

Available Effects and Functions for SAM5000 Series ICs

New Effects & Functions

- High Quality Pitch Detector
 - Frequency detection ranges from 50Hz to 1000Hz
 - “Voiced” (vowels...), “Unvoiced” and “Silence” detection, provides also signal level information
 - This module can be used for various purposes:
 - Guitar tuner, precise and fast (approx 20ms), with Auto-String detection
 - Karaoke Scoring function
 - driving a Vocal Shifter (i.e. vocal harmonizing feature, see below)
- High Quality Vocal Shifter / Vocal Synthesizer
 - Processing of 3 voices in one DSP on SAM5xxx
 - Vocal harmony generation and pitch correction
 - Voice transformation (Male voice into Female voice etc.)
- Frequency Shifter to prevent Feedback on Microphone
 - shift amount range is between -16Hz and +16Hz
- High Quality Overdrive / Distortion
 - oversampled curve processing for warm Tube and also screaming Distortion modeling
- Insert-Multi-Effects for GM2 Synthesizer module
 - Compressor, Wah, Overdrive, Parametric EQ, Chorus/Flanger/Phaser/Tremolo/Rotary, Delay
 - mono or stereo configurations, 2 or more Insert-Multi-Effect chains possible

Other available Effects

- High Quality Reverb: different types like Room, Hall, Cathedral, Spring
- Echo / Delay: different types like Mono, Stereo, Ping-Pong or Multi-Tap
- Stereo Chorus / Flanger / Phaser
- Stereo 2-way Rotary Speaker Modeling
- Tremolo / Auto-Panning
- Parametric EQ, Graphic EQ
- Compressor / Limiter / Compander / Noise Gate
- Wah-Wah / Auto-Wah
- High Quality Stereo Pitch Shifter (Music Key Control)
- Stereo Vocoder with Filter-bank of 2x12 real-time controlled Filters
- Stereo Imaging Effects: Spatializer 3D, Wide-Stereo, Surround

Other available Functions

- GM2-Synth: General MIDI level 2 / GS compatible Sound module
- Virtual Tone-Wheel Organ + Chorus/Vibrato scanner simulation, full polyphonic (license)
- Standard MIDI File Player (e.g. Accompaniment, Drum-Machine function)
- MP3 Player, ADPCM Compressed Audio Recording/Playback
- USB Flash Drive and SD-Card FAT-File system (e.g. MP3 Playback from USB-Stick or SD-Card)
- USB Audio/MIDI Interface, Audio Class 1.0/2.0 compliant
- Feedback Canceller (based on Spectral analysis + 12 Notch Filters)
- Vocal Reducer (Center-Cancel)
- Auto BPM Detector (e.g. for DJ-Effect Tempo synchronization)
- Audio Routing / Mixing (8x8)
- VU-Metering / (RMS) Peak-Level detection
- Sample Rate Conversion
- Graphics LCD support