Audio Research Corporation
REF 6 RS-232 Interface Commands
Document Version 0.1

The REF 6 can be controlled via an RS-232 interface. The connector is a female DB9 with Pin 2 TX out of the REF 6, Pin 3 RX into the REF 6, and Pin 5 ground. The serial settings are 9600 baud, 8 data bits, 1 stop bit, no parity and no handshaking.

All commands are shown below. The unit echoes back all characters as they are received. A command line is terminated with a line feed (0x0A). Carriage returns may be present (0x0D) and are ignored. Commands that take variable text or numerical values as a parameter are shown as <value>. The optional entries are described in the column ACTION DESCRIPTION. Commands ending in a question mark are status inquiries; they will return the current value of the requested item.

If a command is accepted the response will be ACK --> along with either an echo of the request or the current value.

If a command is not accepted the response will be NACK-> along with an echo of the request.

All responses are terminated with carriage return and linefeed (0x0D 0x0A).

The response may be multiline for some status requests.

After the POWER ON command is issued the unit will be in warm up. During this time the unit will be muted. If a MUTE OFF command is received during this time the response will be ACK--> MUTE ON. The REF 6 will remember the MUTE OFF command until the warm up time is over, at that time it will transition to the Mute Off state.

When the unit is in the POWER OFF mode some commands will return NACK-> as they cannot be performed when the unit is off.

As the input buffer is small commands should only be sent one at a time.

Below is the table of all commands:

RS-232 COMMAND	Action Description
POWER ON	Turns on the unit
POWER OFF	Turns off the unit
POWER TOGGLE	Toggles the power state
MUTE ON	Turns on the mute
MUTE OFF	Turns off the mute
MUTE TOGGLE	Toggles the mute state
INVERT ON	Turns on invert
INVERT OFF	Turns off invert
INVERT TOGGLE	Toggles invert
MONO ON	Turns On mono mode
MONO OFF	Turns off mono mode
MONO TOGGLE	Toggles mono mode
VOLUME UP	Increases the volume level one step
VOLUME DOWN	Decreases the volume level one step
VOLUME SET <value>	Set the volume level to <VALUE> : 0 is MUTE, 103 is max volume
BALANCE RIGHT	Moves the balance setting one step right
BALANCE LEFT	Moves the balance setting one step left
BALANCE SET <value>	Set the balance to <value> : -22 is max. left, 0 is even balance , 22 is max right
DISPLAY UP	Increases the display brightness by one level.
DISPLAY DOWN	Decreases the display brightness by one level.
DISPLAY SET <value>	Set the display to <value> 1 is dimmest, 7 is brightest
DISPLAY DIM	Sets the display brightness level to 1
DISPLAY NORMAL	Sets the display brightness level to 5
INPUT UP	Moves one step forward through the input loop
INPUT DOWN	Moves one step backward through the input loop
INPUT SET <value>	Directly selects the input specified (one of these eight: BAL1, BAL2, BAL3, BAL4, SE1, SE2, SE3, SE4)
PROCESSOR OFF	Turns off processor mode
PROCESSOR SET <value.	Sets the processor mode for input specified (one of these eight: BAL1,BAL2, BAL3, BAL4,SE1,SE2,SE3,SE4)
MENU	Press the menu button
ENTER	Press the enter button
SET FACTORY DEFAULTS	Restores system settings to the factory default values
STATUS ALL ?	Returns the status of: Power,Input, Mute, Volume, Balance, Mono, Invert, Processor and Display
POWER ?	Returns the power state
MUTE ?	Returns the mute state
INVERT ?	Returns the invert state
INPUT ?	Returns the current input selection
MONO ?	Returns the mono mode
BALANCE ?	Returns the balance setting
VOLUME ?	Returns the volume level
DISPLAY ?	Returns the display brightness setting
PROCESSOR ?	Returns the processor state
VERSION ?	Returns the software version number

EXAMPLES OF RS-232 COMMUNICATION

Sent on initial AC power application to unit:

```
REF 6 Power On Reset
Display Software Version X.XX
STATUS ALL
POWER OFF
INPUT BAL1
MUTE ON
VOLUME 0
BALANCE 0
MONO OFF
INVERT OFF
PROCESSOR OFF
DISPLAY 5
```

SYNTAX of some commands and responses:

```
POWER ?
ACK--> POWER ON

INPUT ?
ACK--> INPUT BAL1

VOLUME SET 20
ACK--> VOLUME 20
```

An Invalid request, no space between ALL and ?:

```
STATUS ALL?
NACK-> STATUS ALL?
```

Multiline responses:

```
STATUS ALL ?
ACK--> STATUS ALL
POWER OFF
INPUT BAL1
MUTE ON
VOLUME 0
BALANCE 0
MONO OFF
INVERT OFF
PROCESSOR OFF
DISPLAY 4
```

Change History : ***0.1 initial development release***