

Modules

The following high quality audio effect modules are provided in libFX5000 library. The modules are running at up to 48kHz sampling rate (MixPA / MixPaXT module up to 192kHz). Most of these modules allow to dynamically allocate their available processes. The given [RAM size available] is related to the dynamic processes [DSP RAM size].

Module	Description	DSP in/out max	Dynamic processes max	Cycles max (48kHz)	RAM size available	Nodes max
Audiotrack	High Quality Stereo Pitch Shifter	8/8	15	748	474	24
FBCancel	Acoustic Feedback Canceller based on automatic notch filters	4/4	3	1280	67	8
LiveMic	Echo/Reverb, Pitch/Frequency Shifter	8/8	15	1699	868	24
LiveMicDualEcho	Double delay echo, Pitch/Frequency Shifter	8/8	15	1475	1267	24
MixPA	Mixer and Power Amplification (no static process)	8/8	32	1811*	1044	48
MixPaXT	Mixer and Power Amplification extended version (no static process)	8/8	32	1811*	1114	48
MixSPDIFOut	Mixer and Power Amplification with S/PDIF out	8/8	31	1811*	624	40
MultiFX	Multi effect module	8/8	15	1687	1305	24
Spring reverb	High quality 2-spring reverb	8/8	8	1848	456	8
VReverb	High quality Reverb + Chorus	4/4	8	1048	242	8

(*)For less than 16 processes: 1811 free cycles at 48kHz / 787 free cycles at 96kHz / 275 free cycles at 192kHz.

Up to 32 processes: 1703 free cycles at 48kHz / 679 free cycles at 96kHz / 167 free cycles at 192kHz.

Dynamic processes

Dynamic processes can be allocated several times in a module.

Dynamic process	Description	Associated module	Cycles	DSP RAM size
Add2/Sub2/Gain	Simple operators (add/subtract/multiply)	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX/VReverb	17/17/15	3
Biquad	All kinds of filters: HPF/LPF/PEQ band/etc.	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX/VReverb	35*NbOfBand + 35	24*NbOfBand + 15
BiquadEx	Same filters as 'Biquad' + HS2/LS2(2nd order shelf filter) types.	MixPA/MixPaXT	35*NbOfBand + 65	24*NbOfBand + 15
BitCrusher	Decimation and bit depth reduction effect	LiveMic/MultiFX	56	10
BusSendN	Mixes one audio input channel into N audio busses	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX/VReverb	2*out_count + 16	out_count + 4
Compander	Dynamic range expanding/soft compressing/limiting	MixPA/MixPaXT	186	23
Compressor/Limiter	Dynamic range compressing/limiting	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut*/MultiFX	173	8
Delay	24bit delay line	MixPA/MixPaXT/MixSPDIFOut*-	79	15
Distortion	Simple distortion for voice effects like megaphone	LiveMic	141	61
Exciter	Enhances voice quality	MixPA/MixPaXT/MixSPDIFOut*-	313	42
FreqShifter	Shift amount up to 16Hz	LiveMic/MixPA/MixPaXT	330	61
GainN	Writes one audio input channel to N outputs	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX/VReverb	2*out_count + 16	out_count + 4
HQDistortion_Q0	High quality multi-stage distortion (Quality 0)	MultiFX	368 (max)	122
HQDistortion_Q1	High quality multi-stage distortion (Quality 1)	MultiFX	1117 (max)	122
LevelDetect	Level detection	AudioTrack/LiveMic/MixPA/MixSPDIFOut*/MultiFX/VReverb	47	9
LevelDetectRMS/(RMS-Meter)	RMS level detection	MixPaXT	227	152
Limiter	Dynamic range limiting	MixPaXT	97	11
MixN	Mixes N samples to 1 sample	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX/VReverb	2*in_count + 20	in_count + 4
NoiseGate	Noise gate	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX	59	13
PeakLevel	Peak level detection	AudioTrack/LiveMic/MixPA/MixPaXT/MixSPDIFOut/MultiFX/VReverb	24	3
PitchShifter	Pitch shifter	LiveMic/MixPA	183	27
RMS-Meter	RMS level detection	MixPaXT	227	152
SignalGenerator	Signal generator(white noise)	MixPaXT	24	5
Spatializer	3D effect for speaker	MixPA	82	17

(*-)Not available at 192kHz.

Static processes

Static processes are available only one time in a module.

Static process	Description	Associated module	Cycles
Chorus	Stereo chorus effect	MultiFX/VReverb	173
Delay	Mono/stereo delay effect with feedback	MultiFX	125
FBCancel	Feedback cancel	FBCancel	684
DualEcho	Double delay line Echo	LiveMicDualEcho	351
HQPitchShifter	High quality single channel pitch shifting	MultiFX	320
Pitch	Stereo pitch-shifting for music	AudioTrack	1300
Reverb+echo	Reverb and echo effects	LiveMic	1072
SpringReverb	Spring reverb	SpringReverb	1574
Tremolo	Stereo tremolo effect	MultiFX	158
VReverb	Stereo reverb effect	VReverb	900
Wah-wah	Mono wah-wah effect	MultiFX	88