32"]
    },
    {
       "name":"brightness_15",
       "command":["0xAA","0x25","0xFE","0x1","0xF","0x33"]
    },
    {
       "name":"brightness_16",
       "command":["0xAA","0x25","0xFE","0x1","0x10","0x34"]
    },
    {
       "name":"brightness_17",
       "command":["0xAA","0x25","0xFE","0x1","0x11","0x35"]
    },
    {
       "name":"brightness_18",
       "command":["0xAA","0x25","0xFE","0x1","0x12","0x36"]
    },
    {
       "name":"brightness_19",
       "command":["0xAA","0x25","0xFE","0x1","0x13","0x37"]
    },
    {
       "name":"brightness_20",
       "command":["0xAA","0x25","0xFE","0x1","0x14","0x38"]
    },
    {
       "name":"brightness_21",
       "command":["0xAA","0x25","0xFE","0x1","0x15","0x39"]
    },
    {
       "name":"brightness_22",
       "command":["0xAA","0x25","0xFE","0x1","0x16","0x3A"]
    },
    {
       "name":"brightness_23",
       "command":["0xAA","0x25","0xFE","0x1","0x17","0x3B"]
    },
    {
       "name":"brightness_24",
       "command":["0xAA","0x25","0xFE","0x1","0x18","0x3C"]
    },
    {
       "name":"brightness_25",
       "command":["0xAA","0x25","0xFE","0x1","0x19","0x3D"]
    },
    {
       "name":"brightness_26",
       "command":["0xAA","0x25","0xFE","0x1","0x1A","0x3E"]
    },
    {
       "name":"brightness_27",
       "command":["0xAA","0x25","0xFE","0x1","0x1B","0x3F"]
    },
    {
       "name":"brightness_28",
       "command":["0xAA","0x25","0xFE","0x1","0x1C","0x40"]
    },
    {
       "name":"brightness_29",
       "command":["0xAA","0x25","0xFE","0x1","0x1D","0x41"]
    },
    {
       "name":"brightness_30",
       "command":["0xAA","0x25","0xFE","0x1","0x1E","0x42"]
    },
    {
       "name":"brightness_31",
       "command":["0xAA","0x25","0xFE","0x1","0x1F","0x43"]
    },
    {
       "name":"brightness_32",
       "command":["0xAA","0x25","0xFE","0x1","0x20","0x44"]
    },
    {
       "name":"brightness_33",
       "command":["0xAA","0x25","0xFE","0x1","0x21","0x45"]
    },
    {
       "name":"brightness_34",
       "command":["0xAA","0x25","0xFE","0x1","0x22","0x46"]
    },
    {
       "name":"brightness_35",
```

```
        "command":["0xAA","0x25","0xFE","0x1","0x23","0x47"]
    },
    {
        "name":"brightness_36",
        "command":["0xAA","0x25","0xFE","0x1","0x24","0x48"]
    },
    {
        "name":"brightness_37",
        "command":["0xAA","0x25","0xFE","0x1","0x25","0x49"]
    },
    {
        "name":"brightness_38",
        "command":["0xAA","0x25","0xFE","0x1","0x26","0x4A"]
    },
    {
        "name":"brightness_39",
        "command":["0xAA","0x25","0xFE","0x1","0x27","0x4B"]
    },
    {
        "name":"brightness_40",
        "command":["0xAA","0x25","0xFE","0x1","0x28","0x4C"]
    },
    {
        "name":"brightness_41",
        "command":["0xAA","0x25","0xFE","0x1","0x29","0x4D"]
    },
    {
        "name":"brightness_42",
        "command":["0xAA","0x25","0xFE","0x1","0x2A","0x4E"]
    },
    {
        "name":"brightness_43",
        "command":["0xAA","0x25","0xFE","0x1","0x2B","0x4F"]
    },
    {
        "name":"brightness_44",
        "command":["0xAA","0x25","0xFE","0x1","0x2C","0x50"]
    },
    {
        "name":"brightness_45",
        "command":["0xAA","0x25","0xFE","0x1","0x2D","0x51"]
    },
    {
        "name":"brightness_46",
        "command":["0xAA","0x25","0xFE","0x1","0x2E","0x52"]
    },
    {
        "name":"brightness_47",
        "command":["0xAA","0x25","0xFE","0x1","0x2F","0x53"]
    },
    {
        "name":"brightness_48",
        "command":["0xAA","0x25","0xFE","0x1","0x30","0x54"]
    },
    {
        "name":"brightness_49",
        "command":["0xAA","0x25","0xFE","0x1","0x31","0x55"]
    },
    {
        "name":"brightness_50",
        "command":["0xAA","0x25","0xFE","0x1","0x32","0x56"]
    },
    {
        "name":"brightness_51",
        "command":["0xAA","0x25","0xFE","0x1","0x33","0x57"]
    },
    {
        "name":"brightness_52",
        "command":["0xAA","0x25","0xFE","0x1","0x34","0x58"]
    },
    {
        "name":"brightness_53",
        "command":["0xAA","0x25","0xFE","0x1","0x35","0x59"]
    },
    {
        "name":"brightness_54",
        "command":["0xAA","0x25","0xFE","0x1","0x36","0x5A"]
    },
    {
        "name":"brightness_55",
        "command":["0xAA","0x25","0xFE","0x1","0x37","0x5B"]
    },
    {
        "name":"brightness_56",
        "command":["0xAA","0x25","0xFE","0x1","0x38","0x5C"]
    },
    {
        "name":"brightness_57",
        "command":["0xAA","0x25","0xFE","0x1","0x39","0x5D"]
    },
    {
        "name":"brightness_58",
        "command":["0xAA","0x25","0xFE","0x1","0x3A","0x5E"]
    },
    {
```

```
        "name":"brightness_59",
        "command":["0xAA","0x25","0xFE","0x1","0x3B","0x5F"]
    },
    {
        "name":"brightness_60",
        "command":["0xAA","0x25","0xFE","0x1","0x3C","0x60"]
    },
    {
        "name":"brightness_61",
        "command":["0xAA","0x25","0xFE","0x1","0x3D","0x61"]
    },
    {
        "name":"brightness_62",
        "command":["0xAA","0x25","0xFE","0x1","0x3E","0x62"]
    },
    {
        "name":"brightness_63",
        "command":["0xAA","0x25","0xFE","0x1","0x3F","0x63"]
    },
    {
        "name":"brightness_64",
        "command":["0xAA","0x25","0xFE","0x1","0x40","0x64"]
    },
    {
        "name":"brightness_65",
        "command":["0xAA","0x25","0xFE","0x1","0x41","0x65"]
    },
    {
        "name":"brightness_66",
        "command":["0xAA","0x25","0xFE","0x1","0x42","0x66"]
    },
    {
        "name":"brightness_67",
        "command":["0xAA","0x25","0xFE","0x1","0x43","0x67"]
    },
    {
        "name":"brightness_68",
        "command":["0xAA","0x25","0xFE","0x1","0x44","0x68"]
    },
    {
        "name":"brightness_69",
        "command":["0xAA","0x25","0xFE","0x1","0x45","0x69"]
    },
    {
        "name":"brightness_70",
        "command":["0xAA","0x25","0xFE","0x1","0x46","0x6A"]
    },
    {
        "name":"brightness_71",
        "command":["0xAA","0x25","0xFE","0x1","0x47","0x6B"]
    },
    {
        "name":"brightness_72",
        "command":["0xAA","0x25","0xFE","0x1","0x48","0x6C"]
    },
    {
        "name":"brightness_73",
        "command":["0xAA","0x25","0xFE","0x1","0x49","0x6D"]
    },
    {
        "name":"brightness_74",
        "command":["0xAA","0x25","0xFE","0x1","0x4A","0x6E"]
    },
    {
        "name":"brightness_75",
        "command":["0xAA","0x25","0xFE","0x1","0x4B","0x6F"]
    },
    {
        "name":"brightness_76",
        "command":["0xAA","0x25","0xFE","0x1","0x4C","0x70"]
    },
    {
        "name":"brightness_77",
        "command":["0xAA","0x25","0xFE","0x1","0x4D","0x71"]
    },
    {
        "name":"brightness_78",
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        {
            "name":"volume_41",
            "command":["0xAA","0x12","0xFE","0x1","0x29","0x3A"]
        },
        {
            "name":"volume_42",
            "command":["0xAA","0x12","0xFE","0x1","0x2A","0x3B"]
        },
        {
            "name":"volume_43",
            "command":["0xAA","0x12","0xFE","0x1","0x2B","0x3C"]
        },
        {
            "name":"volume_44",
            "command":["0xAA","0x12","0xFE","0x1","0x2C","0x3D"]
        },
        {
            "name":"volume_45",
            "command":["0xAA","0x12","0xFE","0x1","0x2D","0x3E"]
        },
        {
            "name":"volume_46",
            "command":["0xAA","0x12","0xFE","0x1","0x2E","0x3F"]
        },
        {
```

```
        "name":"volume_47",
        "command":["0xAA","0x12","0xFE","0x1","0x2F","0x40"]
    },
    {
        "name":"volume_48",
        "command":["0xAA","0x12","0xFE","0x1","0x30","0x41"]
    },
    {
        "name":"volume_49",
        "command":["0xAA","0x12","0xFE","0x1","0x31","0x42"]
    },
    {
        "name":"volume_50",
        "command":["0xAA","0x12","0xFE","0x1","0x32","0x43"]
    },
    {
        "name":"volume_51",
        "command":["0xAA","0x12","0xFE","0x1","0x33","0x44"]
    },
    {
        "name":"volume_52",
        "command":["0xAA","0x12","0xFE","0x1","0x34","0x45"]
    },
    {
        "name":"volume_53",
        "command":["0xAA","0x12","0xFE","0x1","0x35","0x46"]
    },
    {
        "name":"volume_54",
        "command":["0xAA","0x12","0xFE","0x1","0x36","0x47"]
    },
    {
        "name":"volume_55",
        "command":["0xAA","0x12","0xFE","0x1","0x37","0x48"]
    },
    {
        "name":"volume_56",
        "command":["0xAA","0x12","0xFE","0x1","0x38","0x49"]
    },
    {
        "name":"volume_57",
        "command":["0xAA","0x12","0xFE","0x1","0x39","0x4A"]
    },
    {
        "name":"volume_58",
        "command":["0xAA","0x12","0xFE","0x1","0x3A","0x4B"]
    },
    {
        "name":"volume_59",
        "command":["0xAA","0x12","0xFE","0x1","0x3B","0x4C"]
    },
    {
        "name":"volume_60",
        "command":["0xAA","0x12","0xFE","0x1","0x3C","0x4D"]
    },
    {
        "name":"volume_61",
        "command":["0xAA","0x12","0xFE","0x1","0x3D","0x4E"]
    },
    {
        "name":"volume_62",
        "command":["0xAA","0x12","0xFE","0x1","0x3E","0x4F"]
    },
    {
        "name":"volume_63",
        "command":["0xAA","0x12","0xFE","0x1","0x3F","0x50"]
    },
    {
        "name":"volume_64",
        "command":["0xAA","0x12","0xFE","0x1","0x40","0x51"]
    },
    {
        "name":"volume_65",
        "command":["0xAA","0x12","0xFE","0x1","0x41","0x52"]
    },
    {
        "name":"volume_66",
        "command":["0xAA","0x12","0xFE","0x1","0x42","0x53"]
    },
    {
        "name":"volume_67",
        "command":["0xAA","0x12","0xFE","0x1","0x43","0x54"]
    },
    {
        "name":"volume_68",
        "command":["0xAA","0x12","0xFE","0x1","0x44","0x55"]
    },
    {
        "name":"volume_69",
        "command":["0xAA","0x12","0xFE","0x1","0x45","0x56"]
    },
    {
        "name":"volume_70",
        "command":["0xAA","0x12","0xFE","0x1","0x46","0x57"]
    },
```

```
    {
        "name":"volume_71",
        "command":["0xAA","0x12","0xFE","0x1","0x47","0x58"]
    },
    {
        "name":"volume_72",
        "command":["0xAA","0x12","0xFE","0x1","0x48","0x59"]
    },
    {
        "name":"volume_73",
        "command":["0xAA","0x12","0xFE","0x1","0x49","0x5A"]
    },
    {
        "name":"volume_74",
        "command":["0xAA","0x12","0xFE","0x1","0x4A","0x5B"]
    },
    {
        "name":"volume_75",
        "command":["0xAA","0x12","0xFE","0x1","0x4B","0x5C"]
    },
    {
        "name":"volume_76",
        "command":["0xAA","0x12","0xFE","0x1","0x4C","0x5D"]
    },
    {
        "name":"volume_77",
        "command":["0xAA","0x12","0xFE","0x1","0x4D","0x5E"]
    },
    {
        "name":"volume_78",
        "command":["0xAA","0x12","0xFE","0x1","0x4E","0x5F"]
    },
    {
        "name":"volume_79",
        "command":["0xAA","0x12","0xFE","0x1","0x4F","0x60"]
    },
    {
        "name":"volume_80",
        "command":["0xAA","0x12","0xFE","0x1","0x50","0x61"]
    },
    {
        "name":"volume_81",
        "command":["0xAA","0x12","0xFE","0x1","0x51","0x62"]
    },
    {
        "name":"volume_82",
        "command":["0xAA","0x12","0xFE","0x1","0x52","0x63"]
    },
    {
        "name":"volume_83",
        "command":["0xAA","0x12","0xFE","0x1","0x53","0x64"]
    },
    {
        "name":"volume_84",
        "command":["0xAA","0x12","0xFE","0x1","0x54","0x65"]
    },
    {
        "name":"volume_85",
        "command":["0xAA","0x12","0xFE","0x1","0x55","0x66"]
    },
    {
        "name":"volume_86",
        "command":["0xAA","0x12","0xFE","0x1","0x56","0x67"]
    },
    {
        "name":"volume_87",
        "command":["0xAA","0x12","0xFE","0x1","0x57","0x68"]
    },
    {
        "name":"volume_88",
        "command":["0xAA","0x12","0xFE","0x1","0x58","0x69"]
    },
    {
        "name":"volume_89",
        "command":["0xAA","0x12","0xFE","0x1","0x59","0x6A"]
    },
    {
        "name":"volume_90",
        "command":["0xAA","0x12","0xFE","0x1","0x5A","0x6B"]
    },
    {
        "name":"volume_91",
        "command":["0xAA","0x12","0xFE","0x1","0x5B","0x6C"]
    },
    {
        "name":"volume_92",
        "command":["0xAA","0x12","0xFE","0x1","0x5C","0x6D"]
    },
    {
        "name":"volume_93",
        "command":["0xAA","0x12","0xFE","0x1","0x5D","0x6E"]
    },
    {
        "name":"volume_94",
        "command":["0xAA","0x12","0xFE","0x1","0x5E","0x6F"]
```

```
      },
      {
         "name":"volume_95",
         "command":["0xAA","0x12","0xFE","0x1","0x5F","0x70"]
      },
      {
         "name":"volume_96",
         "command":["0xAA","0x12","0xFE","0x1","0x60","0x71"]
      },
      {
         "name":"volume_97",
         "command":["0xAA","0x12","0xFE","0x1","0x61","0x72"]
      },
      {
         "name":"volume_98",
         "command":["0xAA","0x12","0xFE","0x1","0x62","0x73"]
      },
      {
         "name":"volume_99",
         "command":["0xAA","0x12","0xFE","0x1","0x63","0x74"]
      },
      {
         "name":"volume_100",
         "command":["0xAA","0x12","0xFE","0x1","0x64","0x75"]
      }
   ]
}
```

10.3 HTML Test file

HTML test file proposed required to have keyboard connected to enter the value in the text box

The interactive mode needs to be activated in player user preference:

```
innes.hid.keyboard-event.*.authorized = true
```

10.3.1 HTML test file - AVCmd serial COM1

Same as HTML test file Ethernet except “uart_1” instead “network”

```
                                /* NETWORK */
                                 /* if (avCmd.adapter.device.id != "network")
                                        continue;*/
                                 /* SERIAL (in case using adapter 1 USB connector to 2 serial, increase
id of uart depending on connector used(ex for adapter PROFILIC or FTDI - 1 USB connector to 2 serial) */
                                if (avCmd.adapter.device.id.indexOf("uart_1") == -1)
                                    continue;
```

10.3.2 HTML test file - AVCmd serial COM2

Same as HTML test file Ethernet except “uart_2” instead “network”

```
                                /* NETWORK */
                                 /* if (avCmd.adapter.device.id != "network")
                                        continue;*/
                                 /* SERIAL (in case using adapter 1 USB connector to 2 serial, increase
id of uart depending on connector used(ex for adapter PROFILIC or FTDI - 1 USB connector to 2 serial) */
                                if (avCmd.adapter.device.id.indexOf("uart_2") == -1)
                                    continue;
```

10.3.3 HTML test file - AVCmd Ethernet

```
<html>
<head>
<meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
<script type="text/xml">
<?xpacket begin="" id="W5M0MpCehiHzreSzNTczkc9d"?>
<x:xmpmeta xmlns:x="adobe:ns:meta/" x:xmptk="Adobe XMP Core 4.4.0-1">
        <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
                <rdf:Description rdf:about=""
                                xmlns:is="ns.innes.metadata"
                        is:userDuration="00:00:10"
                        is:userDurationPolicy="alwaystakecare"/>
        </rdf:RDF>
</x:xmpmeta>
<?xpacket end="r"?>
</script></head><html xmlns="http://www.w3.org/1999/xhtml"
       xmlns:html="http://www.w3.org/1999/xhtml">
<head>
  <style>
    * { background-color: white }
  </style>
```

```
  <title>NEC</title>
  <script type="text/javascript;version=1.8" language="JavaScript">
//<![CDATA[
const Ci = Components.interfaces;
var gLogger;
var gAVCmd;
dump("log4Service = " + log4Service + "\n");
gLogger = log4Service.getLogger("avcmd.test");
dump ("gLogger = " + gLogger + "\n");
LOG("TEST");
function ERROR(string)
{
  gLogger.error (string, null);
  //  dump("*** ERROR MIRE *** " + string + "\n");
}
function LOG(string)
{
  gLogger.debug (string, null);
  appendConsole(string + "\n");
   // dump("*** LOG MIRE *** " + string + "\n");
}
function init()
{
        LOG("init");
        try {

                var avCmdArray =
                        systemManager.getApplicationProfileBindingsByProfileUri("av-cmd");
                if (avCmdArray && avCmdArray.length)
                {
                        netscape.security.PrivilegeManager.enablePrivilege("UniversalXPConnect");
                        LOG("avCmdArray.length = " + avCmdArray.length);
                        for(let i = 0; i < avCmdArray.length; ++i)
                        {
                                let avCmd;
                                try {
                                        avCmd = avCmdArray.queryElementAt(i,
                   Ci.nsISystemAPBAVCmd);
                                } catch (ex) {continue;};
                                if (avCmd.adapter.device.id != "network")
                                    continue;
                                gAVCmd = avCmd;
                           let ids = ["1","2"];
                            //avCmd.setIds(ids, ids.length);
                                showAVCmd(avCmd);
                                let appList = new Object();
                                let userList = new Object();
                                avCmd.getProtocols(appList, userList);
                                let list = appList.value;
                                let str = "";
                                while (list.hasMore())
                                {
                                        str +=list.getNext();
                                        if (list.hasMore())
                                                str += ",";
                                }
                                LOG("Application protocol list = " + str);
                                list = userList.value;
                                str = "";
                                while (list.hasMore())
                                {
                                        str +=list.getNext();
                                        if (list.hasMore())
                                                str += ",";
                                }
                                LOG("User protocol list = " + str);
                                let name = "nec_m1";
                                protocol = avCmd.getProtocol(name);
                LOG("Get protocol name = " + name + " protocol = " + dumpObj(protocol));
                                try {
                                        avCmd.setProtocol(name, protocol);
                                }
                                catch (ex)
                                {
                   LOG("setProtocol OK");
                                }
                                name = "test2";
                                avCmd.setProtocol(name, protocol);
                                protocol = avCmd.getProtocol(name);
                //LOG("Get protocol name = " + name + " protocol = " + dumpObj(protocol));
                                avCmd.setProtocol("test2.1", protocol);
                                avCmd.setProtocol("test2.1", protocol);
                        }
                }
        }
        catch (ex)
        {
                LOG("Exception : " + ex);
        }
}
function sleep(milliseconds)
{
        netscape.security.PrivilegeManager.enablePrivilege("UniversalXPConnect");
  // We basically just call this once after the specified number of milliseconds
        //LOG("sleep " + milliseconds + " milliseconds");
```

```
        var timeup = false;
        function wait() { timeup = true; }
        window.setTimeout(wait, milliseconds);

        var thread = Components.classes["@mozilla.org/thread-manager;1"].
        getService().currentThread;
        while(!timeup) {
                thread.processNextEvent(true);
        }
        //LOG("sleep end");
}
function standby(elem)
{
        let idx = elem.selectedIndex;
        let val = elem.options[idx].value;
        if (val == "none")
                return;
        LOG("standby = " + val);
    try {
                if (val == "true")
                        gAVCmd.standby = true;
                else
                        gAVCmd.standby = false;
    }
        catch (ex)
        {
                ERROR("in standby");
        }
}
function powermode(elem)
{
        let idx = elem.selectedIndex;
        let val = elem.options[idx].value;
        if (val == "none")
                return;
        LOG("powermode = " + val);
    try {
                if (val == "OFF")
                        gAVCmd.powerMode = Ci.nsISystemAPBAVCmd.POWER_MODE_OFF;
                else if (val == "STANDBY")
                        gAVCmd.powerMode = Ci.nsISystemAPBAVCmd.POWER_MODE_STANDBY;
                else if (val == "ON")
                        gAVCmd.powerMode = Ci.nsISystemAPBAVCmd.POWER_MODE_ON;
    }
        catch (ex)
        {
                ERROR("in powerMode");
        }
}
function brightness(elem)
{
        let idx = elem.selectedIndex;
        let val = elem.options[idx].value;
        if (val == "none")
                return;
        LOG("brightness = " + val);
    try {
                gAVCmd.brightness = parseInt(val);
    }
        catch (ex)
        {
                ERROR("in brightness");
        }
}
function backlight(elem)
{
        let idx = elem.selectedIndex;
        let val = elem.options[idx].value;
        if (val == "none")
                return;
        LOG("backlight = " + val);
    try {
                gAVCmd.backlight = parseInt(val);
    }
        catch (ex)
        {
                ERROR("in backlight");
        }
}
function videoInput(elem)
{
        let idx = elem.selectedIndex;
        let val = elem.options[idx].value;
        if (val == "none")
                return;
        LOG("videoInput = " + val);
    try {
                if (val == "HDMI1")
                {
                        gAVCmd.videoInput = Ci.nsISystemAPBAVCmd.VIDEO_INPUT_HDMI1;
                }
                else if (val == "HDMI2")
                {
                        gAVCmd.videoInput = Ci.nsISystemAPBAVCmd.VIDEO_INPUT_HDMI2;
                }
```

```
                else if (val == "VGA1")
                {
                        gAVCmd.videoInput = Ci.nsISystemAPBAVCmd.VIDEO_INPUT_VGA1;
                }
                else if (val == "DVI1")
                {
                        gAVCmd.videoInput = Ci.nsISystemAPBAVCmd.VIDEO_INPUT_DVI1;
                }
                else if (val == "VIDEO1")
                {
                        gAVCmd.videoInput = Ci.nsISystemAPBAVCmd.VIDEO_INPUT_VIDEO1;
                }
                else if (val == "PC1")
                {
                        gAVCmd.videoInput = Ci.nsISystemAPBAVCmd.VIDEO_INPUT_PC1;
                }
    }
         catch (ex)
         {
                 ERROR("in videoInput");
         }
}
function mute(elem)
{
         let idx = elem.selectedIndex;
         let val = elem.options[idx].value;
         if (val == "none")
                 return;
         LOG("mute = " + val);
    try {
                 if (val == "true")
                         gAVCmd.mute = true;
                 else
                         gAVCmd.mute = false;
    }
         catch (ex)
         {
                 ERROR("in mute");
         }
}
function volume(elem)
{
         let idx = elem.selectedIndex;
         let val = elem.options[idx].value;
         if (val == "none")
                 return;
         LOG("volume = " + val);
    try {
                 gAVCmd.volume = parseInt(val);
    }
         catch (ex)
         {
                 ERROR("in volume");
         }
}
function command(elem)
{
         let val = elem.value;
    LOG("sending \"" + val + "\"");
    try {
                 gAVCmd.call(val, null);
    }
         catch (ex)
         {
                 ERROR("in volume");
         }
}
function showAVCmd(avCmd)
{
         LOG("showAVCmd avCmd = " + avCmd);
    let bag = avCmd.QueryInterface(Ci.nsIPropertyBag2);
         LOG("showAVCmd bag = " + bag);
         let prop = bag.get("schema-preference");
         LOG("showAVCmd prop  = " + prop);
         var enumerator = avCmd.enumerator;
         while (enumerator.hasMoreElements())
         {

        LOG("showAVCmd");
         let prop = enumerator.getNext();
                 let p = prop.QueryInterface(Ci.nsIProperty);
                 LOG("prop name = '" + p.name + "' value = " + p.value);
                 LOG("prop name = '" + p.name + "' value = " + dumpObj(p.value));
         }
}
function makeIndent(level)
{
         if (level == undefined)
                 level = 1;
         var indent = "";
         for (i = 0; i <level; i++)
         {
                 indent += "  ";
         }
         return indent;
```

```
}
function dumpObj(obj, str, level)
{
        if (str ==undefined)
                str ="";
        if (level == undefined)
                level = 1;
        var indent = makeIndent(level);
        try {
                if (typeof(obj) != "object")
                {
                        if (typeof(obj) == "string")
                                return str += "\"" + obj + "\"";
                        else
                                return (str += "" + obj);
                }
                if (Array.isArray(obj))
                {
                        str += "[";
                        for (let i = 0; i < obj.length; i++)
                        {
                                str = dumpObj(obj[i], str, level);
                                if (i != obj.length-1)
                                        str += ",";
                        }
                        str += "]";
                        return str;
                }
                let bag = null;
                try
                {
                        bag = obj.QueryInterface(Ci.nsIPropertyBag2);
                }
                catch (ex)
                {}
                if (bag)
                {
                        str += "\n" + indent + "{\n";
                        var enumerator = bag.enumerator;
                        indent = makeIndent(++level);
                        str += indent;
                        while (enumerator.hasMoreElements())
                        {
                                let prop = enumerator.getNext();
                                let p = prop.QueryInterface(Ci.nsIProperty);
                                str +=  "\"" + p.name + "\":";
                                str = dumpObj(p.value, str, level);
               if (enumerator.hasMoreElements())
                                {
                                        str += ",";
                                        str += "\n";
                                        str += indent;
                                }
                        }
                        indent = makeIndent(--level);
                        str += "\n" + indent;
                        str += "}";
                        return str;
                }
            let v = obj.QueryInterface(Ci.nsIVariant);
                if (v)
                {
                        str += JSON.stringify(v);
           return str;
                }

    }
catch (ex)
        {
                LOG("Exception : " + ex);
        }
}

function changeIds()
{
   try {
    let value = document.getElementById("ids").value;
let reg = /([^, ]+)+/g;
let tab= value.match(reg);
LOG("changeIds " + tab + "tab.length = " + tab.length); LOG(tab);
     gAVCmd.setIds(tab, tab.length);
          LOG("changeIds after setIds");
   }
catch (ex)
        {
                LOG("Exception : " + ex);
        }
}
function appendConsole(str)
{
     var console=document.getElementById("console")
     if (console)
         console.value =console.value + str;
}
```

```
//]]>
 </script>
<body onload="setTimeout('init()', '10')"">
   <table border="0">
  <tr>
       <th>Identificateurs</th>
<td><input id="ids" type="text" value="*">
       </td>
       <td><input id="changeIds" type="button" value="Change"
   onclick="changeIds()"></td>
    </tr>
    <tr>
       <th>Standby</th>
<td><select id="standby" onchange="standby(document.getElementById('standby'))" >
         <option value="none">-</option>
         <option value="true">true</option>
         <option value="false">false</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>PowerMode</th>
<td><select id="powermode" onchange="powermode(document.getElementById('powermode'))" >
         <option value="none">-</option>
         <option value="OFF">OFF</option>
         <option value="ON">ON</option>
         <option value="STANDBY">STANDBY</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>Brightness</th>
       <td><select id="brightness" onchange="brightness(document.getElementById('brightness'))" >
         <option value="none">-</option>
         <option value="10">10</option>
         <option value="30" >30</option>
         <option value="50" >50</option>
         <option value="70" >70</option>
         <option value="100" >100</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>Backlight</th>
<td><select id="backlight" onchange="backlight(document.getElementById('backlight'))" >
         <option value="none">-</option>
         <option value="10">10</option>
         <option value="30" >30</option>
         <option value="50" >50</option>
         <option value="70" >70</option>
         <option value="100" >100</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>VideoInput</th>
<td><select id="videoInput" onchange="videoInput(document.getElementById('videoInput'))" >
         <option value="none">-</option>
         <option value="HDMI1">HDMI1</option>
         <option value="HDMI2">HDMI2</option>
         <option value="VGA1" >VGA1</option>
         <option value="DVI1" >DVI1</option>
         <option value="VIDEO1" >VIDEO1</option>
         <option value="PC1" >PC1</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>Mute</th>
<td><select id="mute" onchange="mute(document.getElementById('mute'))" >
         <option value="none">-</option>
         <option value="true">true</option>
         <option value="false">false</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>Volume</th>
<td><select id="volume" onchange="volume(document.getElementById('volume'))" >
         <option value="none">-</option>
         <option value="10">10</option>
         <option value="30" >30</option>
         <option value="50" >50</option>
         <option value="70" >70</option>
         <option value="100" >100</option>
         </select>
       </td>
    </tr>
    <tr>
       <th>Commande</th>
<td><input id="command" type="text" >
       </td>
       <td><input id="send" type="button" value="Send"
   onclick="command(document.getElementById('command'))"></td>
    </tr>
```

```
    <tr>

   </table>
   <table border="0">
   <tr>
     <td><textarea id="console" cols="80" rows="30"> </textarea></td>
   </tr>
   </table>
</body>
</html>
```