DENON AVR/AVC control protocol

Application model : AVR-3805/AVC-3890
Application terminal : RS-232C

Connector specification

```
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 is defined.

    COMMAND   :   The message sent to a system(AVR/AVC) 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(AVR/AVC)
                         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(AVR/AVC)
                         if the 'request command' (***COMMAND***+***?***+CR(0x0D)) has came from a controller.
                         The ***RESPONSE*** should be sent <u>within 200ms</u> 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

               ex.   SI   :   Select Input source
                        MS :   surround Mode Setting
                        MV :   Master Volume setting
                        PW :   system PoWer setting

     PARAMETER : ASCII CODE (up to 25 characters)

               ex.   DVD : function name
                       CDR/TAPE-1 : function name
                       THX SURROUND EX : surround mode name
                       SUPER STADIUM : surround mode name
                  *Special Parameter--- ? : for request command

The example of a command   * <CR> is the meaning of 0x0D.

      SIDVD<CR> : Select Input source DVD

      MSTHX SURROUND EX<CR> : surround Mode Set to THX SURROUND EX

      MVUP<CR> : Master Volume UP

      PWON<CR> : system PoWer ON

      PWSTANDBY<CR> : system PoWer STANDBY

      SI?<CR> : Request command for now playing input source >> Return ***RESPONSE*** 'SI***<CR>'

Others

A) **COMMAND** is receivable also during transmission of **EVENT**.

B) Since CHANNEL VOLUME changes simultaneously when the SURROUND MODE changes, the value of the channel volume of all channels returns as **EVENT**.

C) CHANNEL VOLUME returns the data of ALL channels by the present SURROUND MODE also including an intact channel. In this case, the data of an intact channel is set to "50".

D) Since SURROUND MODE changes simultaneously when the INPUT source changes, the SURROUND MODE (and also the value of the channel volume of all channels , It described in B)) returns as **EVENT**.

E) When SURROUND MODE is the same in between INPUT source change before and after, **EVENT** of SURROUND MODE and CHANNEL VOLUME does NOT return.

F) Although **EVENT** of SURROUND MODE returns when the present SURROUND MODE is set up again, CHANNEL VOLUME does NOT return.

G) When SURROUND MODE is changed, before returning SURROUND MODE after change as **EVENT**, the present SURROUND MODE is returned.

H) 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(ex. SV command).

I) The **PARAMETER** (with **COMMAND** and **RESPONSE**, **EVENT**) of minimum level of MASTER VOLUME defines "99".

J) If the MASTER VOLUME & CHANNEL VOLUME set with 0.5dB step, the **PARAMETER** (with **COMMAND** and **RESPONSE**, **EVENT**) defines three ASCII characters as bellows.

```
    ex.    MASTER VOLUME = +1.0dB :      MV81<CR>
                          +0.5dB :      MV805<CR>
                            0dB :      MV80<CR>
                          -0.5dB :      MV795<CR>
                          -1.0dB :      MV79<CR>
                            |          |
                         -79.5dB :      MV005<CR>
                         -80.0dB :      MV00<CR>
                         ---    :      MV99<CR>
```

   * At the **.0dB step, only uses two ASCII characters as **PARAMETER**, same as usual.

COMMAND and PARAMETER list

COMMAND	PARAMETER	function	example
PW	ON	POWER ON/STANDBY change	PWON<CR>
	STANDBY		PWSTANDBY<CR>
MV	UP	MASTER VOLUME UP/DOWN , direct change to **dB	MVUP<CR>
	DOWN		MVDOWN<CR>
	**	**:00 to 99 by ASCII , 80=0dB, 99=---(MIN)	MV80<CR>
CV	FL UP	CHANNEL VOLUME UP/DOWN , direct change to **dB	CVFL UP<CR>
	FL DOWN	---FRONT Lch	CVFL DOWN<CR>
	FL **	**:38 to 62 by ASCII , 50=0dB	CVFL 50<CR>
	FR UP		CVFR UP<CR>
	FR DOWN	---FRONT Rch	CVFR DOWN<CR>
	FR **	**:38 to 62 by ASCII , 50=0dB	CVFR 50<CR>
	C UP		CVC UP<CR>
	C DOWN	---CENTERch	CVC DOWN<CR>
	C **	**:38 to 62 by ASCII , 50=0dB	CVC 50<CR>
	SW UP		CVSW UP<CR>
	SW DOWN	---SUBWOOFERch	CVSW DOWN<CR>
	SW **	**:38 to 62 by ASCII , 50=0dB	CVSW 50<CR>
	SL UP		CVSL UP<CR>
	SL DOWN	---SURROUND Lch	CVSL DOWN<CR>
	SL **	**:38 to 62 by ASCII , 50=0dB	CVSL 50<CR>
	SR UP		CVSR UP<CR>
	SR DOWN	---SURROUND Rch	CVSR DOWN<CR>
	SR **	**:38 to 62 by ASCII , 50=0dB	CVSR 50<CR>
	SBL UP	---SURROUND BACK Lch (SBch 2SP)	CVSBL UP<CR>
	SBL DOWN		CVSBL DOWN<CR>
	SBL **	**:38 to 62 by ASCII , 50=0dB	CVSBL 50<CR>
	SBR UP	---SURROUND BACK Rch (SBch 2SP)	CVSBR UP<CR>
	SBR DOWN		CVSBR DOWN<CR>
	SBR **	**:38 to 62 by ASCII , 50=0dB	CVSBR 50<CR>

MV , CV **COMMAND** : "*" parameter uses two or three ASCII characters. (see page4 J) section)

COMMAND	PARAMETER	function	example
CV	SB UP	---SURROUND BACKch (SBch 1SP)	CVSB UP<CR>
	SB DOWN		CVSB DOWN<CR>
	SB **	**:38 to 62 by ASCII , 50=0dB	CVSB 50<CR>
MU	ON	OUTPUT MUTE ON/OFF change	MUON<CR>
	OFF		MUOFF<CR>
SI	PHONO	Select INPUT source	SIPHONO<CR>
	CD		SICD<CR>
	TUNER		SITUNER<CR>
	DVD		SIDVD<CR>
	VDP		SIVDP<CR>
	TV		SITV<CR>
	DBS/SAT	---Select DBS function at AVR-3805	SIDBS/SAT<CR>
	VCR-1		SIVCR-1<CR>
	VCR-2		SIVCR-2<CR>
	VCR-3	---Invalid at AVR-3805	SIVCR-3<CR>
	V.AUX		SIV.AUX<CR>
	CDR/TAPE1	---Select CDR/TAPE function at AVR-3805	SICDR/TAPE1<CR>
	MD/TAPE2	---Invalid at AVR-3805	SIMD/TAPE2<CR>
ZM	ON	MAIN-ZONE ON/OFF change at AVR-3805	ZMON<CR>
	OFF		ZMOFF<CR>
Z1	PHONO	MULTI ZONE-3 mode set , and select source at AVR-3805	Z1PHONO<CR>
	|	---The name of PARAMETER is	|
	CDR/TAPE1	the same as that of the time of SI COMMAND.	Z1MD/TAPE2<CR>
	SOURCE	MULTI ZONE-3 mode cancel at AVR-3805	Z1SOURCE<CR>
	UP	MULTI ZONE-3 VOLUME UP/DOWN , direct change to ***dB	Z1UP<CR>
	DOWN	at AVR-3805	Z1DOWN<CR>
	**	**:00 to 99 by ASCII , 80=0dB, 99=---(MIN)	Z180<CR>
	ON	MULTI ZONE-3 ON/OFF change at AVR-3805	Z1ON<CR>
	OFF		Z1OFF<CR>

CV **COMMAND** : "*" parameter uses two or three ASCII characters. (see page4 J) section)

COMMAND	PARAMETER	function	example
Z2	PHONO | CDR/TAPE1	MULTI ZONE-2 mode set , and select source at AVR-3805 ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z2PHONO<CR> | Z2MD/TAPE2<CR>
	SOURCE	MULTI ZONE-2 mode cancel	Z2SOURCE<CR>
	UP	MULTI ZONE-2 VOLUME UP/DOWN , direct change to ***dB	Z2UP<CR>
	DOWN		Z2DOWN<CR>
	**	**:00 to 99 by ASCII , 80=0dB, 99=---(MIN)	Z280<CR>
	ON	MULTI ZONE-2 ON/OFF change at AVR-3805	Z2ON<CR>
	OFF		Z2OFF<CR>
SR	PHONO | CDR/TAPE1	REC SELECT mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	SRPHONO<CR> | SRMD/TAPE2<CR>
	SOURCE	REC SELECT mode cancel	SRSOURCE<CR>
SV	DVD	VIDEO SELECT mode set , and select source	SVDVD<CR>
	VDP		SVVDP<CR>
	TV		SVTV<CR>
	DBS/SAT	---Select DBS function at AVR-3805	SVDBS/SAT<CR>
	VCR-1		SVVCR-1<CR>
	VCR-2		SVVCR-2<CR>
	VCR-3	---Invalid at AVR-3805	SVVCR-3<CR>
	V.AUX		SVV.AUX<CR>
	SOURCE	VIDEO SELECT mode cancel	SVSOURCE<CR>
SD	AUTO	set DIGITAL INPUT AUTO mode	SDAUTO<CR>
	PCM	set DIGITAL INPUT force PCM mode	SDPCM<CR>
	DTS	set DIGITAL INPUT force DTS mode	SDDTS<CR>
	RF	---Invalid at AVR-3805	SDRF<CR>
	ANALOG	set force ANALOG INPUT mode	SDANALOG<CR>
	EXT.IN-1	set EXT.IN-1 mode ---Set EXT.IN mode at AVR-3805	SDEXT.IN-1<CR>
	EXT.IN-2	set EXT.IN-2 mode ---Invalid at AVR-3805	SDEXT.IN-2<CR>

EVENT	PARAMETER	function	example
MS	DIRECT	SURROUND mode set	MSDIRECT<CR>
	PURE DIRECT		MSPURE DIRECT<CR>
	STEREO		MSSTEREO<CR>
	MULTI CH IN		MSMULTI CH IN<CR>
	MULTI CH DIRECT		MSMULTI CH DIRECT<CR>
	MULTI CH PURE D		MSMULTI CH PURE D<CR>
	DOLBY PRO LOGIC	All are received as "DOLBY SURROUND" ,	MSDOLBY PRO LOGIC<CR>
	DOLBY PL2	the surround mode which changed return as *EVENT*.	MSDOLBY PL2<CR>
	DOLBY PL2x		MSDOLBY PL2X<CR>
	DOLBY DIGITAL		MSDOLBY DIGITAL<CR>
	DOLBY D EX		MSDOLBY D EX<CR>
	DTS NEO:6	All are received as "DTS SURROUND" ,	MSDTS NEO:6<CR>
	DTS SURROUND		MSDTS SURROUND<CR>
	DTS ES DSCRT6.1		MSDTS ES DSCRT6.1<CR>
	DTS ES MTRX6.1		MSDTS ES MTRX6.1<CR>
	DOLBY H/P	---Invalid at AVR-3805	MSDOLBY H/P<CR>
	DTS+DOLBY H/P	---Invalid at AVR-3805	MSDTS+DOLBY H/P<CR>
	HOME THX CINEMA	---Invalid at AVR-3805	MSHOME THX CINEMA<CR>
	THX5.1	---Invalid at AVR-3805	MSTHX5.1<CR>
	THX U2 CINEMA	---Invalid at AVR-3805	MSTHX U2 CINEMA<CR>
	THX MUSIC MODE	---Invalid at AVR-3805	MSTHX MUSIC MODE<CR>
	THX6.1	---Invalid at AVR-3805	MSTHX6.1<CR>
	THX SURROUND EX	---Invalid at AVR-3805	MSTHX SURROUND EX<CR>
	WIDE SCREEN		MSWIDE SCREEN<CR>
	5CH STEREO	Both are received as "5CH/7CH STEREO" ,	MS5CH STEREO<CR>
	7CH STEREO	the surround mode which changed return as *EVENT*.	MS7CH STEREO<CR>
	SUPER STADIUM		MSSUPER STADIUM<CR>
	ROCK ARENA		MSROCK ARENA<CR>
	JAZZ CLUB		MSJAZZ CLUB<CR>
	CLASSIC CONCERT		MSCLASSIC CONCERT<CR>
	MONO MOVIE		MSMONO MOVIE<CR>
	MATRIX		MSMATRIX<CR>
	VIDEO GAME		MSVIDEO GAME<CR>
	VIRTUAL		MSVIRTUAL<CR>

EVENT	PARAMETER	function	example
MS	MPEG2 AAC	---Invalid at AVR model	MSMPEG2 AAC<CR>
	AAC+DOLBY EX	---Invalid at AVR model	MSAAC+DOLBY EX<CR>
PS	TONE DEFEAT ON	PARAMETER setting	PSTONE DEFEAT ON<CR>
	TONE DEFEAT OFF	TONE DEFEAT ON/OFF	PSTONE DEFEAT OFF<CR>
	SB:MTRX ON	SURROUND BACK SP MODE set	PSSB:MTRX ON<CR>
	SB:NON MTRX	---MTRX ON = SURR.EX ON = DSCRT ON	PSSB:NON MTRX<CR>
	SB:PL2xCINEMA	(@THX) (@ES DSCRT)	PSSB:PL2X CINEMA<CR>
	SB:PL2xMUSIC		PSSB:PL2X MUSIC<CR>
	SB:OFF		PSSB:OFF<CR>
	CINEMA EQ.ON	CINEMA EQ. ON/OFF	PSCINEMA EQ.ON<CR>
	CINEMA EQ.OFF		PSCINEMA EQ.OFF<CR>
	MODE : MUSIC	CINEMA / MUSIC / GAME / PL mode change	PSMODE : MUSIC<CR>
	MODE : CINEMA	(This parameter can change DOLBY PL2,PL2x,NEO:6 mode.)	PSMODE : CINEMA<CR>
	MODE : GAME	---SB=ON: PL2x mode / SB=OFF: PL2 mode	PSMODE : GAME<CR>
	MODE : PRO LOGIC	--- GAME can change DOLBY PL2 & PL2x mode --- PL can change ONLY DOLBY PL2 mode	PSMODE : PRO LOGIC<CR>
	ROOM EQ:NORMAL	ROOM EQ mode direct change	PSROOM EQ:NORMAL<CR>
	ROOM EQ:FRONT		PSROOM EQ:FRONT<CR>
	ROOM EQ:FLAT		PSROOM EQ:FLAT<CR>
	ROOM EQ:MANUAL		PSROOM EQ:MANUAL<CR>
	ROOM EQ:OFF		PSROOM EQ:OFF<CR>
TF	UP	TUNER Frequency UP/DOWN , direct change	TFUP<CR>
	DOWN		TFDOWN<CR>
	****** (6 digits)	--- ****.** kHz at AM band (>050000 is AM.) ****.** MHz at FM band (<050000 is FM.)	TF105000<CR> (1050.00kHz at AM)
TP	UP	TUNER PRESET CH UP/DOWN , direct change to No.**	TPUP<CR>
	DOWN		TPDOWN<CR>
	**(PRESET No.)		TPA1<CR> (PRESET No."A1")
TM		TUNER BAND , MODE Select	
	AM	---Band set to AM	TMAM<CR>
	FM	---Band set to FM	TMFM<CR>
	AUTO	---Tuning mode set to AUTO mode	TMAUTO<CR>
	MANUAL	---Tuning mode set to MANUAL mode	TMMANUAL<CR>

TF, TP, TM **COMMAND** : '*' parameters can NOT operate when INPUT source isn't TUNER.

EVENT(or RESPONSE) and PARAMETER list

EVENT	*PARAMETER*	function	example	*RES.
PW	ON	POWER ON/STANDBY change	PWON<CR>	
	STANDBY		PWSTANDBY<CR>	
MV	**	MASTER VOLUME change , **:00 to 98 by ASCII 98 = +18dB(MAX) 80 = 0dB 00 = -80dB 99 = ---(MIN)	MV80<CR>	
CV	FL **	CHANNEL VOLUME change , **:38 to 62 by ASCII	CVFL 50<CR>	
	FR **	62 = +12dB(MAX)	CVFR 50<CR>	
	C **	50 = 0dB	CVC 50<CR>	
	SW **	38 = -12dB(MIN)	CVSW 50<CR>	
	SL **	00 = OFF (define ONLY SWch in DIRECT mode.)	CVSL 50<CR>	
	SR **		CVSR 50<CR>	
	SBL **	(at SBch 2SP)	CVSBL 50<CR>	
	SBR **	(at SBch 2SP)	CVSBR 50<CR>	
	SB **	(at SBch 1SP)	CVSB 50<CR>	
MU	ON	OUTPUT MUTE ON/OFF change	MUON<CR>	
	OFF		MUOFF<CR>	
SI	PHONO	INPUT source change	SIPHONO<CR>	
	CD		SICD<CR>	
	TUNER		SITUNER<CR>	
	DVD		SIDVD<CR>	
	VDP		SIVDP<CR>	
	TV		SITV<CR>	
	DBS/SAT	---Select DBS function at AVR-3805	SIDBS/SAT<CR>	
	VCR-1		SIVCR-1<CR>	
	VCR-2		SIVCR-2<CR>	
	VCR-3	---Invalid at AVR-3805	SIVCR-3<CR>	
	V.AUX		SIV.AUX<CR>	
	CDR/TAPE1	---Select CDR/TAPE function at AVR-3805	SICDR/TAPE1<CR>	
	MD/TAPE2	---Invalid at AVR-3805	SIMD/TAPE2<CR>	

*RES. : NOT returns '? ' parameters as **RESPONSE**.

MV , CV **COMMAND** : "*" parameter uses two or three ASCII characters. (see page4 J) section)

EVENT	PARAMETER	function	example	*RES.
ZM	ON	MAIN-ZONE ON/OFF change	ZMON<CR>	
	OFF		ZMOFF<CR>	
Z1	PHONO | CDR/TAPE1	MULTI ZONE-3 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z1PHONO<CR> | Z1MD/TAPE2<CR>	
	SOURCE	MULTI ZONE-3 mode cancel	Z1SOURCE<CR>	

	**	MULTI ZONE-3 VOLUME change , **:00 to 99 by ASCII
		      98 = +18dB(MAX)
		      80 = 0dB
		      10 = -70dB
		      99 = ---(MIN)
			Z180<CR>	2

	ON	MULTI ZONE-3 ON/OFF change	Z1ON<CR>	2
	OFF		Z1OFF<CR>	2
Z2	PHONO | CD/TAPE1	MULTI ZONE-2 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z2PHONO<CR> | Z2MD/TAPE2<CR>	
	SOURCE	MULTI ZONE-2 mode cancel	Z2SOURCE<CR>	

	**	MULTI ZONE-2 VOLUME change , **:00 to 99 by ASCII
		      98 = +18dB(MAX)
		      80 = 0dB
		      10 = -70dB
		      99 = ---(MIN)
			Z180<CR>	2

	ON	MULTI ZONE-2 ON/OFF change	Z2ON<CR>	2
	OFF		Z2OFF<CR>	2
SR	PHONO | CD/TAPE1	REC SELECT source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	SRPHONO<CR> | SRMD/TAPE2<CR>	
	SOURCE	REC SELECT mode cancel	SRSOURCE<CR>	

EVENT	*PARAMETER*	function	example	*RES.
TF	****** (6 digits)	TUNER Frequency change --- ****.** kHz at AM band ****.** MHz at FM band	TF105000<CR> (1050.00kHz at AM)	
TP	**(PRESET No.)	TUNER PRESET change to No.**	TPA1<CR> (PRESET No."A1")	
TM		TUNER BAND , MODE change		
	AM	---Band set to AM	TMAM<CR>	?
	FM	---Band set to FM	TMFM<CR>	?
	AUTO	---Tuning mode set to AUTO mode	TMAUTO<CR>	
	MANUAL	---Tuning mode set to MANUAL mode	TMMANUAL<CR>	

*RES. : NOT returns '? ' parameters as *RESPONSE*.

EVENT	PARAMETER	function	example	*RES.
MS	DIRECT	SURROUND mode change	MSDIRECT<CR>	
	PURE DIRECT		MSPURE DIRECT<CR>	
	STEREO		MSSTEREO<CR>	
	MULTI CH IN		MSMULTI CH IN<CR>	
	MULTI CH IN +PL2x CINEMA		MSM CH IN+PL2X C<CR>	
	MULTI CH IN +PL2x MUSIC		MSM CH IN+PL2X M<CR>	
	MULTI CH DIRECT		MSMULTI CH DIRECT<CR>	
	MULTI CH DIRECT +PL2x CINEMA		MSM CH DRCT+PL2X C <CR>	
	MULTI CH DIRECT +PL2x MUSIC		MSM CH DRCT+PL2X M <CR>	
	MULTI CH PURE D		MSMULTI CH PURE D<CR>	
	MULTI CH PURE D +PL2x CINEMA		MSM CH PURE D+PL2X C <CR>	
	MULTI CH PURE D +PL2x MUSIC		MSM CH PURE D+PL2X M <CR>	
	DOLBY PRO LOGIC		MSDOLBY PRO LOGIC<CR>	
	DOLBY PL2 CINEMA		MSDOLBY PL2 C<CR>	
	DOLBY PL2 MUSIC		MSDOLBY PL2 M<CR>	
	DOLBY PL2 GAME		MSDOLBY PL2 G<CR>	
	DOLBY PL2x CINEMA		MSDOLBY PL2X C<CR>	
	DOLBY PL2x MUSIC		MSDOLBY PL2X M<CR>	
	DOLBY PL2x GAME		MSDOLBY PL2X G<CR>	
	DOLBY DIGITAL		MSDOLBY DIGITAL<CR>	
	DOLBY D EX		MSDOLBY D EX<CR>	
	DOLBY D +PL2x CINEMA		MSDOLBY D+PL2X C<CR>	
	DOLBY D +PL2x MUSIC		MSDOLBY D+PL2X M<CR>	

EVENT	PARAMETER	function	example	*RES.
	DTS NEO:6 CINEMA		MSDTS NEO:6 C<CR>	
	DTS NEO:6 MUSIC		MSDTS NEO:6 M<CR>	
	DTS SURROUND		MSDTS SURROUND<CR>	
	DTS ES DSCRT6.1		MSDTS ES DSCRT6.1<CR>	
	DTS ES MTRX6.1		MSDTS ES MTRX6.1<CR>	
	DTS+PL2x CINEMA		MSDTS+PL2X C<CR>	
	DTS+PL2x MUSIC		MSDTS+PL2X M<CR>	
	DOLBY H/P	---Invalid at AVR-3805	MSDOLBY H/P<CR>	
	DTS+DOLBY H/P	---Invalid at AVR-3805	MSDTS+DOLBY H/P<CR>	
	HOME THX CINEMA	---Invalid at AVR-3805	MSHOME THX CINEMA<CR>	
	THX5.1	---Invalid at AVR-3805	MSTHX5.1<CR>	
	THX U2 CINEMA	---Invalid at AVR-3805	MSTHX U2 CINEMA<CR>	
	THX MUSIC MODE	---Invalid at AVR-3805	MSTHX MUSIC MODE<CR>	
	THX6.1	---Invalid at AVR-3805	MSTHX6.1<CR>	
	THX SURROUND EX	---Invalid at AVR-3805	MSTHX SURROUND EX<CR>	
	WIDE SCREEN		MSWIDE SCREEN<CR>	
	5CH STEREO		MS5CH STEREO<CR>	
	7CH STEREO		MS7CH STEREO<CR>	
	SUPER STADIUM		MSSUPER STADIUM<CR>	
	ROCK ARENA		MSROCK ARENA<CR>	
	JAZZ CLUB		MSJAZZ CLUB<CR>	
	CLASSIC CONCERT		MSCLASSIC CONCERT<CR>	
	MONO MOVIE		MSMONO MOVIE<CR>	
	MATRIX		MSMATRIX<CR>	
	VIDEO GAME		MSVIDEO GAME<CR>	
	VIRTUAL		MSVIRTUAL<CR>	
	MPEG2 AAC	---Invalid at AVR model	MSMPEG2 AAC<CR>	
	AAC+DOLBY EX	---Invalid at AVR model	MSAAC+DOLBY EX<CR>	
	AAC+PL2x CINEMA	---Invalid at AVR model	MSAAC+PL2X C<CR>	
	AAC+PL2x MUSIC	---Invalid at AVR model	MSAAC+PL2X M<CR>	

EVENT	*PARAMETER*	function	example	*RES.
PS	ROOM EQ:NORMAL	ROOM EQ mode change	PSROOM EQ:NORMAL<CR>	?
	ROOM EQ:FRONT		PSROOM EQ:FRONT<CR>	?
	ROOM EQ:FLAT		PSROOM EQ:FLAT<CR>	?
	ROOM EQ:MANUAL		PSROOM EQ:MANUAL<CR>	?
	ROOM EQ:OFF		PSROOM EQ:OFF<CR>	?

*RES. : NOT returns '? ' parameters as **RESPONSE**.