General

The RME series of digital audio interfaces are highly sophisticated devices of professional caliber. While their large range of built-in functions can seem overwhelming, the high quality of the result warrants the extra effort to learn. The interfaces contain not only A/D-D/A converters, but also a complete mixing desk and a signal router, with which you can connect many signal sources and destinations at the same time. An RME interface can be used e.g. for setting up loudspeaker and/or headphone feeds to the subject, establishing a talkback from a control room, mixing in self-monitoring into headphones, bringing in a synthesizer or background accompaniment, to name a few examples. This guide gives some suggestions for getting started. To use the full potential of your device, be sure to study the RME User Guide carefully.

Configuring the hardware

Connect your Fireface to the computer and turn it on. In the on-screen task bar, find the icon shown at left, and click it. (In Windows 10, this icon should appear when you click the ^ symbol in the Task Bar.)

This opens a dialog box with hardware settings for the device. Find the field **Sample Rate** and select 44100 Hz. For **Clock Source**, select **Internal**. Find also the field **DSP** and *un*check the box **EQ+D for Record**. Then choose **OK**.

Controlling the Fireface

All functions of the interface are controlled through the software app TotalMix FX. To start this app, find the (FX) icon and click it. (In Windows 10, this icon should appear when you click the ^ symbol in the Task Bar.) The app will start only if the device is attached and swithed on.

Once TotalMix FX is running, you can reach it through this icon in the Task Bar.

Saving your setups

The TotalMix software has a number of options for saving and restoring its many settings. Please read the manual carefully on this point, because it can save you a lot of time. Briefly,

- There are eight Snapshot memories, each of which contains all settings and layout. Save/Load Snapshot... saves/loads one snapshot file.
- Save/Load Workspace... saves/loads the entire configuration of the device and of TotalMix itself, in a workspace file. This includes all Snapshots currently in the Workspace. Loading a Workspace file will overwrite the active Snapshots with the ones in the Workspace.
- The Fireface device has an internal flash memory that stores the most recently used Workspace, even when the device is switched off. (This can make it possible to use the device stand-alone, without a computer.) When you connect the Fireface to a computer, TotalMix will ask if you want to use the settings stored in the device, or replace them with the settings in the current TotalMix workspace.

When you have finished setting up the device, always choose File | Save Snapshot or File | Save Workspace. If one configuration is enough for your project, a Snapshot will suffice. If your project uses up to eight Snapshots, save them all in one Workspace file.

Setting up the microphone and EGG signals

Models Fireface 400, UC, UCX, and Babyface

These models all have their microphone preamps on inputs 1 and 2. This is what FonaDyn expects. Connect your microphone to input 1 using an XLR connector, and your EGG device to input 2 using a ¼" jack plug connector.

In TotalMix, for each channel strip, there are three extra control panels, which appear when you press the corresponding button: Settings (spanner icon), Equalizer (EQ) and Dynamics (D). Now, for the channel Mic 1,

- Turn the pan knob fully left (L100)
- Press the spanner to open the Settings.
- Turn *off* the Stereo button
- If the microphone requires phantom power (+48v), then turn on the button 48V.
- Set the Gain control knob to about -12 dB
- Check that AutoLevel is off.

The control knob called **Gain**, by default, is the only point at which the input gain can be controlled before the A/D converter. We will use this knob for gain calibration, as described in the *FonaDyn Handbook* section 3.2.4. Turn off the AutoLevel feature for the microphone, as it will break the calibration of sound level.

> Actually, there *is* a another Gain control, in the **Dynamics** panel. To use it when recording, you need (1) to go to the separate RME applet for hardware configuration, and there check the option "EQ+D for Record", and (2) to turn on Dynamics processing with the round button at the top left of the Dynamics panel. We discourage this, because you might accidentally introduce other Dynamics processing as well.

Now we will configure the EGG input. For the channel Mic 2,

- Turn the pan knob fully right (R100).
- Press the spanner to open the Settings.
- Leave the Stereo button in the off state.
- Make sure that the phantom power is off.
- Turn AutoLevel on.

For the EGG signal, the AutoLevel feature is quite useful, for preventing clipping. FonaDyn does not require the gain for the EGG signal to be calibrated.

Models Fireface 800, 802, UFX, UFX II and UFX+

These models all have their microphone preamps on inputs 9-12 (Fireface 800: inputs 7-10). FonaDyn uses only the inputs 1-2, and so will not see the microphone signals. To solve this, you can either use a separate mic preamp connected to analog line input 1 (easy), or use the built-in routing capabilities of the Fireface. The latter is a little trickier, but you don't need a separate pre-amp. We now describe this re-routing alternative.

On the Fireface models 800 and 802, TotalMix has no Gain control here. Instead, on the front panel of the device, each of the four XLR inputs (7-10 or 9-12) has a physical gain or 'volume' control knob, next to its connector. We will use this physical knob for the gain calibration, as

described in the *FonaDyn Handbook* section 3.2.4. For the following example, we will use inputs 9 and 10, since both models have mic preamps on these inputs.

Connect your microphone to input 9 using an XLR connector, and your EGG device to input 10 using a ¼" jack plug connector.

In TotalMix, for the channel Mic 9,

- turn the pan knob fully left (L100),
- Press the spanner to open the Settings
- turn *off* the Stereo button,
- if the microphone requires phantom power (+48v), then press the button 48V.

Now we will configure the EGG input. For the channel Mic 10,

- Turn the pan knob fully right (R100).
- Press the spanner to open the Settings.
- Turn on Inst, to select the jack input instead of XLR.
- Leave the Stereo button in the off state.
- Turn the phantom power off (although it does not affect the jack input).

In TotalMix, it is possible to **loop back** internally the signals at the hardware outputs to the inputs, but only to those with the same number. In other words, only the hardware outputs AN1/2 can be looped back to hardware inputs AN1/2, which is where we want the Mic signal. To activate the loopback, follow these steps, in the given order:

- Pull down the fader on the output CONTROL ROOM AN1/2 (or "Main"). This is to prevent howling feedback, since AN1/2 is usually also the speaker output.
- Pull up the fader on HARDWARE INPUTS Mic 9 to 0 dB. This routes Mic 9 to the CONTROL ROOM AN1/2.
- Open the Settings for CONTROL ROOM output AN1/2 and press Loopback.

Now the signals on CONTROL ROOM outputs AN1/2 are invisibly looped back to HARDWARE INPUTS AN1 2 (unaffected by all the AN1/2 Settings, EQ and Dynamics). This is what we want. Now, the gain of the recorded signal is affected also by the fader for HARDWARE INPUTS Mic 9. The CONTROL ROOM AN1/2 fader affects only the gain to the analog outputs.

EQ settings

Normally, you should make sure that the EQ section is completely disabled on both input channels. Each 'EQ' indicator should be dark, not lit up in orange.

FonaDyn always applies a fixed high-pass filter of its own to the microphone signal. FonaDyn has no phase issues with the microphone signal. If you have a very good microphone *and* a great deal of low-frequency background noise in the room, you may still face problems with low-frequency rumble. If so, then in TotalMix, on the microphone channel, you might want to activate the built-in low-cut (LC) filter. In the EQ panel, turn on the LC switch and adjust the slope and cutoff of the low-cut (high-pass) filter as desired.

Do not apply any EQ to the EGG signal. If you do, the EGG pulse shapes may be distorted, or change in an undesired way with the fundamental frequency.

Setting up for playback

For listening to recordings, and for live monitoring of the microphone, FonaDyn will play back the Voice signal on the first two hardware outputs. When recording, the second output can optionally be used to play a tone for level calibration (Handbook section 3.2).

Default playback device

To avoid disturbances and accidental recording of alert sounds from your operating system, make sure that the Fireface outputs AN1/2 (sometimes called “Main” or “Speakers”) are *not* configured as the **default playback sound device** for your computer. This is done in your computer’s system control panel. This recommendation is especially important if you are using loopback on AN1/2, as described in the previous section.

If you do want to hear alert sounds, or if you want to play sounds from the computer to the subject, you can set the Fireface outputs AN3/4 as the default playback device, and route them to the Fireface’s headphone output using TotalMix.