

DENON AVR/AVC control protocol

Ver. 4.37a

Application model : AVR-5805/AVC-A1XV
Application terminal : RS-232C/ Ethernet

Connector specification

1. 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)

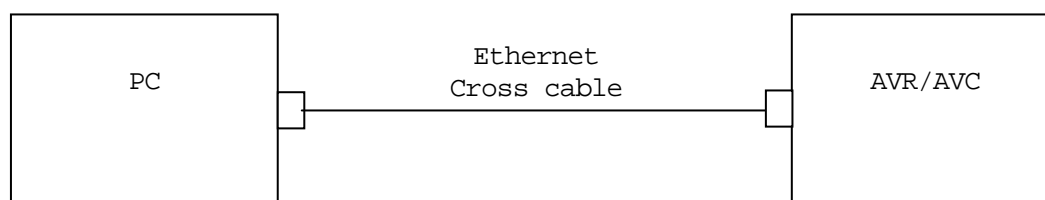
Communication format :

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)

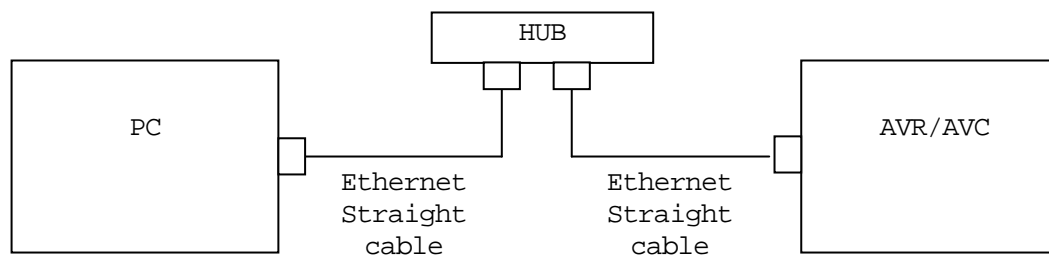
2. Ethernet

Connector type : RJ-45(10BASE-T/100BASE-TX)

Example



Example



Communication format :

Communication system	: A half duplex
Communication speed	: 10Mbps/100Mbps
Communication port	: TCP port 23 (telnet)
Communication data length	: 135bytes (maximum)

NETWORK SETUP of AVR-5805/AVC-A1XV

>Procedure of Network Setup mode.

(1)Push the POWER switch during STANDARD button and 9CH STEREO button press simultaneously.

(2)Press SYSTEM SETUP button, then System Setup Menu appears on FL-display(and OSD)

(3)Select Option Setup and select Network Setup.

(4)Set parameters described below.

<DHCP> "ON"---Use this setting when DHCP server is on the local network.

"OFF"---Use this setting when DHCP server is not on the local network.

<IP Address> When <DHCP> sets "OFF", please set IP address.

When <DHCP> sets "ON", you can confirm the IP address that is set by server.

<Subnet Mask> When <DHCP> sets "OFF", please set Subnet Mask.

When <DHCP> sets "ON", you can confirm the Subnet Mask that is set by server.

<Gateway> Set the address of Gateway when Gateway is on the local network.

Do not set this parameter when Gateway is not on the local network.

<Primary DNS> Do not set this parameter.

<Second DNS> Do not set this parameter.

<Proxy> Set this parameter "OFF".

<Network Option:Standby Mode Power Saving>

"OFF"---Use this setting when using the AVR-5805/AVC-A1XV connected in a network.

"ON"--- Use this setting when not using the AVR-5805/AVC-A1XV connected in a network.

This setting is reducing the power consumption in the standby mode.

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 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

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 : 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 & ZONE2 VOLUME (ZONE2 THEATER:5.1ch or 7.1ch system) & 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 ** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN)	MVUP<CR>
	DOWN		MVDOWN<CR>
	**		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	---FRONT Rch	CVFR UP<CR>
	FR DOWN		CVFR DOWN<CR>
	FR **		CVFR 50<CR>
	C UP	---CENTER ch	CVC UP<CR>
	C DOWN		CVC DOWN<CR>
	C **		CVC 50<CR>
	SW1 UP	---SWLeft or SWFront or SWMain ch (SWch 2 or 3SP)	CVSW1 UP<CR>
	SW1 DOWN	---SUBWOOFER (When SWch is 1SP)	CVSW1 DOWN<CR>
	SW1 **	** : 00,38 to 62 by ASCII , 50=0dB, 00=OFF	CVSW1 50<CR>
	SW2 UP	---SWRight or SWBack ch (SWch 2 or 3SP)	CVSW2 UP<CR>
	SW2 DOWN		CVSW2 DOWN<CR>
	SW2 **		CVSW2 50<CR>
	LFE UP	---LFEch (SWch 2 or 3SP)	CVLFE UP<CR>
	LFE DOWN		CVLFE DOWN<CR>
	LFE **		CVLFE 50<CR>
	SLA UP	---SURROUND L(A)ch	CVSLA UP<CR>
	SLA DOWN		CVSLA DOWN<CR>
	SLA **		CVSLA 50<CR>
	SRA UP	---SURROUND R(A)ch	CVSRA UP<CR>
	SRA DOWN		CVSRA DOWN<CR>
SRA **	CVSRA 50<CR>		

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

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
CV	SLB UP		CVSLB UP<CR>
	SLB DOWN	---SURROUND L(B)ch	CVSLB DOWN<CR>
	SLB **	** :38 to 62 by ASCII , 50=0dB	CVSLB 50<CR>
	SRB UP		CVSRB UP<CR>
	SRB DOWN	---SURROUND R(B)ch	CVSRB DOWN<CR>
	SRB **	** :38 to 62 by ASCII , 50=0dB	CVSRB 50<CR>
	SBL UP		CVSBL UP<CR>
	SBL DOWN	---SURROUND BACK Lch (SBch 2SP)	CVSBL DOWN<CR>
	SBL **	** :38 to 62 by ASCII , 50=0dB	CVSBL 50<CR>
	SBR UP		CVSBR UP<CR>
	SBR DOWN	---SURROUND BACK Rch (SBch 2SP)	CVSBR DOWN<CR>
	SBR **	** :38 to 62 by ASCII , 50=0dB	CVSBR 50<CR>
	SB UP		CVSBL UP<CR>
	SB DOWN	---SURROUND BACKch (SBch 1SP)	CVSBL DOWN<CR>
	SB **	** :38 to 62 by ASCII , 50=0dB	CVSBL 50<CR>
	EXLA UP		CVEXLA UP<CR>
	EXLA DOWN	---EX L(A) ch	CVEXLA DOWN<CR>
	EXLA **	** :38 to 62 by ASCII , 50=0dB	CVEXRA 50<CR>
	EXRA UP		CVEXRA UP<CR>
	EXRA DOWN	---EX R(A) ch	CVEXRA DOWN<CR>
	EXRA **	** :38 to 62 by ASCII , 50=0dB	CVEXRA 50<CR>
	EXLB UP		CVEXLB UP<CR>
	EXLB DOWN	---EX L(B) ch	CVEXLB DOWN<CR>
	EXLB **	** :38 to 62 by ASCII , 50=0dB	CVEXRB 50<CR>
	EXRB UP		CVEXRB UP<CR>
	EXRB DOWN	---EX R(B) ch	CVEXRB DOWN<CR>
EXRB **	** :38 to 62 by ASCII , 50=0dB	CVEXRB 50<CR>	

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

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
CV	EXLC UP		CVEXLC UP<CR>
	EXLC DOWN	---EX L(C) ch	CVEXLC DOWN<CR>
	EXLC **	** : 38 to 62 by ASCII , 50=0dB	CVEXLC 50<CR>
	EXRC UP		CVEXRC UP<CR>
	EXRC DOWN	---EX R(C) ch	CVEXRC DOWN<CR>
	EXRC **	** : 38 to 62 by ASCII , 50=0dB	CVEXRC 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		SIDBS<CR>
	VCR-1		SIVCR-1<CR>
	VCR-2		SIVCR-2<CR>
	VCR-3		SIVCR-3<CR>
	VCR-4		SIVCR-4<CR>
	V.AUX		SIV.AUX<CR>
	CDR/TAPE		SICDR/TAPE<CR>
	DTU		SIDTU<CR>
ZM	ON	MAIN-ZONE ON/OFF change	ZMON<CR>
	OFF		ZMOFF<CR>
SV	DVD	VIDEO SELECT mode set , and select source	SVDVD<CR>
	VDP		SVVDP<CR>
	TV		SVTV<CR>
	DBS		SVDBS<CR>
	VCR-1		SVVCR-1<CR>
	VCR-2		SVVCR-2<CR>
	VCR-3		SVVCR-3<CR>
	VCR-4		SVVCR-4<CR>
	V.AUX		SVV.AUX<CR>
	SOURCE	VIDEO SELECT mode cancel	SVSOURCE<CR>

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

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
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-5805	SDRF<CR>
	ANALOG	set force ANALOG INPUT mode	SDANALOG<CR>
	EXT.IN-1	set EXT.IN-1 or EXT.IN mode	SDEXT.IN-1<CR>
	EXT.IN-2	set EXT.IN-2 mode	SDEXT.IN-2<CR>
MS	DIRECT	SURROUND mode set	MSDIRECT<CR>
	PURE DIRECT		MSPURE DIRECT<CR>
	STEREO		MSSTEREO<CR>
	MULTI CH IN	---This is received as "SATNDARD".	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 "STANDARD" , the surround mode which changed return as EVENT .	MSDOLBY PRO LOGIC<CR>
	DOLBY PL2		MSDOLBY PL2<CR>
	DOLBY PL2x		MSDOLBY PL2X<CR>
	DOLBY DIGITAL		MSDOLBY DIGITAL<CR>
	DOLBY D EX		MSDOLBY D EX<CR>
	DTS NEO:6		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		MSDOLBY H/P<CR>
	DTS+DOLBY H/P		MSDTS+DOLBY H/P<CR>
	HOME THX CINEMA	All are received as "THX SURROUND" , the surround mode which changed return as EVENT .	MSHOME THX CINEMA<CR>
	THX5.1		MSTHX5.1<CR>
	THX U2 CINEMA		MSTHX U2 CINEMA<CR>
	THX MUSIC MODE		MSTHX MUSIC MODE<CR>
	THX GAMES MODE		MSTHX GAMES MODE<CR>
	THX6.1	---Operate as Matrix6.1 or Discrete6.1	MSTHX6.1<CR>
	THX SURROUND EX		MSTHX SURROUND EX<CR>
WIDE SCREEN		MSWIDE SCREEN<CR>	

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
MS	5CH STEREO	Both are received as "5CH/7CH/9CH STEREO" , the surround mode which changed return as EVENT . ---Invalid at AVR model ---Invalid at AVR model	MS5CH STEREO<CR>
	7CH STEREO		MS7CH STEREO<CR>
	9CH STEREO		MS9CH 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>
	MPEG2 AAC		MSMPEG2 AAC<CR>
	AAC+DOLBY EX		MSAAC+DOLBY EX<CR>
	USER1		MSUSER1<CR>
	USER2		MSUSER2<CR>
USER3	MSUSER3<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>	

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example	
PS	ROOM EQ:AUDYSSEY	ROOM EQ mode direct change	PSROOM EQ:AUDYSSEY<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>	
	DELAY UP	AUDIO DELAY UP/DOWN , direct change to ***dB ***:000 to 999 by ASCII , 000=0ms, 200=200ms ---AVR5805 can be operated from 0 to 200	PSDELAY UP<CR>	
	DELAY DOWN		PSDELAY DOWN<CR>	
DELAY ***	PSDELAY 200<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	AM	TUNER BAND , MODE Select ---Band set to AM ---Band set to FM ---Tuning mode set to AUTO mode ---Tuning mode set to MANUAL mode	TMAM<CR>	
	FM		TMFM<CR>	
	AUTO		TMAUTO<CR>	*
	MANUAL		TMMANUAL<CR>	*

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

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
Z2CV	Z2FL UP	MULTI ZONE-2 CHANNEL VOLUME UP/DOWN , direct change to **dB	Z2CVFL UP<CR>
	FL DOWN	---FRONT Lch	Z2CVFL DOWN<CR>
	FL **	** : 38 to 62 by ASCII , 50=0dB	Z2CVFL 50<CR>
	FR UP		Z2CVFR UP<CR>
	FR DOWN	---FRONT Rch	Z2CVFR DOWN<CR>
	FR **	** : 38 to 62 by ASCII , 50=0dB	Z2CVFR 50<CR>
	C UP		Z2CVC UP<CR>
	C DOWN	---CENTERch	Z2CVC DOWN<CR>
	C **	** : 38 to 62 by ASCII , 50=0dB	Z2CVC 50<CR>
	SW UP	---SUBWOOFERch	Z2CVSW UP<CR>
	SW DOWN	** : 00,38 to 62 by ASCII , 50=0dB	Z2CVSW DOWN<CR>
	SW **	00=OFF	Z2CVSW 50<CR>
	SL UP		Z2CVSL UP<CR>
	SL DOWN	---SURROUND Lch	Z2CVSL DOWN<CR>
	SL **	** : 38 to 62 by ASCII , 50=0dB	Z2CVSL 50<CR>
	SR UP		Z2CVSR UP<CR>
	SR DOWN	---SURROUND Rch	Z2CVSR DOWN<CR>
	SR **	** : 38 to 62 by ASCII , 50=0dB	Z2CVSR 50<CR>
	SBL UP		Z2CVSBL UP<CR>
	SBL DOWN	---SURROUND BACK Lch (SBch 2SP)	Z2CVSBL DOWN<CR>
	SBL **	** : 38 to 62 by ASCII , 50=0dB	Z2CVSBL 50<CR>
	SBR UP	---SURROUND BACK Rch (SBch 2SP)	Z2CVSBR UP<CR>
	SBR DOWN		Z2CVSBR DOWN<CR>
	SBR **	** : 38 to 62 by ASCII , 50=0dB	Z2CVSBR 50<CR>
	SB UP	---SURROUND BACKch (SBch 1SP)	Z2CVSB UP<CR>
	SB DOWN		Z2CVSB DOWN<CR>
SB **	** : 38 to 62 by ASCII , 50=0dB	Z2CVSB 50<CR>	

Z2CV COMMAND : "*" parameter uses two or three ASCII characters. (see page4 J) section)

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
Z2	PHONO	MULTI ZONE-2 mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z2PHONO<CR>
	CDR/TAPE		Z2CDR/TAPE<CR>
	SOURCE	MULTI ZONE-2 mode cancel	Z2SOURCE<CR>
	UP	MULTI ZONE-2 VOLUME UP/DOWN , direct change to ***dB ** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN)	Z2UP<CR>
	DOWN		Z2DOWN<CR>
	**		Z280<CR>
	ON	MULTI ZONE-2 ON/OFF change	Z2ON<CR>
OFF		Z2OFF<CR>	
Z2MU	ON	ZONE2 OUTPUT MUTE ON/OFF change	Z2MUON<CR>
	OFF		Z2MUOFF<CR>
Z2SV	DVD	ZONE2 VIDEO SELECT mode set , and select source	Z2SVDVD<CR>
	VDP		Z2SVVDP<CR>
	TV		Z2SVTV<CR>
	DBS		Z2SVDBS<CR>
	VCR-1		Z2SVVCR-1<CR>
	VCR-2		Z2SVVCR-2<CR>
	VCR-3		Z2SVVCR-3<CR>
	VCR-4		Z2SVVCR-4<CR>
	V.AUX		Z2SVV.AUX<CR>
	SOURCE	ZONE2 VIDEO SELECT mode cancel	Z2SVSOURCE<CR>
Z2SD	AUTO	MULTI ZONE-2 set DIGITAL INPUT AUTO mode	Z2SDAUTO<CR>
	ANALOG	MULTI ZONE-2 set force ANALOG INPUT mode	Z2SDANALOG<CR>

Z2 **COMMAND** : "*" parameter uses two or three ASCII characters. (see page4 J) section)

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
Z2MS	STEREO	SURROUND mode set	Z2MSSTEREO<CR>
	DOLBY PRO LOGIC	All are received as "STANDARD" , the surround mode which changed return as <i>EVENT</i> .	Z2MSDOLBY PROLOGIC<CR>
	DOLBY PL2		Z2MSDOLBY PL2<CR>
	DOLBY PL2x		Z2MSDOLBY PL2X<CR>
	DOLBY DIGITAL		Z2MSDOLBY DIGITAL<CR>
	DOLBY D EX		Z2MSDOLBY D EX<CR>
	DTS NEO:6		Z2MSDTS NEO:6<CR>
	DTS SURROUND		Z2MSDTS SURROUND<CR>
	DTS ES DSCRT6.1		Z2MSDTS ES DSCRT6.1<CR>
	DTS ES MTRX6.1		Z2MSDTS ES MTRX6.1<CR>
	WIDE SCREEN		Z2MSWIDE SCREEN<CR>
	5CH STEREO	Both are received as "5CH/7CH STEREO" , the surround mode which changed return as <i>EVENT</i> .	Z2MS5CH STEREO<CR>
	7CH STEREO		Z2MS7CH STEREO<CR>
	SUPER STADIUM	---	Z2MSSUPER STADIUM<CR>
	ROCK ARENA		Z2MSROCK ARENA<CR>
	JAZZ CLUB		Z2MSJAZZ CLUB<CR>
	CLASSIC CONCERT		Z2MSCLASSIC CONCERT<CR>
	MONO MOVIE		Z2MSMONO MOVIE<CR>
	MATRIX		Z2MSMATRIX<CR>
	VIDEO GAME		Z2MSVIDEO GAME<CR>
	VIRTUAL		Z2MSVIRTUAL<CR>
	MPEG2 AAC		Z2MSMPEG2 AAC<CR>
	AAC+DOLBY EX		Z2MSAAC+DOLBY EX<CR>
	USER1	Z2MSUSER1<CR>	
USER2	Z2MSUSER2<CR>		
USER3	Z2MSUSER3<CR>		

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example	
Z2PS	TONE DEFEAT ON	PARAMETER setting	Z2PSTONE DEFEAT ON<CR>	
	TONE DEFEAT OFF	TONE DEFEAT ON/OFF	Z2PSTONE DEFEAT OFF<CR>	
	SB:MTRX ON	SURROUND BACK SP MODE set ---MTRX ON = SURR.EX ON = DSCRT ON (@THX) (@ES DSCRT)	Z2PSSB:MTRX ON<CR>	
	SB:NON MTRX		Z2PSSB:NON MTRX<CR>	
	SB:PL2xCINEMA		Z2PSSB:PL2X CINEMA<CR>	
	SB:PL2xMUSIC		Z2PSSB:PL2X MUSIC<CR>	
	SB:OFF		Z2PSSB:OFF<CR>	
	CINEMA EQ.ON		CINEMA EQ. ON/OFF	Z2PSCINEMA EQ.ON<CR>
	CINEMA EQ.OFF			Z2PSCINEMA EQ.OFF<CR>
	MODE : MUSIC	CINEMA / MUSIC / GAME / PL mode change (This parameter can change DOLBY PL2,PL2x,NEO:6 mode.) ---SB=ON:PL2x mode / SB=OFF:PL2 mode --- GAME can change DOLBY PL2 & PL2x mode --- PL can change ONLY DOLBY PL2 mode	Z2PSMODE:MUSIC<CR>	
	MODE : CINEMA		Z2PSMODE:CINEMA<CR>	
	MODE : GAME		Z2PSMODE:GAME<CR>	
	MODE : PRO LOGIC		Z2PSMODE:PRO LOGIC<CR>	
	DELAY UP	AUDIO DELAY UP/DOWN , direct change to ***dB ***:000 to 999 by ASCII , 000=0ms, 200=200ms ---AVR5805 can be operated from 0 to 200	Z2PSDELAY UP<CR>	
	DELAY DOWN		Z2PSDELAY DOWN<CR>	
DELAY ***	Z2PSDELAY 200<CR>			

The **BOLD COMMANDS** are new.

COMMAND	PARAMETER	function	example
Z3	PHONO CDR/TAPE	MULTI ZONE-3 mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z3PHONO <CR> Z3CDR/TAPE <CR>
	SOURCE	MULTI ZONE-3 mode cancel	Z3SOURCE <CR>
	UP	MULTI ZONE-3 VOLUME UP/DOWN , direct change to ***dB	Z3UP <CR>
	DOWN		Z3DOWN <CR>
	**	** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN)	Z380 <CR>
	ON	MULTI ZONE-3 ON/OFF change	Z3ON <CR>
	OFF		Z3OFF <CR>
Z3MU	ON	ZONE3 OUTPUT MUTE ON/OFF change	Z2MUON <CR>
	OFF		Z2MUOFF <CR>
Z4	PHONO CDR/TAPE	MULTI ZONE-4 mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z4PHONO <CR> Z4CDR/TAPE <CR>
	SOURCE	MULTI ZONE-4 mode cancel	Z4SOURCE <CR>
	UP	MULTI ZONE-4 VOLUME UP/DOWN , direct change to ***dB	Z4UP <CR>
	DOWN		Z4DOWN <CR>
	**	** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN)	Z480 <CR>
	ON	MULTI ZONE-4 ON/OFF change	Z4ON <CR>
	OFF		Z4OFF <CR>
Z4MU	ON	ZONE4 OUTPUT MUTE ON/OFF change	Z2MUON <CR>
	OFF		Z2MUOFF <CR>
SR	PHONO CDR/TAPE	REC SELECT mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	SRPHONO <CR> SRCDR/TAPE <CR>
	SOURCE		SRSOURCE <CR>

Z3, Z4 COMMAND : "*" parameter uses two or three ASCII characters. (see page4 J) section)

The **BOLD COMMANDS** are new.

EVENT(or RESPONSE) and PARAMETER list

<i>EVENT</i>	<i>PARAMETER</i>	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 10 = -70dB 00 = -80dB 99 = --- (MIN)	MV80<CR>	
CV	FL **	CHANNEL VOLUME change , **:00 to 62 by ASCII 62 = +12dB(MAX) 50 = 0dB 38 = -12dB(MIN) 00 = OFF (define ONLY SWch)	CVFL 50<CR>	
	FR **		CVFR 50<CR>	
	C **		CVC 50<CR>	
	SW1 **		CVSW1 50<CR>	
	SW2 **		CVSW2 50<CR>	
	LFE **		CVLFE 50<CR>	
	SLA **		CVSLA 50<CR>	
	SRA **		CVSRA 50<CR>	
	SLB **		CVSLB 50<CR>	
	SRB **		CVSRB 50<CR>	
	SBL **		(at SBch 2SP) CVSBL 50<CR>	
	SBR **		(at SBch 2SP) CVSBR 50<CR>	
	SB **		(at SBch 1SP) CVSB 50<CR>	
	EXLA **		CVEXLA 50<CR>	
	EXRA **		CVEXRA 50<CR>	
	EXLB **		CVEXLB 50<CR>	
	EXRB **		CVEXRB 50<CR>	
	EXLC **		CVEXLC 50<CR>	
EXRC **	CVEXRC 50<CR>			

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

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

The **BOLD COMMANDS** are new.

<i>EVENT</i>	<i>PARAMETER</i>	function	example	*RES.
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		SIDBS<CR>	
	VCR-1		SIVCR-1<CR>	
	VCR-2		SIVCR-2<CR>	
	VCR-3		SIVCR-3<CR>	
	VCR-4		SIVCR-4<CR>	
	V.AUX		SIV.AUX<CR>	
	CDR/TAPE		SICDR/TAPE<CR>	
DTU	SIDTU<CR>			
SV	DVD	VIDEO INPUT source change	SVDVD<CR>	
	VDP		SVVDP<CR>	
	TV		SVTV<CR>	
	DBS		SVDBS<CR>	
	VCR-1		SVVCR-1<CR>	
	VCR-2		SVVCR-2<CR>	
	VCR-3		SVVCR-3<CR>	
	VCR-4		SVVCR-4<CR>	
	V.AUX		SVV.AUX<CR>	
	SOURCE		SVSOURCE<CR>	
		VIDEO SELECT mode cancel		

The **BOLD COMMANDS** are new.

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>	
	DTS NEO:6 CINEMA		MSDTS NEO:6 C<CR>	
	DTS NEO:6 MUSIC		MSDTS NEO:6 M<CR>	
	DTS SURROUND		MSDTS SURROUND<CR>	

EVENT	PARAMETER	function	example	*RES.
MS	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		MSDOLBY H/P<CR>	
	DTS+DOLBY H/P		MSDTS+DOLBY H/P<CR>	
	PL2x C+THX		MSPL2X C+THX	
	PL2 C+THX		MSPL2 C+THX	
	PL+THX		MSPL+THX	
	NEO:6 C+THX		MSNEO:6 C+THX	
	THX5.1		MSTHX5.1<CR>	
	THX U2 CINEMA		MSTHX U2 CINEMA<CR>	
	THX MUSIC MODE		MSTHX MUSIC MODE<CR>	
	THX GAMES MODE		MSTHX GAMES MODE<CR>	
	THX6.1		MSTHX6.1<CR>	
	THX SURROUND EX		MSTHX SURROUND EX<CR>	
	WIDE SCREEN		MSWIDE SCREEN<CR>	
	5CH STEREO		MS5CH STEREO<CR>	
	7CH STEREO		MS7CH STEREO<CR>	
	9CH STEREO		MS9CH 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>	
	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>	

The **BOLD COMMANDS** are new.

<i>EVENT</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>	<i>*RES.</i>	
PS	USER1	ROOM EQ mode direct change	Z2MSUSER1<CR>		
	USER2		Z2MSUSER2<CR>		
	USER3		Z2MSUSER3<CR>		
	ROOM EQ:AUDYSSEY		PSROOM EQ:AUDYSSEY<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>		
	DELAY UP		AUDIO DELAY change, ***:000 to 999 by ASCII	PSDELAY UP<CR>	
	DELAY DOWN		---AVR5805:200=200ms (MAX)	PSDELAY DOWN<CR>	
DELAY ***	100=100ms, 000=0ms	PSDELAY 200<CR>			
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**.

The **BOLD COMMANDS** are new.

EVENT	PARAMETER	function	example	*RES.
Z2CV	FL **	MULTI ZONE-2 CHANNEL VOLUME change , ** : 00, 38 to 62 by ASCII 62 = +12dB(MAX) 50 = 0dB 38 = -12dB(MIN) 00 = OFF (define ONLY SWch) (at SBch 2SP) (at SBch 2SP) (at SBch 1SP)	Z2CVFL UP<CR>	
	FR **		Z2CVFL DOWN<CR>	
	C **		Z2CVFL 50<CR>	
	SW **		Z2CVFL UP<CR>	
	SL **		Z2CVFL DOWN<CR>	
	SR **		Z2CVFL 50<CR>	
	SBL **		Z2CVC UP<CR>	
	SBR **		Z2CVC DOWN<CR>	
	SB **		Z2CVC 50<CR>	
Z2	PHONO CDR/TAPE	MULTI ZONE-2 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z2PHONO<CR> Z2CDR/TAPE<CR>	
	SOURCE	MULTI ZONE-2 mode cancel	Z2SOURCE<CR>	
	**	MULTI ZONE-2 VOLUME change , ** : 00 to 99 by ASCII 98 = +18dB(MAX) 80 = 0dB 00 = -80dB 99 = --- (MIN)	Z280<CR>	
	ON	MULTI ZONE-2 ON/OFF change	Z2ON<CR>	
	OFF		Z2OFF<CR>	
	Z2MU	ON	ZONE2 OUTPUT MUTE ON/OFF change	Z2MUON<CR>
OFF		Z2MUOFF<CR>		
Z2SV	DVD	ZONE2 VIDEO SELECT mode set , and select source	Z2SVDVD<CR>	
	VDP		Z2SVVDP<CR>	
	TV		Z2SVTV<CR>	
	DBS		Z2SVDBS<CR>	
	VCR-1		Z2SVVCR-1<CR>	
	VCR-2		Z2SVVCR-2<CR>	
	VCR-3		Z2SVVCR-3<CR>	
	VCR-4		Z2SVVCR-4<CR>	

The **PARAMETER** of Z2, Z2CV **EVENT** : Uses two or three ASCII characters. (see page4 J) section)

The **BOLD COMMANDS** are new.

<i>EVENT</i>	<i>PARAMETER</i>	function	example	*RES.
Z2SV	V.AUX	ZONE2 VIDEO SELECT mode cancel	Z2SVV.AUX<CR>	
	SOURCE		Z2SVSOURCE<CR>	
Z2MS	STEREO	ZONE2 SURROUND mode change	Z2MSSTEREO<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		Z2MSDOLBY DIGITAL<CR>	
	DOLBY D EX		Z2MSDOLBY D EX<CR>	
	DTS NEO:6		Z2MSDTS NEO:6<CR>	
	DTS SURROUND		Z2MSDTS SURROUND<CR>	
	DTS ES DSCRT6.1		Z2MSDTS ES DSCRT6.1<CR>	
	DTS ES MTRX6.1		Z2MSDTS ES MTRX6.1<CR>	
	WIDE SCREEN		Z2MSWIDE SCREEN<CR>	
	5CH STEREO		Z2MS5CH STEREO<CR>	
	7CH STEREO		Z2MS7CH STEREO<CR>	
	SUPER STADIUM		Z2MSSUPER STADIUM<CR>	
	ROCK ARENA		Z2MSROCK ARENA<CR>	
	JAZZ CLUB		Z2MSJAZZ CLUB<CR>	
	CLASSIC CONCERT		Z2MSCLASSIC CONCERT<CR>	
	MONO MOVIE		Z2MSMONO MOVIE<CR>	
	MATRIX		Z2MSMATRIX<CR>	
VIDEO GAME	Z2MSVIDEO GAME<CR>			
VIRTUAL	Z2MSVIRTUAL<CR>			
USER1	Z2MSUSER1<CR>			
USER2	Z2MSUSER2<CR>			
USER3	Z2MSUSER3<CR>			

The **BOLD COMMANDS** are new.

<i>EVENT</i>	<i>PARAMETER</i>	function	example	*RES.
Z2PS	DELAY UP	AUDIO DELAY change, ***:000 to 999 by ASCII	Z2PSDELAY UP<CR>	
	DELAY DOWN	---AVR5805 : 200=200ms (MAX)	Z2PSDELAY DOWN<CR>	
	DELAY ***	100=100ms, 000=0ms	Z2PSDELAY 200<CR>	
Z3	PHONO CDR/TAPE	MULTI ZONE-3 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z3PHONO<CR> Z3CDR/TAPE<CR>	
	SOURCE	MULTI ZONE-3 mode cancel	Z3SOURCE<CR>	
	**	MULTI ZONE-3 VOLUME change , **:00 to 99 by ASCII 98 = +18dB(MAX) 80 = 0dB 00 = -80dB 99 = --- (MIN)	Z380<CR>	
	ON	MULTI ZONE-3 ON/OFF change	Z3ON<CR>	
	OFF		Z3OFF<CR>	
Z3MU	ON	ZONE3 OUTPUT MUTE ON/OFF change	Z2MUON<CR>	
	OFF		Z2MUOFF<CR>	
Z4	PHONO CDR/TAPE	MULTI ZONE-4 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z4PHONO<CR> Z4CDR/TAPE<CR>	
	SOURCE	MULTI ZONE-4 mode cancel	Z4SOURCE<CR>	
	**	MULTI ZONE-4 VOLUME change , **:00 to 99 by ASCII 98 = +18dB(MAX) 80 = 0dB 00 = -80dB 99 = --- (MIN)	Z480<CR>	
	ON	MULTI ZONE-4 ON/OFF change	Z4ON<CR>	
	OFF		Z4OFF<CR>	
Z4MU	ON	ZONE4 OUTPUT MUTE ON/OFF change	Z2MUON<CR>	
	OFF		Z2MUOFF<CR>	
SR	PHONO CDR/TAPE	REC SELECT source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	SRPHONO<CR> SRCDR/TAPE<CR>	
	SOURCE	REC SELECT mode cancel	SRSOURCE<CR>	

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

The **PARAMETER** of Z3, Z4 **EVENT** : Uses two or three ASCII characters. (see page4 J) section)