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## **Protocol for RS232 Controlled Plus Series Amplifiers with Speaker Verification**

On power up:

Sets Baud rate to 9600.

Sets volume to 100 percent.

Waits for volume changes.

All communications with the amplifier will be 2 bytes:

A byte can take a value from 0 to 255

(All numbers in this file are Decimal)

First byte will be new volume setting

Left channel (An example would be 55)

(Minimum setting 0. Maximum setting 99.)

Right channel (An example would be 155.)

(Minimum setting 128. Maximum setting 227.)

(The setting for the right channel is 0 to 99 + 128.)

Or first byte will be a Command.

An example: 125 is request for current volume settings.

126 is mute command.

127 is unmute command.

Second byte will be complement of first (Bytes should total 255).

If the bytes do not total 255 then two bytes are sent back.

The first byte is "E" and second is the error code.

(The amplifier will return "E2")

If first byte is not a recognized command or a valid volume setting then an error message is returned (See above). ("E1")

All replies from amp will be 2 bytes

Note: Control program should wait for reply from amp before sending new commands.

If no error the bytes will be returned after the operation is completed.

Bytes will be in reverse order (complement + new volume).

Except command 125

(Amp will return current volume left + complement)

and then (current volume right + complement).

If second byte is not received in approximately 1 second after the first byte an error message is sent and amp goes back to waiting for the first byte.

Because the channels can be controlled separately the controlling software can be programmed to have:

1 volume control that controls both channels.

Or 2 volume controls (1 right 1 left).

Or 1 pan control and 1 volume control.

Or 3 controls (1 right 1 left and 1 master).

Or whatever the customer wants.