UNOFFICIAL AIRA TB-3

EFFECTS PARAMETER GUIDE

*(2 copies of all effects except *)*

Applies one of 25 distortion types to the input signal.			**DISTORTION** [MONO]	
1.	DISTORTION SW	(0 -1)	OFF, ON	*Switches distortion on/off.*
2.	TYPE	(0 - 24)	Mid Boost	*This is a booster with unique characteristics in the midrange.*
			Clean Boost	*This not only functions as a booster, but also produces a clean tone that has punch even when used alone.*
			Treble Boost	*This is a booster that has bright characteristics.*
			Blues OD	*This is a crunch sound of the BOSS BD-2. This produces distortion that faithfully reproduces the nuances of picking.*
			Crunch	*A lustrous crunch sound with an added element of amp distortion.*
			Natural OD	*This is an overdrive sound that provides distortion with a natural feeling.*
			OD-1	*This models the sound of the BOSS OD-1. This produces sweet, mild distortion.*
			T-Scream	*This models an Ibanez TS-808.*
			Turbo OD	*This is the high-gain overdrive of the BOSS OD-2.*
			Warm OD	*This is a warm overdrive.*
			Distortion	*This gives a basic, traditional distortion sound.*
			Mild DS	
			Mid DS	
			RAT	*This models a Proco RAT.*
			GUV DS	*This models a Marshall GUV' NOR.*
			DST+	*This models a MXR DISTORTION+.*
			Modern DST	
			Solid DST	
			Stack	*This models a Marshall stack.*
			Loud	
			Metal Zone	*This models the sound of the BOSS MT-2, producing a wide range of metal sounds from old style to slash.*
			Lead	*Produces a sound with both the smoothness of an overdrive along with a deep distortion.*
			'60s Fuzz	*This models a FUZZFACE effects pedal.*
			Oct Fuzz	*A fuzz sound with rich harmonic content.*
			Muff Fuzz	*This models an Electro-Harmonix Big Muff Pi.*
3.	DRIVE	(0 - 120)	*Adjusts the depth of distortion circuit.*	
4.	BOTTOM	(0 - 100)	-50 – +50	*Adjusts the tone for the low frequency range. Turning this left cuts the low end; turning it right boosts the low end.*
5.	TONE	(0 - 100)	-50 – +50	*Adjusts the tone.*
6.	COLOR	(0 - 1)	*This seems to increase the harmonics at mainly 2x and 3x the current*	

			frequency of the fundamental, making the sound brighter.
7.	EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the distortion effect.*
8.	DRY LEVEL	(0 - 100)	*Adjusts the volume of the direct sound.*

TOP

Applies 1 or 2 voice pitch shifting to the input signal.			**[PS] PITCH SHIFTER** [MONO/STEREO]	
1.	PS SW	(0 -1)	OFF, ON	*Switches pitch shifter on/off.*
2.	PS VOICE	(0 - 2)	1MONO	*One-voice pitch-shifted sound output in mono. Pitch 2 is disabled in this mode.*
			2MONO	*Two-voice pitch-shifted sound (1:PITCH, 2:PITCH) output in mono.*
			2STEREO	*Two-voice pitch-shifted sound (1:PITCH, 2:PITCH) output through L channel and R channel. Direct level is centered in the stereo spectrum.*
3.	PS 1 PITCH	(0 - 48)	-2400 – 2400	*Adjusts the amount of pitch shift (the amount of interval) in semitone steps. 0 (24) is the midpoint.*
4.	PS 1 PRE DELAY	(0 - 100)	0 – 100ms	*Adjusts the time from when the direct sound is heard until the pitch shifted sounds of Pitch 1 are heard.*
5.	PS FEEDBACK	(0 - 100)	*Adjusts the feedback amount of the pitch shift sound.*	
6.	PS 1 EFX LEVEL	(0 - 100)	*Adjusts the volume of the pitch shifter, voice 1.*	
7.	PS 2 PITCH	(0 - 48)	-2400 – 2400	*Adjusts the amount of pitch shift (the amount of interval) in semitone steps. 0 (24) is the midpoint.*
8.	PS 2 PRE DELAY	(0 - 100)	0 – 100ms	*Adjusts the time from when the direct sound is heard until the pitch shifted sounds of Pitch 2 are heard.*
9.	PS 2 EFX LEVEL	(0 - 100)	*Adjusts the volume of the pitch shifter, voice 2.*	
10.	PS DIRECT LEVEL	(0 -100)	*Adjusts the volume of the direct sound.*	

TOP

Applies 6-band EQ to the input signal.			**[EQ] EQUALIZER** [MONO]	
1.	EQ SW	(0 -1)	OFF, ON	*Switches equalizer on/off.*
2.	EQ LOW CUT	(0 - 17)	Flat – 800Hz	*This sets the frequency at which the low cut filter begins to take effect. When "FLAT" is selected, the low cut filter will have no effect. No effect: 0.*
3.	EQ LOW GAIN	(0 - 40)	-20dB – +20dB	*Adjusts the low frequency range tone ±20dB.*
4.	EQ LOW MID FREQ	(0 - 27)	20Hz – 10.0KHz	*Specifies the center of the frequency range that will be adjusted by the LOW-MID GAIN.*
5.	EQ LOW MID Q	(0 - 5)	0.5 – 16	*Adjusts the width of the area affected by the EQ centered at the LOW-MID FREQ. Higher values will narrow the area.*
6.	EQ LOW MID GAIN	(0 - 40)	-20dB – +20dB	*Adjusts the low-middle frequency range tone ±20dB.*
7.	EQ HIGH MID FREQ	(0 - 27)	20Hz – 10.0KHz	*Specifies the center of the frequency range that will be adjusted by the HIGH-MID GAIN.*
8.	EQ HIGH MID Q	(0 - 5)	0.5 – 16	*Adjusts the width of the area affected by the EQ centered at the HIGH-MID FREQ. Higher values will narrow the area.*
9.	EQ HIGH MID GAIN	(0 - 40)	-20dB – +20dB	*Adjusts the high-middle frequency range tone ±20dB.*

10.	EQ HIGH CUT	(0 - 14)	630Hz – Flat	*This sets the frequency at which the high cut filter begins to take effect. No effect: 14.*
11.	EQ HIGH GAIN	(0 - 40)	-20dB – +20dB	*Adjusts the high frequency range tone ±20dB.*
12.	EQ LEVEL	(0 - 40)	-20dB – +20dB	*Adjusts the volume level of the equalizer.*

TOP

Applies one of 7 reverb types to the input signal.			**[RV] REVERB**	[STEREO]
1.	RV SW	(0 -1)	OFF, ON	*Switches reverb on/off.*
2.	RV TYPE	(0 - 6)	AMBIENCE	*If time and predelay are set to 0, gives a nice doubling effect with more bass at one end and phasing effect with less low end on the other. Metallic overtones at low reverb times.*
			ROOM	*Simulates the reverberation in a small room. Provides warm reverberations.*
			HALL1	*Simulates the reverberation in a concert hall. Provides clear and spacious reverberations.*
			HALL2	*Simulates the reverberation in a concert hall. Provides mild reverberations.*
			PLATE	*Simulates the reverberation of a metallic plate. It provides a slight "wavy" effect sound with a distinct upper range.*
			SPRING	*Simulates the sound of a guitar amp's built-in spring reverb. The RV SPRING SENS parameter is now active.*
			MODULATE	*This reverb adds the wavering sound found in hall reverb to provide an extremely pleasant reverb sound.*
3.	RV TIME	(0 - 99)	*Adjusts the reverb time in tenths of seconds (up to 9.9 sec). The time is fixed and not affected by the value set in TEMPO.*	
4.	RV PRE DELAY	(0 - 100)	0 – 100ms	*Adjusts the time from when the direct sound is heard until the reverb sound is heard.*
5.	RV HPF	(0 - 17)	Flat – 800Hz	*Cuts the frequency range below the cutoff frequency. No effect: 0*
6.	RV LPF	(0 - 14)	630Hz – Flat	*Cuts the frequency range above the cutoff frequency. No effect: 14*
7.	RV DENSITY	(0 - 10)	*Adjusts the density of the reverberations. If predelay is set to 0, greater values has the effect of smoothing the attack of the reverb.*	
8.	RV SPRING SENS	(0 - 100)	*Adjusts the reverb spring sensitivity when set to SPRING.*	
9.	RV EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the reverb effect.*	
10.	RV DIRECT LEVEL	(0 - 100)	*Adjusts the volume of the direct sound.*	

TOP

Applies compression and gain to the input signal.			**[CS] COMPRESSOR**	[MONO]
1.	CS SW	(0 -1)	OFF, ON	*Switches compressor on/off.*
2.	CS ATTACK	(0 - 124)	0 – 800ms	*Adjusts the compressor attack time.*
3.	CS RELEASE	(0 - 124)	0 – 8000ms	*Adjusts the compressor release time.*
4.	CS THRESHOLD	(0 - 40)	-40 – 0dB	*Adjusts the threshold at which the compressor is activated, increasing in 1dB increments.*
5.	CS RATIO	(0 - 13)	1:1.0, 1:1.1,	*Adjusts the compression ratio. As a*

			1:1.2, 1:1.4, 1:1.6, 1:1.8, 1:2.0, 1:2.5, 1:3.2, 1:4.0, 1:5.6, 1:8.0, 1:16, 1:INF	*compressor, it functions more as an overdrive than compressor, with artifacts and aliasing showing up when presented with richly harmonic waveform content. Attack, release, and threshold also need to be carefully set to avoid audio artifacts.*
6.	CS KNEE	(0 - 9)	Hard Soft1 – Soft9	*This is a function that gradually applies compression starting earlier than the threshold, smoothening the transition.*
7.	CS GAIN	(0 - 80)	-40 – 40dB	*Adjusts the output gain ±40dB.*
8.	CS BALANCE	(0 - 100)	-50 – 50	*Volume balance between the direct sound and the effect sound. Full left adds no compressor.*

TOP

Applies amplitude modulation (AM) to the input signal.			**[RM] RING MODULATOR**	[MONO]
1.	RM SW	(0 -1)	OFF, ON	*Switches ring modulator on/off.*
2.	RM FREQUENCY	(0 - 127)	*Adjusts the frequency at which amplitude modulation is applied.*	
3.	RM SENS	(0 - 127)	*Adjusts the amount of frequency modulation applied.*	
4.	RM POLARITY	(0 - 1)	UP, DOWN	*Determines whether the frequency modulation moves towards higher frequencies (UP) or lower frequencies (DOWN). The two effects are very different, with UP probably being the more useable of the two. Down is a buzzier effect.*
5.	RM EQ LOW	(0 - 30)	-15dB – 15dB	*Gain of the low frequency range ±15dB.*
6.	RM EQ HIGH	(0 - 30)	-15dB – 15dB	*Gain of the high frequency range ±15dB.*
7.	RM BALANCE	(0 - 100)	-50 – 50	*Volume balance between the direct sound and the effected sound.*
8.	RM LEVEL	(0 - 127)	*Adjusts the level of the ring modulator effect.*	

TOP

Applies bit crusher to the input signal.			**[BC] BIT CRUSHER**	[MONO]
1.	BC SW	(0 -1)	OFF, ON	*Switches bit crusher on/off.*
2.	BC FILTER	(0 - 127)	*Adjusts the bit crusher LPF cutoff frequency.*	
3.	BC SAMPLE RATE	(0 - 127)	*Adjusts the sample rate (higher values = lower sample rates).*	
4.	BC EQ LOW	(0 - 30)	-15dB – 15dB	*Gain of the low frequency range ±15dB.*
5.	BC EQ HIGH	(0 - 30)	-15dB – 15dB	*Gain of the high frequency range ±15dB.*
6.	BC LEVEL	(0 - 127)	*Adjusts the volume of the bit crusher effect.*	

TOP

Applies one of 6 tremolo types to the input signal.			**[TR] TREMOLO**	[MONO/STEREO]
1.	TR SW	(0 -1)	OFF, ON	*Switches tremolo on/off.*

2.	TR TYPE	(0 - 5)	triangle	*slight dip at middle and ends*
			up sawtooth	*right to left modulation*
			down sawtooth	*left to right modulation*
			sine	*smooth modulation*
			square	*on/off modulation*
			random	*random volume and stereo value*
3.	TR PHASE	(0 - 100)	0 – 360°	*The phase of the wave on which to start.*
4.	TR RATE	(0 - 100)	8000 – 20ms	*Adjusts the rate of the tremolo effect. Disabled when BPM sync is turned on.*
5.	TR BPM SYNC	(0 - 20)	OFF, 2, 3/2, 4/3, 1, 3/4, 2/3, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 3/32, 1/12, 1/16, 3/64, 1/24, 1/32, 3/128	
6.	TR SHAPE	(0 - 100)	*Adjusts changes in volume level. A higher value will steepen the waveform selected in TR TYPE.*	
7.	TR DEPTH	(0 - 100)	*Determines the depth (amount) of the tremolo effect.*	
8.	TR PAN SELECT	(0 – 1)	*Switches tremolo effect from mono (0/TRE) to stereo (1/PAN).*	
9.	TR EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the tremolo effect.*	

TOP

Applies one of 3 chorus types to the input signal.			**[CH] CHORUS**	[MONO/STEREO]
1.	CH SW	(0 -1)	OFF, ON	*Switches chorus on/off.*
2.	CH MODE	(0 - 2)	MONO	*This chorus effect outputs the same sound from both L channel and R channel.*
			STEREO1	*This is a stereo chorus effect that adds different chorus sounds to L channel and R channel.*
			STEREO2	*This stereo chorus uses spatial synthesis, with the direct sound output in L channel and the effect sound output in R channel. Left-channel-only operation can be obtained by bringing chorus effect level to 0.*
3.	CH RATE	(0 - 100)	8000 – 20ms	*Adjust the speed of the chorus effect. Disabled when BPM sync is turned on.*
4.	CH BPM SYNC	(0 - 20)	OFF, 2, 3/2, 4/3, 1, 3/4, 2/3, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 3/32, 1/12, 1/16, 3/64, 1/24, 1/32, 3/128	
5.	CH DEPTH	(0 - 100)	*Determines the depth of the chorusing effect.*	
6.	CH PRE DELAY	(0 - 80)	0 – 80ms	*Adjusts the time from when the direct sound is heard until the chorus sounds are heard.*
7.	CH HPF	(0 - 17)	Flat – 800Hz	*Cuts the frequency range below the cutoff frequency. No effect:0.*
8.	CH LPF	(0 - 14)	630Hz – Flat	*Cuts the frequency range above the cutoff frequency. No effect: 14.*
9.	CH EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the chorus effect.*	

TOP

Applies flanging to the input signal.	**[FL] FLANGER**	[STEREO]

1.	FL SW	(0 -1)	OFF, ON	*Switches flanger on/off.*
2.	FL RATE	(0 - 100)	8000 – 20ms	*Adjusts the rate of the flanging effect. Disabled when BPM sync is turned on.*
3.	FL BPM SYNC	(0 - 20)	OFF, 2, 3/2, 4/3, 1, 3/4, 2/3, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 3/32, 1/12, 1/16, 3/64, 1/24, 1/32, 3/128	
4.	FL DEPTH	(0 - 100)	*Determines the depth of the flanging effect.*	
5.	FL MANUAL	(0 - 100)	-50 – 50	*Adjusts the center frequency at which to apply the effect.*
6.	FL RESONANCE	(0 - 100)	*Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound.*	
7.	FL SEPARATION	(0 - 100)	*Adjusts the diffusion. The diffusion increases as the value increases.*	
8.	FL HPF	(0 - 10)	Flat – 800Hz	*Cuts the frequency range below the cutoff frequency. No effect: 0.*
9.	FL EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the flanger.*	
10.	FL DIRECT LEVEL	(0 -100)	*Adjusts the volume of the direct sound.*	

TOP

Applies one of 4 types of phaser to the input signal.			**[PH] PHASER**	[MONO]
1.	PH SW	(0 -1)	OFF, ON	*Switches phaser on/off.*
2.	PH TYPE	(0 - 3)	4Stage	*This four-phase effect achieves a light phaser effect.*
			8Stage	*This eight-phase effect is a popular phaser effect.*
			12Stage	*This twelve-phase effect achieves a deep phaser effect.*
			Bi-Phase	*This has two phase shift circuits connected in series.*
3.	PH RATE	(0 - 100)	8000 – 20ms	*Adjusts the rate of the phaser effect. Disabled when BPM sync or PH STEP RATE is turned on.*
4.	PH BPM SYNC	(0 - 20)	OFF, 2, 3/2, 4/3, 1, 3/4, 2/3, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 3/32, 1/12, 1/16, 3/64, 1/24, 1/32, 3/128	
5.	PH DEPTH	(0 - 100)	*Determines the depth of the phasing effect.*	
6.	PH MANUAL	(0 - 100)	-50 – 50	*Adjusts the center frequency at which to apply the effect. High values create lots of low end.*
7.	PH RESONANCE	(0 - 127)	*Determines the amount of resonance (feedback).*	
8.	PH STEP RATE	(0 - 20)	OFF, 2, 3/2, 4/3, 1, 3/4, 2/3, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 3/32, 1/12, 1/16, 3/64, 1/24, 1/32, 3/128	*Similar to BPM sync except the values are stepped. Sounds like "aliasing" at high depths/note divisions. Nice effect at lower depths.*
9.	PH EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the phaser.*	
10.	PH DIRECT LEVEL	(0 -100)	*Adjusts the volume of the direct sound.*	

TOP

Applies one of 3 delay types to the input signal.			**[DD] DELAY**	[MONO/STEREO]
1.	DD SW	(0 -1)	OFF, ON	*Switches delay on/off.*
2.	DD TYPE	(0 - 2)	SINGLE	*simple monoaural delay*

			PAN	*This delay is specifically for stereo output and allows you to obtain the tap delay effect that divides the delay time, then deliver them to L channel and R channel.*
			STEREO	*The direct sound is output from L channel, and the effect sound is output from R channel.*
3.	DD TIME	(0 - 100)	0 – 100ms	*Adjusts the delay time. Disabled when BPM sync is turned on.*
4.	DD TAP TIME	(0 - 100)	0 – 100%	*Adjusts the delay time of L channel, adjusting L channel delay time relative to R channel delay time (considered as 100%). If BPM sync mode is off, the effect is not as dramatic. Unless DD TYPE is set to PAN, this parameter is disabled.*
5.	DD BPM SYNC	(0 - 13)	OFF, 2, 3/2, 4/3, 1, 3/4, 2/3, 1/2, 3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 3/32, 1/12, 1/16, 3/64, 1/24, 1/32, 3/128	
6.	DD FEEDBACK	(0 - 100)	*Adjusts the proportion of the delay sound that is fed back into the effect.*	
7.	DD LPF	(0 - 14)	630Hz – Flat	*Cuts the frequency range above the cutoff frequency. No effect: 14.*
8.	DD EFFECT LEVEL	(0 - 100)	*Adjusts the volume of the delay effect.*	
9.	DD DIRECT LEVEL	(0 -100)	*Adjusts the volume of the direct sound.*	

Additional Notes:

- There are 2 random functions: S&H on LFO and RAND on tremolo.
- BPM sync in the FX section runs continuously, i.e., no re-trig, so even bpm-synced effects may seem to get out of time because they can start on any part of the slope of the waveform. To get consistent time-dependent effects, use the LFO section with re-trig enabled or turn off time divisions and sync manually.
- The TB-3 does not have a pan setting, but many panning effects can be achieved using the stereo effects. For example, left channel only operation can be achieved by using STEREO2 effect in chorus, which sends the unaffected signal to the left channel and the effected signal to the right. By bringing chorus level to 0, only the left channel will be audible. Both FX can be used independently, so many independent and interdependent panning effects are possible. Hook this thing up in stereo!
- The TB-3 is a monophonic instrument but can easily create chords. It has 3 oscillators which can be tuned independently (a triad). Those three voices can then be passed through the FX1 pitch shifter which creates a left- and right-panned copy of the original voice. Each copy can be tuned up or down 24 semitones (fifths work best), and now you're up to 9 voices of polyphony to create complex chords.

Resources Used:

- parameter guides for Roland: **[RD-2000], [MS-3], [GT-01], [GT-100], [Fantom]** and others
- Unofficial TB-3 MIDI Implementation v1.3
- Roland-Aira-TB-3_MI_1.pdf sysex document

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