

## Generic Amplifier File

Generic amplifier configuration files are used to configure the EMC32 amplifier driver in order to enable it to remotely control an amplifier via its IEEE bus interface for which no dedicated driver exists.

An example file DemoAmpl.DeviceConfiguration is available from the EMC32 installation CD-ROM. Please refer to it or to the listing below for further clarification of the format specifications.

### Listing of DemoAmpl.DeviceConfiguration can be found in GenericAmplifierFileListing.pdf

An amplifier configuration file must conform to the following basic formal rules:

- The file shall be written in ASCII text format.
- It must be located in the \Execute\Configuration subfolder of the EMC32 main installation folder.
- Its name must be <xxx>.DeviceConfiguration, where <xxx> stands for an arbitrary descriptive name.
- Its contents shall conform to the syntax of Windows initialization files (extension .ini), that is, all contents shall be arranged in sections, each section containing an arbitrary number of lines, each line being composed by an entry string followed by a '=' character and the data string associated to the entry.
- Comment lines are allowed at any place throughout the file and must start with a ';' character.

The following sections and entries in the file are mandatory:

- Section FileInfo. This section identifies a file for EMC32. If not available, EMC32 will refuse to open the file. For the contents of this section please refer to the demo file printout above.
- Section General. This section must contain at least the line "Driver=GenericAmplifier". This line will identify the file as a configuration file for a generic amplifier. If this line is not present, the file will not be displayed in the file selection box for generic amplifier files in the Amplifier Properties dialog.
- Section Standby. This section must contain at least one line "Command=<cmd>", where <cmd> stands for the IEEE bus command for setting the amplifier in standby mode (for switching off the high voltage for amplification). Without a suitable command, the file will not be accepted.
- Section Operate. This section must contain at least one line "Command=<cmd>", where <cmd> stands for the IEEE bus command for setting the amplifier in operate mode (for switching on the high voltage for amplification). Without a suitable command, the file will not be accepted.

The rest of the file's content is optional:

- Section IEEEBus. Contains one line "TerminationCharacter=<i>" to set the termination character for IEEE communication. <i> stands for an integer according to the following meaning:

i = 1: Termination character is a Carriage Return character (hexadecimal 0D)

i = 2: Termination character is a Line Feed character (hexadecimal 0A). This is the default if the line is not present.

i = 3: All strings are terminated with a CR and a LF character in sequence.

- Sections Off, On, Standby , Operate, Reset:

Each of these sections may contain a line "Command=<cmd>" to define the command to set the amplifier in the corresponding state.

Additionally, each section may contain a line "WaitTime=<number>" where <number> stands for a delay time in seconds. EMC32 will wait for this time after sending the command, in order to allow the amplifier to change state and settle. Default times are always 0 seconds.

The meaning of these states and the possible transitions between them are shown in the following table.

Off	Amplifier supply voltage is turned off. Device is not operational.	Off -> On: Command in section [On]
On	Amplifier supply voltage has been turned on. Device is warming up and will automatically go to Standby when finished.	No state transitions possible
Standby	Amplifier has warmed up. High voltage for amplifying operation is switched off.	Standby -> Off: Command in section [Off]  Standby -> Operate: Command in section [Operate]
Operate	Amplifier is amplifying the RF signal at its input.	Operate -> Standby: Command in section [Standby]
Fault	Some fault condition has appeared.	Fault -> Off / On / Standby: Command in section [Reset] depending on the fault and the amplifier

- **Section GetStatus.**

This section contains the strings for querying the amplifier's state. It contains one line "Command=<cmd>", where <cmd> stands for the IEEE state query string.

Additionally, it may contain one line for each of the operating states (see table above): the amplifier shall return these strings when being in this state. Any string returned from the amplifier which does not match one of the strings defined here will be interpreted as fault condition