eRotor

Configuration guide

Technical descriptions and software tool

Contens

eRotor - configuration

Electronic siren eRotor can be widely configured thus adjusting it to actual requirements. eRotor siren has DSP processor which replays audiof iles stored on standard MMC memory card. Using computer it is easy to save any audio files to MMC card. DSP processor can process the following audio files:

- MPEG 1 & 2 audio layer III (CBR +VBR +ABR);
- WMA 4.0/4.1/7/8/9 all profiles (5-384kbps);
- WAV (PCM + IMA ADPCM);
- General MIDI / SP-MIDI files

eRotor is configured using special PC software. It is possible to choose the audio file names on the MMC card and assign them the captions which are displayed on the siren LCD while replaying them. Siren can be also configured for remote control. It also possible to assign a serial link commands to eRotor ("sx commands" and "sx alarms") and to assign the binary input control (external button).

Following chapters describes the remote control: serial link protocole definitions and binary control configuration. Next chapters describes all the variables which can be configured in eRotor.

eRotor - conectors

Connector: J8

COM MB

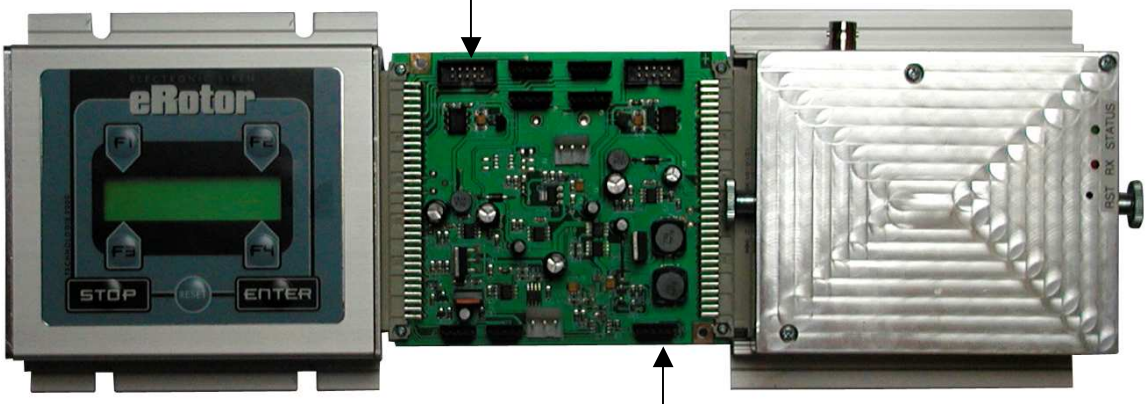
1		2	GND
3	MBCOM1TX	4	GND
5		6	GND
7	MBCOM1RX	8	GND
9		10	GND

Connector: J10

BINARY IN/OUT

1	AK_TL1
2	GND
3	GND
4	AK_TL2
5	OUT1
6	OUT2

J8: COM RS232 (programming and controls)



J10: Binary inputs and outputs

eRotor remote control description

Siren can be controlled remotely by these means:

- Serial port (RS232, 9600 baud, 8N1)
- CAN bus
- Binary inputs

Serial port – protocol definitions

Siren can be controlled by serial port with following settings: 9600 baud, 8bit, no parity, 1 stop bit.

Siren is activated by character sequence starting with '?'. If it is parsed successfully, siren responds by same string, only with '+' at the beginning.

There are two kind of sequences: Sx commands and sx alarms. They are described below with extended Backus-Naur form.

Sx commands starts with '?' character followed by twice repeated number of the command (0-6) and end with '%' character. They have the following syntax:

```
cmd := "00" | "11" | "33" | "44" | "55" | "66"
sxc := "?", cmd, "%"
```

Sx command ?44% is hardcoded for stop action, others are user configurable.

Note that 22 is reserved for sx alarms.

Sx alarms starts with "?22;" string followed by twice repeated number of alarms, semicolon and specific alarm number, each repeated twice. They have following syntax:

```
count := "11" | "22" | "33" | "44"
alarm := "00" | ... | "99" | "AA" | .. | "ZZ"
sxa := "?22;", count, ";", alarm, [alarm, [alarm, [alarm]]], "%"
```

Count has to be the number of alarms in the Sx alarm directive.

For example ?22;33;88AA99% executes following 3 alarms: 88, AA and 99.

All sx alarms are user configurable.

Inputs

eRotor can also be controlled by two binary inputs (A1 and A2). Different actions for both opening and closing the input contact can be set up. Close the contact (START) by short-circuiting the contact braces. That is by connecting the input brace with ground (0V). Opening the contact (STOP) is done by disconnecting the contact braces.

Inputs are protected from oscillation by software, so opening/closing of the contact has to be longer than 100 milliseconds.

Using the configuration tool

Siren eRotor is configured using special PC software, which allows to save and load the variables using RS232 serial link. Variables can be saved to PC disk. It is also possible to directly control the siren using this software. Configuration SW is designed for MS Windows and Linux systems.

Menu items

Read

Read configuration from siren connected to serial port

Write

Write configuration to siren connected to serial port

Load

Read siren configuration from YAML file on PC

Save

Write siren configuration to YAML file on PC

Direct control

It is possible to send all configured sx commands and sx alarms directly to siren via serial port. Sx commands and sx alarms are described in detail in Serial port section.

Generic settings

Siren type

Siren type is specified by the number of amplifiers and drivers. This setting is important for siren test, because it used to diagnose amplifier and driver failures.

If you change type of siren, it is necessary to perform new calibration.

FM Radio

Sets the frequency of built-in radio receiver.

Output volume

Output level of the basic eRotor unit. When used with PA08 amplifiers the output level should not exceed -6dB. With higher setting you may damage drivers. Although PA08 amplifiers have temperature protection, they may get damaged too.

When eRotor is used as a general-purpose source of audio signal, it is possible to set the output volume in full scale as needed.

MMC files

All files need to be stored in root directory of the MMC Card. They are checked on siren start, so it is advisable to keep the number of files small for fast startup. If any file is not found, siren is restarted.

Filename

Filename is uppercase and in DOS 8.3 notation, unused characters from name and extensions are padded with spaces.

LCD Title

Text that is shown on siren LCD when playing this file.

Actions (Sx commands, Sx alarms, Inputs)

Sx commands and sx alarms are described in Serial port section.

Siren action

Action to do when specified command/alarm/input is activated.

None

No action is performed

Reset

Restart the siren

Test

Performs test of siren, same as test from siren panel. Checks amplifiers, drivers, power, battery state etc. Result is shown on LCD panel.

Play file

Play file from MMC files table

AUX input

Play signal from auxiliary input

Stop

Stop performing any actions with same or lower priority

Parameter

Parameter depends on selected action:

Play file

File to play, from MMC files table

AUX input

Which input to play

For other actions parameter is ignored.

Priority

Priority of given action in queue. It is recommended to leave default values which are:

Action	Priority
None	0
Reset	200
Test	20
Play file	20
AUX input	20
Stop	100

By assigning higher priority to binary inputs or sx commands/alarms you can choose which can be interrupted by other. Stop command always needs higher priority than the corresponding command you want to stop.

Outputs

Siren is equipped with two output relays, each of them can be configured to react to different condition.

Trigger

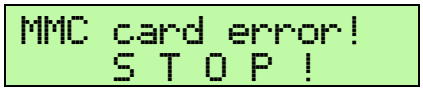
On which action generate impulse on the relay. This can be one of sx alarms or every siren activation.

Duration

Length in seconds of the impulse generated on the relay

MMC card check

Siren performs MMC card files check during startup (reset). All files listed in configuration SW (MMC files tab) has to be present in the main directory (root) of the MMC card, if some of the listed files are not found then the check is stopped and following message will display:



This message is displayed for several seconds and then the siren automatically reset itself. During this period it is possible to possible to skip the MMC card check or to initiate the default configuration of the eRotor siren. For activation of these functions it is necessary to press two keys and hold them until the system activates itself.

Note: These functions are available only for firmware versions 2.16 and higher.

F2+F3 MMC card check skip

If the buttons **"F2"** and **"F3"** are pressed during the error message then the check of the card immediately stops. The message „**Test aborted!**“ will be displayed on LCD and eRotor will start normally. In this situation it is possible to perform any functions of the siren. Mainly it is possible to connect the siren to PC with configuration SW and change the siren configuration.

If any request occurs for audio files which are missing on the MMC card, only error message on the LCD will be displayed.

In next reset the system will perform MMC card check again, so if the problem was not solved the error message will be displayed again and eRotor will reset itself.

F1+F4 Default configuration restoration

If the buttons **"F1"** and **"F4"** are pressed during the error message then system will rewrite all values to default configuration. The message „**Default config.**“ will be displayed and siren reset itself after. Standard configuration will rewrite all variables to default settings.

List of files on the MMC card required for default configuration:

"1KATASTR.WAV"	"DMSG.WAV"	"UMSG.WAV"
"2VYSTRAH.WAV"	"EMSG.WAV"	"VMSG.WAV"
"3ZATOPA.WAV"	"FMSG.WAV"	"XMSG.WAV"
"4POZARNI.WAV"	"GMSG.WAV"	"YMSG.WAV"
"8GONG1.WAV"	"PMSG.WAV"	"TST_15K.WAV"
"9GONG2.WAV"	"QMSG.WAV"	"TST1K0DB.WAV"
"AMSG.WAV"	"RMSG.WAV"	"TST_10K.WAV"
"BMSG.WAV"	"SMSG.WAV"	"TST_440.WAV"
"CMSG.WAV"	"TMSG.WAV"	