

Esoteric RS-232C Interface

For models:

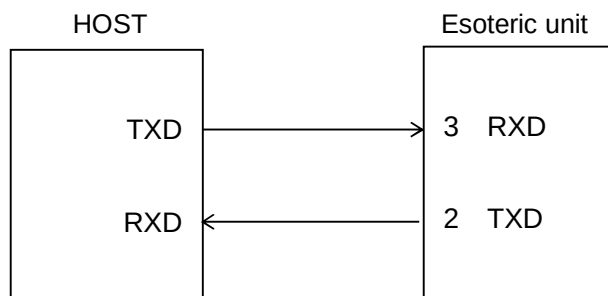
Grandioso C1X/C1Xsolo/E1

K-01XD/K-03XD/K-05XD/N-05XD

F-01/F-02

1. Specification of RS-232C Connection

1-1. Hardware connection

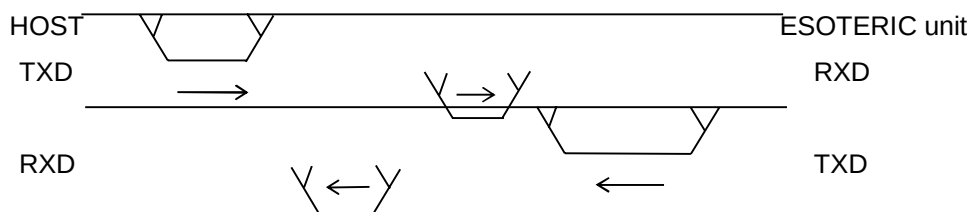


Esoteric RS232 pin assignment: RXD : 3
TXD : 2

1-2. Specification of communication

Mode : Asynchronous Full-duplex
Transfer Rate : 9600bps
Data length : 8-bit
Stop bit : 1-bit
Parity : non-parity
Flow control : none

1-3. Data transfer



1-4. Command

There are two kinds of commands. The first is the "NORMAL" command which requests processing, and the second is the "REQUEST" command which requests status. ASCII code should be used for these commands. (case sensitive)

A start character '@' and an end character CR (0x0D) should be added to both the send and return status as shown below.

Start Character :	@ (0x40)	
<CR> :	CR (0x0D)	
<SP>:	Space character (0x20)	
Command Sample :	@?INPUT<CR>	(Request Input Status)
Feedback Sample :	@INPUT<SP>DISC<CR>	(Input = Disc)

The following control codes are used for ACK or NAK.

<ACK> (Receive success):	0x06
<NAK> (Receive failed) :	0x15

1-4-1. Normal Command

This is a command that requests processing.

If the ESOTERIC unit receives the command, it returns either ACK (received OK) or NAK (failed to receive).

The unit will return NAK, if it receives non-specified commands or <CR> without '@'.

example: When sending command PLAY to the ESOTERIC unit.

Sending command from the host

"@KEY<SP>01<CR>"

After processing the command, the ESOTERIC unit will return

0x06 (ACK : command received successfully)

or

0x15 (NAK : failed to receive the command)

1-4-2. Request Command

This is a command that requests status of the ESOTERIC unit.

It will return NAK, if it receives non-specified commands or <CR> without '@'.

Example: requesting media status to ESOTERIC unit.

Commands from the host

"@?MEDIA<CR>"

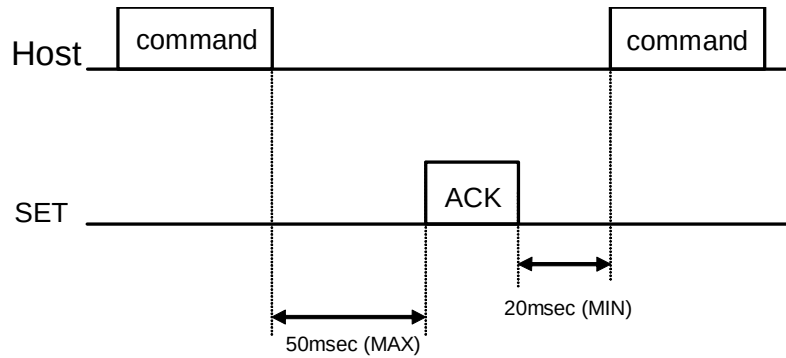
Return status from the ESOTERIC unit, after received request command

"@MEDIA<SP>CD<SP>15<SP>64<SP>08<CR>"

It means the current media is "CD disc, total 15tracks, total time 64min 08sec".

1-4-2-1. Operation suggestions

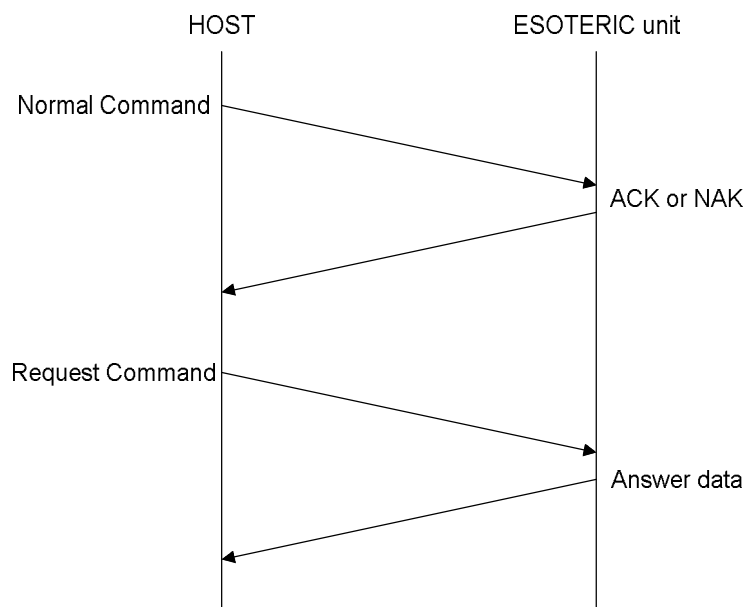
Delay more than 20ms when sending next command after receiving ACK from ESOTERIC unit.



Handshake timing

1-4-3. Handshake Flowchart

Handshake operation (Normal, Request Command)



1-5. Command List

1-5-1. Normal commands

1-5-1-1. Command for Common

No.	Item		Command
1	POWER	ON	@POWER<SP>ON<CR>
2	POWER	OFF	@POWER<SP>OFF<CR>
3	KEY	DIMMER	@KEY<SP>5A<CR>

1-5-1-2. Command for CD Player

No.	Item		Command
1	KEY	TRAY	@KEY<SP>00<CR>
2	KEY	PLAY	@KEY<SP>01<CR>
3	KEY	PAUSE	@KEY<SP>02<CR>
4	KEY	STOP	@KEY<SP>03<CR>
5	KEY	I<<	@KEY<SP>0B<CR>
6	KEY	>>I	@KEY<SP>0C<CR>
7	KEY	<<	@KEY<SP>40<CR>
8	KEY	>>	@KEY<SP>41<CR>
9	KEY	0	@KEY<SP>04<CR>
10	KEY	1	@KEY<SP>05<CR>
11	KEY	2	@KEY<SP>06<CR>
12	KEY	3	@KEY<SP>07<CR>
13	KEY	4	@KEY<SP>0D<CR>
14	KEY	5	@KEY<SP>0E<CR>
15	KEY	6	@KEY<SP>0F<CR>
16	KEY	7	@KEY<SP>15<CR>
17	KEY	8	@KEY<SP>16<CR>
18	KEY	9	@KEY<SP>17<CR>
19	KEY	+10	@KEY<SP>4F<CR>
20	KEY	CLEAR	@KEY<SP>4B<CR>
21	KEY	PLAY MODE	@KEY<SP>1E<CR>
22	KEY	REPEAT	@KEY<SP>47<CR>
23	KEY	SHUFFLE	@KEY<SP>1F<CR>
24	KEY	PLAY AREA	@KEY<SP>49<CR>
25	KEY	MODE	@KEY<SP>1D<CR>
26	KEY	DISPLAY	@KEY<SP>42<CR>

1-5-1-3. Command for AMP

No.	Item		Command
1	KEY	INPUT-	@KEY<SP>43<CR>
2	KEY	INPUT+	@KEY<SP>44<CR>
3	KEY	VOLUME-	@KEY<SP>13<CR>
4	KEY	VOLUME+	@KEY<SP>12<CR>
5	KEY	MUTE	@KEY<SP>1C<CR>
6	KEY	SETUP/MENU	@KEY<SP>14<CR>
7	KEY	ESL-A	@KEY<SP>32<CR>
8	KEY	XLR	@KEY<SP>33<CR>
9	KEY	RCA	@KEY<SP>34<CR>
10	KEY	PHONO	@KEY<SP>35<CR>
11	KEY	OPTION	@KEY<SP>36CR>
12	KEY	OUTPUT	@KEY<SP>37<CR>
13	VOLUME	0~99.9	@VOLUME<SP>23.4<CR> *C1X: 0~99.9 *N-05XD: 0~100.0 (0.5step)
14	INPUT	INPUT direct select	@INPUT<SP>XLR1<CR> *C1X/C1Xsolo: XLR1, XLR2, XLR3, ESLA1, ESLA2, ESLA3, RCA1, RCA2

1-5-1-4. Command for Network/DAC

No.	Item		Command
1	KEY	INPUT+	@KEY<SP>20<CR>
2	KEY	MENU	@KEY<SP>21<CR>
3	KEY	<	@KEY<SP>22<CR>
4	KEY	>	@KEY<SP>23<CR>
5	KEY	I<<	@KEY<SP>24<CR>
6	KEY	>>I	@KEY<SP>25<CR>
7	KEY	PLAY	@KEY<SP>26<CR>
8	KEY	PAUSE	@KEY<SP>27<CR>
9	KEY	STOP	@KEY<SP>28<CR>
10	KEY	REPEAT	@KEY<SP>29<CR>
11	KEY	SHUFFLE	@KEY<SP>2A<CR>

1-5-1-5. Command for Phono EQ

No.	Item		Command
1	KEY	SUBSONIC	@KEY<SP>60<CR>
2	KEY	MONO	@KEY<SP>61<CR>
3	KEY	OUTPUT	@KEY<SP>62<CR>
4	KEY	LOAD PRESET	@KEY<SP>63<CR>
5	KEY	LOW LIMIT	@KEY<SP>69<CR>
6	KEY	TURNOVER	@KEY<SP>6B<CR>
7	KEY	ROLL OFF	@KEY<SP>6A<CR>
8	KEY	EQ-	@KEY<SP>6D<CR>
9	KEY	EQ+	@KEY<SP>6C<CR>
10	KEY	XLR	@KEY<SP>6E<CR>
11	KEY	RCA	@KEY<SP>6F<CR>
12	KEY	OPT	@KEY<SP>70<CR>
13	KEY	C.GAIN-	@KEY<SP>72<CR>
14	KEY	C.GAIN+	@KEY<SP>71<CR>
15	KEY	MM/MC	@KEY<SP>73<CR>
16	KEY	CAP/IMP	@KEY<SP>74<CR>
17	KEY	LED OFF	@KEY<SP>75<CR>
18	KEY	O.GAIN	@KEY<SP>76<CR>
19	KEY	GAIN-	@KEY<SP>78<CR>
20	KEY	GAIN+	@KEY<SP>77<CR>
21	KEY	DEMAG	@KEY<SP>79<CR>
22	INPUT	INPUT direct select	@INPUT<SP>XLR1<CR> XLR1, XLR2, XLR3, RCA, OPT

1-5-2. Request commands

1-5-2-1. Request for Common

No.	Item	Command	Answer
1	Input	@?INPUT<CR>	@INPUT<SP>DISC<CR> There are "ESLA", "XLR", "RCA" and so on.
2	Analog OUTPUT	@?AOUT<CR>	@AOUT<SP>SPEAKER<CR> There are "HP", "XLR2", "ESLA", "RCA" and so on.
3	Digital OUTPUT	@?DOUT<CR>	@DOUT<SP>XLR<CR> There are "ESLINK", "XLR", "RCA", "OPT" and so on. The values are expressed in STEP.

1-5-2-2. Request for CD Player

No.	Item	Command	Answer
1	Media	@?MEDIA<CR>	@MEDIA<SP>SACD<SP>12<SP>34<SP>56<CR> It means "Media=SACD", "total track=12", "total time=34m56s"
2	Play Status	@?PSTS<CR>	@PSTS<SP>PLAY<SP>3<SP>1<SP>23<SP>TE<CR> It means "Playing 3tr 1m 23s Track elapsed time". TE: Track Elapsed TR: Track Remain DE: Disc Elapsed DR: Disc Remain
3	Play Mode	@?PMODE<CR>	@PMODE<SP>CONTINUE<CR> There are "CONTINUE", "PGM" and "SHUFFLE".
4	Repeat	@?REPEAT<CR>	@REPEAT<SP>ALL<CR> There are "OFF", "ALL", "1".
5	Upconv	@?UPCONV<CR>	@UPCONV<SP>OFF<CR> There are "OFF", "2fs", "4fs", "8fs", "16fs" and "DSD".
6	Fs	@?FS<CR>	@FS<SP>44.1kHz<CR> This is sampling frequency of input source.
8	MQA	@?MQA<CR>	@MQA<SP>MQA.<SP>192kHz<CR> There are "NON", "MQA", "MQA." and "MQB".

1-5-2-3. Request for Network/DAC

No.	Item	Command	Answer
1	Play Status	@?PSTS<CR>	@PSTS<SP>PLAY<SP>3<SP>1<SP>23<SP>TE<CR> It means "Playing 3tr 1m 23s Track elapsed time". TE: Track Elapsed TR: Track Remain DE: Disc Elapsed DR: Disc Remain
2	Play Mode	@?PMODE<CR>	@PMODE<SP>CONTINUE<CR> There are "CONTINUE", "PGM" and "SHUFFLE".
3	Repeat	@?REPEAT<CR>	@REPEAT<SP>ALL<CR> There are "OFF", "ALL", "1".
4	Upconv	@?UPCONV<CR>	@UPCONV<SP>OFF<CR> There are "OFF", "2fs", "4fs", "8fs", "16fs" and "DSD".
5	Fs	@?FS<CR>	@FS<SP>44.1kHz<CR> This is sampling frequency of input source.
6	CODEC	@?CODEC<CR>	@CODEC<SP>FLAC<CR> There are "WAV", "FLAC", "ALAC", "MP3", "AAC" and so on.
7	MQA	@?MQA<CR>	@MQA<SP>MQA.<SP>192kHz<CR> There are "NON", "MQA", "MQA." and "MQB".
8	Volume	@?VOLUME<CR>	@VOLUME<SP>23.5<CR> The values are expressed in STEP.

1-5-2-4. Request for AMP

No.	Item	Command	Answer
1	Volume	@?VOLUME<CR>	@VOLUME<SP>23.4<CR> The values are expressed in STEP.

1-5-2-5. Request for PHONO EQ

No.	Item	Command	Answer
1	Output	@?OUTPUT<CR>	@OUTPUT<SP>XLR1<CR> There are "ESL-A", "XLR" and "RCA".
2	EQ	@?EQ<CR>	@EQ<SP>RIAA<CR> There are "RIAA", "Columbia", "Decca", and so on.
	Gain	@?GAIN<CR>	@GAIN<SP>-6dB<CR> There are "-6dB", "-4dB", "-2dB", "0dB", "+2dB", "+4dB".
	C.Gain	@?CGAIN<CR>	@CGAIN<SP>-9dB<CR> There are "-9dB", "-6dB", "-3dB", and "0dB".

2. Revision history

2-1. Rev1.0 to Rev1.1

- For models
“Grandioso C1X” has been added.
- Normal Command 31 “VOLUME-”
Changing command code “12” to “13”.
- Normal Command 32 “VOLUME+”
Changing command code “13” to “12”.
- Normal Command 34 “VOLUME”
Changing parameter conditions. The values are compatible with STEP expressions only.
- Request command 12 “VOLUME”
Changing parameter conditions. The values are compatible with STEP expressions only.

2-2. Rev1.1 to Rev1.2

- For models
“N-05XD” has been added.
- Normal Command 34 “VOLUME”
Case of “N-05XD” has been added.

2-3. Rev1.2 to Rev1.3

- For models
“Grandioso C1Xsolo” has been added.
“K-05XD” has been added.
- Normal Command 44 “INPUT” has been added.

2-4. Rev1.3 to Rev1.4

- For models
“F-01, F-02” have been added.
- The command lists have been renewed.
- The Command “SHUFFLE” for CD Player has been added.
- The Command “REPEAT, SHUFFLE” for Network Player have been added.
- The Command “ESL-A, XLR, RCA, PHONO, OPTION, OUTPUT” for AMP have been added.

2-5. Rev1.4 to Rev1.5

- For models
“Grandioso E1” have been added.
- The command lists have been renewed.
- The Commands for PHONO EQ have been added.
- The Requests for PHONO EQ have been added.