# A/V Receiver Control Commands List

**Request AUDIO information Parameter by ASCII code**

```
?AST<CR>
AST(data1)(data2)......(data53)(data54)(data55)<CR+LF>
   ex:DOLBY DIGITAL 3/2/.1 in PRO LOGIC2 MOVIE playing, SP setting 7.1ch(SBch*2),
      AST0502111110001000000000001111110110000000001161111300<CR+LF>
```

data1-data2:Audio Input Signal

| Data | Parameter | Signal |
|------|-----------|--------|
| (data1)(data2) | 00 | ANALOG |
| | 01 | ANALOG |
| | 02 | ANALOG |
| | 03 | PCM |
| | 04 | PCM |
| | 05 | DOLBY DIGITAL |
| | 06 | DTS |
| | 07 | DTS-ES Matrix |
| | 08 | DTS-ES Discrete |
| | 09 | DTS 96/24 |
| | 10 | DTS 96/24 ES Matrix |
| | 11 | DTS 96/24 ES Discrete |
| | 12 | MPEG-2 AAC |
| | 13 | WMA9 Pro |
| | 14 | DSD (HDMI or File via DSP route) |
| | 15 | HDMI THROUGH |
| | 16 | DOLBY DIGITAL PLUS |
| | 17 | DOLBY TrueHD |
| | 18 | DTS EXPRESS |
| | 19 | DTS-HD Master Audio |
| | 20 | DTS-HD High Resolution |
| | 21 | DTS-HD High Resolution |
| | 22 | DTS-HD High Resolution |
| | 23 | DTS-HD High Resolution |
| | 24 | DTS-HD High Resolution |
| | 25 | DTS-HD High Resolution |
| | 26 | DTS-HD High Resolution |
| | 27 | DTS-HD Master Audio |
| | 28 | DSD (HDMI or File via DSD DIRECT route) |
| | 29 | Dolby Atmos |
| | 30 | Dolby Atmos over Dolby Digital Plus |
| | 31 | Dolby Atmos over Dolby TrueHD |
| | 64 | MP3 |
| | 65 | WAV |
| | 66 | WMA |
| | 67 | MPEG4-AAC |
| | 68 | FLAC |
| | 69 | ALAC(Apple Lossless) |
| | 70 | AIFF |
| | 71 | DSD (USB-DAC) |
| | 72 | Spotify |

data3-data4:Audio Input Frequency

| Data | Parameter | Frequency |
|------|-----------|-----------|
| (data3)(data4) | 00 | 32kHz |
| | 01 | 44.1kHz |
| | 02 | 48kHz |
| | 03 | 88.2kHz |
| | 04 | 96kHz |
| | 05 | 176.4kHz |
| | 06 | 192kHz |
| | 07 | --- |
| | 32 | 2.8MHz |
| | 33 | 5.6MHz |

data5-data25:Audio Input Channel Format

| Data | Parameter | Channel Format info |
|------|-----------|---------------------|
| (data5) | 0 or 1 | L      : L |
| (data6) | 0 or 1 | C      : C |
| (data7) | 0 or 1 | R      : R |
| (data8) | 0 or 1 | SL     : Ls |
| (data9) | 0 or 1 | SR     : Rs |
| (data10) | 0 or 1 | SBL    : Lsr,Lrs,Lb |
| (data11) | 0 or 1 | S      : Cs,ES,EX,LtRt |
| (data12) | 0 or 1 | SBR    : Rsr,Rrs,Rb |
| (data13) | 0 or 1 | LFE    : LFE |
| (data14) | 0 or 1 | FHL    : Lh,Lvh |
| (data15) | 0 or 1 | FHR    : Rh,Rvh |
| (data16) | 0 or 1 | FWL    : Lw |
| (data17) | 0 or 1 | FWR    : Rw |
| (data18) | 0 or 1 | XL     : Lhs,Lhr,Lss,Lc,Lsd, |
| (data19) | 0 or 1 | XC     : Ts,Oh,Ch,Chr,LFE2,Cvh |
| (data20) | 0 or 1 | XR     : Rhs,Rhr,Rss,Rc,Rsd, |
| (data21) | 0 or 1 | (Reserved For Future, 0 fixed.) |
| (data22) | 0 or 1 | (Reserved For Future, 0 fixed.) |
| (data23) | 0 or 1 | (Reserved For Future, 0 fixed.) |
| (data24) | 0 or 1 | (Reserved For Future, 0 fixed.) |
| (data25) | 0 or 1 | (Reserved For Future, 0 fixed.) |

data26-data43:Audio Output Channel

| Data | Parameter | Output Channel |
|------|-----------|----------------|
| (data26) | 0 or 1 | L |
| (data27) | 0 or 1 | C |
| (data28) | 0 or 1 | R |
| (data29) | 0 or 1 | SL |
| (data30) | 0 or 1 | SR |
| (data31) | 0 or 1 | SBL |
| (data32) | 0 or 1 | SB |
| (data33) | 0 or 1 | SBR |
| (data34) | 0 or 1 | SW |
| (data35) | 0 or 1 | FHL |
| (data36) | 0 or 1 | FHR |
| (data37) | 0 or 1 | FWL |
| (data38) | 0 or 1 | FWR |
| (data39) | 0 or 1 | TML or TFL |
| (data40) | 0 or 1 | TMR or TFR |
| (data41) | 0 or 1 | TRL |
| (data42) | 0 or 1 | TRR |
| (data43) | 0 or 1 | SW2 |

data44-data45:Audio Output Frequency

| Data | Parameter | Frequency |
|---|---|---|
| (data44,45) | 00 | 32kHz |
| | 01 | 44.1kHz |
| | 02 | 48kHz |
| | 03 | 88.2kHz |
| | 04 | 96kHz |
| | 05 | 176.4kHz |
| | 06 | 192kHz |
| | 07 | --- |
| | 32 | 2.8MHz |
| | 33 | 5.6MHz |

data46-data47:Audio Output bit

| Data | Parameter | bit |
|---|---|---|
| (data46,47) | 00 | --- |
| | 01 | 1bit |
| | 02 | 2bit |
| | ... | |
| | 16 | 16bit |
| | ... | |
| | 24 | 24bit |
| | ... | |
| | 32 | 32bit |

data48-data51:Reserved

data52:Working PQLS

| Data | Parameter | Working PQLS |
|---|---|---|
| (data52) | 0 | PQLS OFF |
| | 1 | PQLS 2ch |
| | 2 | PQLS Multi ch |
| | 3 | PQLS Bitstream |

data53-data54:Working Auto Phase Control Plus

| Data | Parameter | Working PQLS |
|---|---|---|
| (data53,54) | 00 | 0ms |
| | 01 | 1ms |
| | ... | |
| | 16 | 16ms |
| | 99 | Unmeasurable |

data55:Working Auto Phase Control Plus (Reverse Phase)

| Data | Parameter | Working PQLS |
|---|---|---|
| (data55) | 0 | No reverse phase |
| | 1 | reverse phase |
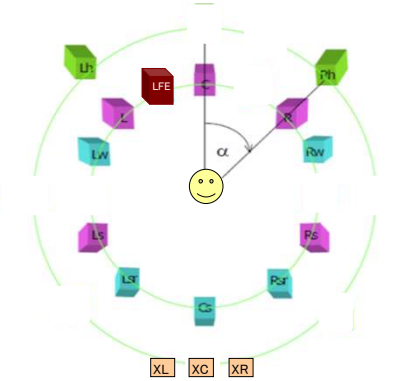


**Request VIDEO information Parameter by ASCII code**

?VST<CR>
VST(data1)(data2)......(data40)(data41)<CR+LF>

data1:Input Terminal

| Data | Parameter | Signal from below |
|---|---|---|
| (data1) | 0 | --- |
| | 1 | VIDEO |
| | 2 | S-VIDEO |
| | 3 | COMPONENT |
| | 4 | HDMI |
| | 5 | Self OSD/JPEG |

data2-3:Input Resolution

| Data | Parameter | Signal Format |
|---|---|---|
| (data2)(data3) | 00 | --- |
| | 01 | 480/60i |
| | 02 | 576/50i |
| | 03 | 480/60p |
| | 04 | 576/50p |
| | 05 | 720/60p |
| | 06 | 720/50p |
| | 07 | 1080/60i |
| | 08 | 1080/50i |
| | 09 | 1080/60p |
| | 10 | 1080/50p |
| | 11 | 1080/24p |
| | 12 | 4Kx2K/24Hz |
| | 13 | 4Kx2K/25Hz |
| | 14 | 4Kx2K/30Hz |
| | 15 | 4Kx2K/24Hz(SMPTE) |
| | 16 | 4Kx2K/50Hz |
| | 17 | 4Kx2K/60Hz |

data4:Input aspect

| Data | Parameter | Signal Format |
|---|---|---|
| (data4) | 0 | --- |
| | 1 | 4:3 |
| | 2 | 16:9 |
| | 3 | 14:9 |

data5:Input color format(HDMI only)

| Data | Parameter | Signal Format |
|---|---|---|
| (data5) | 0 | --- |
| | 1 | RGB Limit |
| | 2 | RGB Full |
| | 3 | YcbCr444 |
| | 4 | YcbCr422 |
| | 5 | YcbCr420 |

data6:Input bit(HDMI only)

| Data | Parameter | Signal Format |
|---|---|---|
| (data7) | 0 | --- |
| | 1 | 24bit (8bit*3) |
| | 2 | 30bit (10bit*3) |
| | 3 | 36bit (12bit*3) |
| | 4 | 48bit (16bit*3) |

data7:Input extend color space(HDMI only)

| Data | Parameter | Signal Format |
|---|---|---|
| (data7) | 0 | --- |
| | 1 | Standard |
| | 2 | xvYCC601 |
| | 3 | xvYCC709 |
| | 4 | sYCC |
| | 5 | AdobeYCC601 |
| | 6 | AdobeRGB |

data8-9:Output Resolution

| Data | Parameter | Signal Format |
|---|---|---|
| (data8)(data9) | 00 | --- |
| | 01 | 480/60i |
| | 02 | 576/50i |
| | 03 | 480/60p |
| | 04 | 576/50p |
| | 05 | 720/60p |
| | 06 | 720/50p |
| | 07 | 1080/60i |
| | 08 | 1080/50i |
| | 09 | 1080/60p |
| | 10 | 1080/50p |
| | 11 | 1080/24p |
| | 12 | 4Kx2K/24Hz |
| | 13 | 4Kx2K/25Hz |
| | 14 | 4Kx2K/30Hz |
| | 15 | 4Kx2K/24Hz(SMPTE) |
| | 16 | 4Kx2K/50Hz |
| | 17 | 4Kx2K/60Hz |

data10:Output aspect

| Data | Parameter | Signal Format |
|---|---|---|
| (data10) | 0 | --- |
| | 1 | 4:3 |
| | 2 | 16:9 |
| | 3 | 14:9 |

data11:Output color format(HDMI only)

| Data | Parameter | Signal Format |
|---|---|---|
| (data11) | 0 | --- |
| | 1 | RGB Limit |
| | 2 | RGB Full |
| | 3 | YcbCr444 |
| | 4 | YcbCr422 |
| | 5 | YcbCr420 |

data12:Output bit(HDMI only)

| Data | Parameter | Signal Format |
|---|---|---|
| (data12) | 0 | --- |
| | 1 | 24bit (8bit*3) |
| | 2 | 30bit (10bit*3) |
| | 3 | 36bit (12bit*3) |
| | 4 | 48bit (16bit*3) |

data13:Output extend color space(HDMI only)

| Data | Parameter | Signal Format |
|---|---|---|
| (data13) | 0 | --- |
| | 1 | Standard |
| | 2 | xvYCC601 |
| | 3 | xvYCC709 |
| | 4 | sYCC |
| | 5 | AdobeYCC601 |
| | 6 | AdobeRGB |

data14-15:HDMI 1 Monitor Recommend Resolution Information

| Data | Parameter | Recommend Signal Format |
|---|---|---|
| (data14)(data15) | 00 | --- |
| | 01 | 480/60i |
| | 02 | 576/50i |
| | 03 | 480/60p |
| | 04 | 576/50p |
| | 05 | 720/60p |
| | 06 | 720/50p |
| | 07 | 1080/60i |
| | 08 | 1080/50i |
| | 09 | 1080/60p |
| | 10 | 1080/50p |
| | 11 | 1080/24p |
| | 12 | 4Kx2K/24Hz |
| | 13 | 4Kx2K/25Hz |
| | 14 | 4Kx2K/30Hz |
| | 15 | 4Kx2K/24Hz(SMPTE) |
| | 16 | 4Kx2K/50Hz |
| | 17 | 4Kx2K/60Hz |

data16:HDMI 1 Monitor DeepColor

| Data | Parameter | Signal Format |
|---|---|---|
| (data16) | 0 | --- |
| | 1 | 24bit (8bit*3) |
| | 2 | 30bit (10bit*3) |
| | 3 | 36bit (12bit*3) |
| | 4 | 48bit (16bit*3) |

data17-21:HDMI 1 Monitor Extend Color Space

| Data | Parameter | Correspondence Format |
|---|---|---|
| (data17) | 0 or 1 | xvYCC601 |
| (data18) | 0 or 1 | xvYCC709 |
| (data19) | 0 or 1 | sYCC |
| (data20) | 0 or 1 | AdobeYCC601 |
| (data21) | 0 or 1 | AdobeRGB |

data22-23:HDMI 2 Monitor Recommend Resolution Information

| Data | Parameter | Signal Format |
|------|-----------|---------------|
| (data22)(data23) | 00 | --- |
| | 01 | 480/60i |
| | 02 | 576/50i |
| | 03 | 480/60p |
| | 04 | 576/50p |
| | 05 | 720/60p |
| | 06 | 720/50p |
| | 07 | 1080/60i |
| | 08 | 1080/50i |
| | 09 | 1080/60p |
| | 10 | 1080/50p |
| | 11 | 1080/24p |
| | 12 | 4Kx2K/24Hz |
| | 13 | 4Kx2K/25Hz |
| | 14 | 4Kx2K/30Hz |
| | 15 | 4Kx2K/24Hz(SMPTE) |
| | 16 | 4Kx2K/50Hz |
| | 17 | 4Kx2K/60Hz |

data24:HDMI 2 Monitor DeepColor

| Data | Parameter | Signal Format |
|------|-----------|---------------|
| (data24) | 0 | --- |
| | 1 | 24bit (8bit*3) |
| | 2 | 30bit (10bit*3) |
| | 3 | 36bit (12bit*3) |
| | 4 | 48bit (16bit*3) |

data25-29:HDMI 2 Monitor Extend Color Space

| Data | Parameter | Correspondence Format |
|------|-----------|-----------------------|
| (data25) | 0 or 1 | xvYCC601 |
| (data26) | 0 or 1 | xvYCC709 |
| (data27) | 0 or 1 | sYCC |
| (data28) | 0 or 1 | AdobeYCC601 |
| (data29) | 0 or 1 | AdobeRGB |

data30-31:HDMI 3 Monitor Recommend Resolution Information

| Data | Parameter | Recommend Signal Format |
|------|-----------|-------------------------|
| (data30)(data31) | 00 | --- |
| | 01 | 480/60i |
| | 02 | 576/50i |
| | 03 | 480/60p |
| | 04 | 576/50p |
| | 05 | 720/60p |
| | 06 | 720/50p |
| | 07 | 1080/60i |
| | 08 | 1080/50i |
| | 09 | 1080/60p |
| | 10 | 1080/50p |
| | 11 | 1080/24p |
| | 12 | 4Kx2K/24Hz |
| | 13 | 4Kx2K/25Hz |
| | 14 | 4Kx2K/30Hz |
| | 15 | 4Kx2K/24Hz(SMPTE) |
| | 16 | 4Kx2K/50Hz |
| | 17 | 4Kx2K/60Hz |

data32:HDMI 3 Monitor DeepColor

| Data | Parameter | Signal Format |
|------|-----------|---------------|
| (data32) | 0 | --- |
| | 1 | 24bit (8bit*3) |
| | 2 | 30bit (10bit*3) |
| | 3 | 36bit (12bit*3) |
| | 4 | 48bit (16bit*3) |

data33-37:HDMI 3 Monitor Extend Color Space

| Data | Parameter | Correspondence Format |
|------|-----------|-----------------------|
| (data33) | 0 or 1 | xvYCC601 |
| (data34) | 0 or 1 | xvYCC709 |
| (data35) | 0 or 1 | sYCC |
| (data36) | 0 or 1 | AdobeYCC601 |
| (data37) | 0 or 1 | AdobeRGB |

data38-39:Input 3D format (HDMI only)

| Data | Parameter | Correspondence Format |
|------|-----------|-----------------------|
| (data38)(data39) | 00 | --- |
| | 01 | Frame packing |
| | 02 | Field alternative |
| | 03 | Line alternative |
| | 04 | Side-by-Side(Full) |
| | | L + depth |
| | | L + depth + graphics |
| | | Top-and-Bottom |
| | | Side-by-Side(Half) |

data40-41:Output 3D format (HDMI only)

| Data | Parameter | Correspondence Format |
|------|-----------|-----------------------|
| (data40)(data41) | 00 | --- |
| | 01 | Frame packing |
| | 02 | Field alternative |
| | 03 | Line alternative |
| | 04 | Side-by-Side(Full) |
| | | L + depth |
| | | L + depth + graphics |
| | | Top-and-Bottom |
| | | Side-by-Side(Half) |

data42-43:HDMI OUT 4 Monitor Recommend Resolution Information

| Data | Parameter | Signal Format |
|------|-----------|---------------|
| (data42)(data43) | 00 | --- |
| | 01 | 480/60i |
| | 02 | 576/50i |
| | 03 | 480/60p |
| | 04 | 576/50p |
| | 05 | 720/60p |
| | 06 | 720/50p |
| | 07 | 1080/60i |
| | 08 | 1080/50i |
| | 09 | 1080/60p |
| | 10 | 1080/50p |
| | 11 | 1080/24p |
| | 12 | 4Kx2K/24Hz |
| | 13 | 4Kx2K/25Hz |
| | 14 | 4Kx2K/30Hz |
| | 15 | 4Kx2K/24Hz(SMPTE) |
| | 16 | 4Kx2K/50Hz |
| | 17 | 4Kx2K/60Hz |

data44:HDMI OUT 4 Monitor DeepColor

| Data | Parameter | Signal Format |
|------|-----------|---------------|
| (data44) | 0 | --- |
| | 1 | 24bit (8bit*3) |
| | 2 | 30bit (10bit*3) |
| | 3 | 36bit (12bit*3) |
| | 4 | 48bit (16bit*3) |

data45-49:HDMI OUT 4 Monitor Extend Color Space

| Data | Parameter | Correspondence Format |
|------|-----------|-----------------------|
| (data45) | 0 or 1 | xvYCC601 |
| (data46) | 0 or 1 | xvYCC709 |
| (data47) | 0 or 1 | sYCC |
| (data48) | 0 or 1 | AdobeYCC601 |
| (data49) | 0 or 1 | AdobeRGB |