

DENON POA-A1HD control protocol

Ver. 1.0.7

Application model : POA-A1HD

Application terminal: RS-232C

Connector specification

I. RS-232C

Connector type: DB-9pin female type, slave straight connection (DCE type)

(1pin : GND , 2pin : TxD , 3pin : RxD , 5pin : Common(GND) , 4,6,7,8,9pin : NC)

Communication format:

| | |
|---------------------------|-----------------------------|
| Synchronous system | : Tone step synchronization |
| Communication system | : A half duplex |
| Communication speed | : 9600bps |
| Character length | : 8 bits |
| Parity control | : None |
| Start bit | : 1 bit |
| Stop bit | : 1 bit |
| Communication procedure | : Non procedural |
| Communication data length | : 135 bytes (maximum) |

Protocol specification

The following three data forms are defined.

- COMMAND** : The message sent to a system(POA) from a controller(Touch Panel etc.)
A command to a system is given from a controller.
- EVENT** : The message sent to a controller (Touch Panel etc.) from a system (POA)
The result is sent, when a system is operated directly and a state changes.
*The form of **EVENT** presupposes that it is the same as that of **COMMAND**.
Refer to the following table for the contents of **COMMAND and **EVENT**.
- RESPONSE** : The message sent to a controller (Touch Panel etc.) from a system (POA)
if the 'request command' (**COMMAND**+?
CR(0x0D)) has come from a controller.
The **RESPONSE** should be sent within 200ms of receiving the **COMMAND**.
*The form of **RESPONSE** presupposes that it is the same as that of **EVENT**.

Basic specification: The command by ASCII CODE, parameter expression

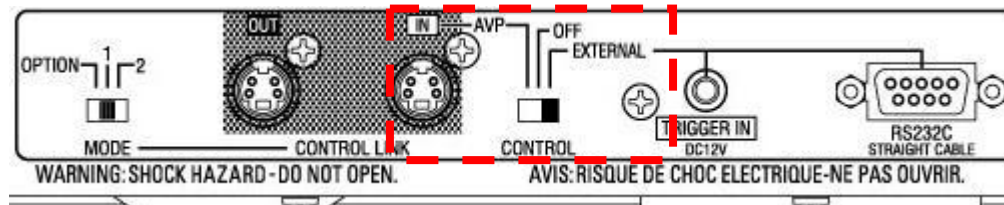
*ASCII CODE which can be used is from 0x20 to 0x7F: the alphabet and the number of 0-9, and space (0x20), some signs,
AND carriage return (0x0D) --- It is used only as a pause sign.

Command structure: COMMAND + PARAMETER + CR (0x0D)

| | |
|-----------|-----------------------------------|
| COMMAND | :ASCII CODE of 2 characters |
| PA | :Power AMP (POA) Control |
| PARAMETER | :ASCII CODE (up to 25 characters) |
| EX.PWON | : Power On |

Others

- COMMAND** is receivable also during transmission of **EVENT**.
- The **RESPONSE** should be sent as opposed to the request command by all the commands with which an **EVENT** exists not need to the another request commands.
- Please set the input channel after setting the power amp.
- Please Power on it after making the **CONTROL** switch of POA-A1HD **EXTERNAL**



COMMAND and PARAMETER list

| COMMAND | PARAMETER | function | Example |
|---------|-----------|-----------------------------|---------------|
| PA | PWON | POA POWER ON/STANDBY change | PAPWON<CR> |
| | PWSTBY | | PAPWSTBY<CR> |
| | PW? | Return PW Status | PAPW?<CR> |
| | INL1OFF | Input Channel L* Setting | PAINL1OFF<CR> |
| | INL1RCA | | PAINL1RCA<CR> |
| | INL1XLR | | PAINL1XLR<CR> |
| | INL2OFF | | PAINL2OFF<CR> |
| | INL2RCA | | PAINL2RCA<CR> |
| | INL2XLR | | PAINL2XLR<CR> |
| | INL3OFF | | PAINL3OFF<CR> |
| | INL3RCA | | PAINL3RCA<CR> |
| | INL3XLR | | PAINL3XLR<CR> |
| | INL4OFF | | PAINL4OFF<CR> |
| | INL4RCA | | PAINL4RCA<CR> |
| | INL4XLR | | PAINL4XLR<CR> |
| | INL5OFF | | PAINL5OFF<CR> |
| | INL5RCA | | PAINL5RCA<CR> |
| | INL5XLR | | PAINL5XLR<CR> |
| | INR1OFF | Input Channel R* Setting | PAINR1OFF<CR> |
| | INR1RCA | | PAINR1RCA<CR> |
| | INR1XLR | | PAINR1XLR<CR> |
| | INR2OFF | | PAINR2OFF<CR> |
| | INR2RCA | | PAINR2RCA<CR> |
| | INR2XLR | | PAINR2XLR<CR> |
| | INR3OFF | | PAINR3OFF<CR> |
| | INR3RCA | | PAINR3RCA<CR> |
| | INR3XLR | | PAINR3XLR<CR> |
| | INR4OFF | | PAINR4OFF<CR> |
| | INR4RCA | | PAINR4RCA<CR> |
| | INR4XLR | | PAINR4XLR<CR> |
| | INR5OFF | | PAINR5OFF<CR> |
| | INR5RCA | | PAINL2OFF<CR> |
| | INR5XLR | | PAINL2RCA<CR> |

| COMMAND | PARAMETER | function | Example |
|----------------|------------------|----------------------------|-----------------|
| PA | IN? | Return Channel setting | PAIN?<CR> |
| | INL1? | Return Channel L* setting | PAINL1?<CR> |
| | INL2? | | PAINL2?<CR> |
| | INL3? | | PAINL3?<CR> |
| | INL4? | | PAINL4?<CR> |
| | INL5? | | PAINL5?<CR> |
| | INR1? | Return Channel R* setting | PAINR1?<CR> |
| | INR2? | | PAINR2?<CR> |
| | INR3? | | PAINR3?<CR> |
| | INR4? | | PAINR4?<CR> |
| | INR5? | | PAINR5?<CR> |
| | AMPL12NRM | L1/L2 Power Amp setting | PAAMPL12NRM<CR> |
| | AMPL12BAP | | PAAMPL12BAP<CR> |
| | AMPL12BTL | | PAAMPL12BTL<CR> |
| | AMPL34NRM | L3/L4 Power Amp setting | PAAMPL34NRM<CR> |
| | AMPL34BAP | | PAAMPL34BAP<CR> |
| | AMPL34BTL | | PAAMPL34BTL<CR> |
| | AMPLR5NRM | L5/R5 Power Amp setting | PAAMPLR5NRM<CR> |
| | AMPLR5BAP | | PAAMPLR5BAP<CR> |
| | AMPLR5BTL | | PAAMPLR5BTL<CR> |
| | AMPR12NRM | R1/R2 Power Amp setting | PAAMPR12NRM<CR> |
| | AMPR12BAP | | PAAMPR12BAP<CR> |
| | AMPR12BTL | | PAAMPR12BTL<CR> |
| | AMPR34NRM | R3/R4 Power Amp setting | PAAMPR34NRM<CR> |
| | AMPR34BAP | | PAAMPR34BAP<CR> |
| | AMPR34BTL | | PAAMPR34BTL<CR> |
| | AMP? | Return Power Amp setting | PAAMP?<CR> |
| | AMPL12? | Return * Power Amp setting | PAAMPL12?<CR> |
| | AMPL34? | | PAAMPL34?<CR> |
| | AMPLR5? | | PAAMPLR5?<CR> |
| | AMPR12? | | PAAMPR12?<CR> |
| | AMPR34? | | PAAMPR34?<CR> |

※ PAIN?<CR> : RESPONSE becomes the following order.
State of input channel L1 -> State of L2 -> State of L3 -> State of L4 -> State of L5 ->
State of R5 -> State of R4 -> State of R3 -> State of R2 -> State of R1
PAINL1xxx<CR> PAINL2xxx<CR>PAINL3xxx<CR>PAINL4xxx<CR>PAINL5xxx<CR>
PAINR5xxx<CR>PAINR4xxx<CR>PAINR3xxx<CR>PAINR2xxx<CR>PAINR1xxx<CR>
(xxx ; "OFF" or "RCA" or "XLR")

※ PAAMP?<CR> : RESPONSE becomes the following order.
State of Power AMP channel L1/L2 -> State of L3/L4 -> State of L5/R5 ->
State of R4/R3 -> State of R2/R1
PAAMPL12xxx<CR> PAAMPL34xxx<CR>PAAMPLR5xxx<CR>PAAMPR34xxx<CR>PAAMPR12xxx<CR>
(xxx ; "NRM" or "BAP" or "BTL")

| COMMAND | PARAMETER | function | Example |
|----------------|----------------------------|-----------------------------|--------------|
| PA | MTON | Meter setting on | PAMTON<CR> |
| | MTOFF | Meter setting off | PAMTOFF<CR> |
| | MTLCHG | Left Meter setting | PAMTLCHG<CR> |
| | MTCCHG | Center Meter setting | PAMTCCHG<CR> |
| | MTRCHG | Right Meter setting | PAMTRCHG<CR> |
| | MT? | Return Meter setting | PAMT?<CR> |
| | MTO? | Return Meter On/Off setting | PAMTO?<CR> |
| | MTL? | Return Left Meter setting | PAMTL?<CR> |
| | MTC? | Return Center Meter setting | PAMTC?<CR> |
| MTR? | Return Right Meter setting | PAMTR?<CR> | |

※ PAMT?<CR> : RESPONSE becomes the following order.

| | | |
|-----------------------------|-------------|--------------------------------|
| Return Meter On/Off setting | PAMTxxx<CR> | (xxx ; "ON" or "OFF") |
| Return Left Meter setting | PAMTLx<CR> | (x ; "1"~"4" or "NONE") |
| Return Center Meter setting | PAMTxx<CR> | (xx ; "L5" or "R5" or "CNONE") |
| Return Right Meter setting | PAMTRx<CR> | (x ; "1"~"4" or "NONE") |

EVENT (or RESPONSE) and PARAMETER list

| <i>EVENT</i> | <i>PARAMETER</i> | function | example |
|--------------|------------------|------------------------------|---------------|
| PA | PWON | POA POWER ON/STANDBY change | PAPWON<CR> |
| | PWSTBY | POA Standby status | PAPWSTBY<CR> |
| | PWPROTECT | POA Protection status | PAPW?<CR> |
| | INL1OFF | Input Channel L* Information | PAINL1OFF<CR> |
| | INL1RCA | | PAINL1RCA<CR> |
| | INL1XLR | | PAINL1XLR<CR> |
| | INL2OFF | | PAINL2OFF<CR> |
| | INL2RCA | | PAINL2RCA<CR> |
| | INL2XLR | | PAINL2XLR<CR> |
| | INL3OFF | | PAINL3OFF<CR> |
| | INL3RCA | | PAINL3RCA<CR> |
| | INL3XLR | | PAINL3XLR<CR> |
| | INL4OFF | | PAINL4OFF<CR> |
| | INL4RCA | | PAINL4RCA<CR> |
| | INL4XLR | | PAINL4XLR<CR> |
| | INL5OFF | | PAINL5OFF<CR> |
| | INL5RCA | | PAINL5RCA<CR> |
| | INL5XLR | | PAINL5XLR<CR> |
| | INR1OFF | Input Channel R* Information | PAINR1OFF<CR> |
| | INR1RCA | | PAINR1RCA<CR> |
| | INR1XLR | | PAINR1XLR<CR> |
| | INR2OFF | | PAINR2OFF<CR> |
| | INR2RCA | | PAINR2RCA<CR> |
| | INR2XLR | | PAINR2XLR<CR> |
| | INR3OFF | | PAINR3OFF<CR> |
| | INR3RCA | | PAINR3RCA<CR> |
| | INR3XLR | | PAINR3XLR<CR> |
| | INR4OFF | | PAINR4OFF<CR> |
| | INR4RCA | | PAINR4RCA<CR> |
| | INR4XLR | | PAINR4XLR<CR> |
| | INR5OFF | | PAINR5OFF<CR> |
| | INR5RCA | | PAINL2OFF<CR> |
| INR5XLR | PAINL2RCA<CR> | | |

| EVENT | PARAMETER | function | example |
|--------------|--------------------------|-----------------------------|--------------------------|
| PA | AMPL12NRM | L1/L2 Power Amp Information | PAAMPL12NRM<CR> |
| | AMPL12BAP | | PAAMPL12BAP<CR> |
| | AMPL12BTL | | PAAMPL12BTL<CR> |
| | AMPL34NRM | L3/L4 Power Amp Information | PAAMPL34NRM<CR> |
| | AMPL34BAP | | PAAMPL34BAP<CR> |
| | AMPL34BTL | | PAAMPL34BTL<CR> |
| | AMPLR5NRM | L5/R5 Power Amp Information | PAAMPLR5NRM<CR> |
| | AMPLR5BAP | | PAAMPLR5BAP<CR> |
| | AMPLR5BTL | | PAAMPLR5BTL<CR> |
| | AMPR12NRM | R1/R2 Power Amp Information | PAAMPR12NRM<CR> |
| | AMPR12BAP | | PAAMPR12BAP<CR> |
| | AMPR12BTL | | PAAMPR12BTL<CR> |
| | AMPR34NRM | R3/R4 Power Amp Information | PAAMPR34NRM<CR> |
| | AMPR34BAP | | PAAMPR34BAP<CR> |
| AMPR34BTL | PAAMPR34BTL<CR> | | |
| PA | MTON | Meter Information | PAMTON<CR> |
| | MTOFF | | PAMTOFF<CR> |
| | MTL1 | Left Meter Information | PAMTL1<CR> |
| | MTL2 | | PAMTL2<CR> |
| | MTL3 | | PAMTL3<CR> |
| | MTL4 | | PAMTL4<CR> |
| | MTL5 | | Center Meter Information |
| | MTR5 | | PAMTR5<CR> |
| | MTR1 | Right Meter Information | PAMTR1<CR> |
| | MTR2 | | PAMTR2<CR> |
| | MTR3 | | PAMTR3<CR> |
| | MTR4 | | PAMTR4<CR> |
| | MTLNONE | No left meter selection | PAMTLNONE<CR> |
| | MTCNONE | No center meter selection | PAMTCNONE<CR> |
| MTRNONE | No right meter selection | PAMTRNONE<CR> | |