YAMAHA

TX81Z

FM TONE GENERATOR



TX81Z MULTI-TIMBRAL FM TONE GENERATOR



Announcing eight of the most sophisticated tone generators Yamaha has ever produced —— in one package. The TX81Z is an 8-note polyphonic tone generator that can act as up to 8 independent instruments. You can use it as a simple expansion tone generator to add an additional voice to your MIDI keyboard, or with a sequence recorder to playback multi-part compositions, responding to MIDI messages on up to 8 independent channels. The 24 performance memories can each be programmed to an entirely different setup, and the note limits, MIDI reception channels, voice numbers, detune, and volume settings for each instrument can be changed instantly.

The TX81Z uses the same FM synthesis technology that made the Yamaha DX series famous, giving you an infinite spectrum ranging from natural, touch responsive "acoustic-sounding" voices to outrageous sound effects. While voice data is compatible with the DX21/27/100, a newly developed tone generator LSI provides even higher quality sound, using high-resolution envelope generators to eliminate digital noise. New voice parameters such as simulated Reverb and EG Shift have been added, and for the first time ever, you can do FM synthesis using non-sinewave operators. All voice parameters can be programmed from the front panel; no external programmers or computers are necessary.

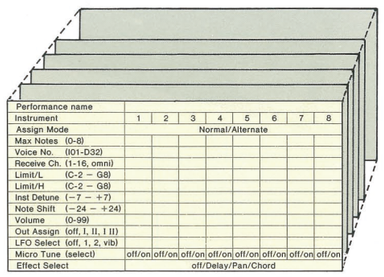
The functions are sophisticated, but operation is simple. A two-line 16 character LCD (reversed for high visibility in dim light) tells you everything you need, and the pull-out operation guide is always available for quick reference. Whether you're a live performer or a studio composer, the TX81Z is a highly developed tool that will open up new possibilities.

PLAY SINGLE

Play Single mode allows you to play one voice at a time, using chords of up to 8 notes. The TX81Z has 5 banks of 32 voices each. Banks A-D contain 128 factory preset voices, and bank I (Internal) has 32 user voice memories for storing edited presets of totally new voices that you create. The currently selected voice name is shown in the LCD. Use the PARAMETER select keys to move through the banks and the DATA ENTRY keys to select voices 1-32. You can also select voices using the program select switches on your keyboard.

PLAY PERFORMANCE

Performance Mode allows the TX81Z to act as several independent instruments. The maximum number of notes can be set for each instrument, and any combination is possible within a total of 8 notes. For instance, instrument 1 could play a piano voice with 5-note polyphony while instruments 2, 3 and 4 each play monophonic parts. You can also take advantage of the Note Limit functions for each instrument to create any type of split or doubled effect even when playing notes on one MIDI channel.



Performance name								
Instrument	1	2	3	4	5	6	7	8
Assign Mode	Normal/Alternate							
Max Notes (0-8)								
Voice No. (I01-D32)								
Receive Ch. (1-16, omni)								
Limit/L (C-2 – G8)								
Limit/H (C-2 – G8)								
Inst Detune (–7 – +7)								
Note Shift (–24 – +24)								
Volume (0-99)								
Out Assign (off, I, II, I II)								
LFO Select (off, 1, 2, vib)								
Micro Tune (select)	off/on	off/on	off/on	off/on	off/on	off/on	off/on	off/on
Effect Select	off/Delay/Pan/Chord							

PROGRAM CHANGE TABLE

The TX81Z memory contains a Program Change Table that lets you specify which TX81Z voice (banks I, A-D) or performance memory (1-24) is to be selected in response to each MIDI program change (1-128). This is very handy for concerts, since you can set the desired voices to be selected consecutively without rearranging the actual voices in memory. If the Program Change Table contains a performance number, the entire setup of the TX81Z (independent settings for all 8 instruments) can be changed by pressing one switch on your keyboard.

ALTERNATIVE SCALES

Incoming Note On messages can be routed through one of the 13 Micro Tune Tables (2 user-programmable, 11 preset) to produce non-standard intonation. Eleven scales such as Mean Tone, Werckmeister, Pythagorean and Kirnberger are preset, and two memories are provided for your own scales. (One for a 12 note octave and one for the full keyboard scale.) You can use a standard MIDI keyboard to play harpsichord voices in mean-tone temperament, or play gongs and bells in authentic Balinese gamelan scales.

THREE EFFECTS

One of the three effects can be selected for use in each performance memory. Using Pan, the sound can be periodically shifted between the two outputs, with full control over speed and direction. The Transposed Delay effect lets one note trigger a delayed, transposed note. You can set the delay time, transposition, number of repetitions and velocity of the delayed note. Chord Set assigns up to 4 notes to be sounded by a single incoming note. Twelve notes can be specified, with a different chord for each.

VOICE EDITING





Voice data is compatible with the DX21/27/100, so you can take advantage of the hundreds of voices already programmed for these popular instruments. In addition, the TX81Z offers several new voice parameters.

Oscillator Wave Select gives you a choice of 8 different waveforms to use in each operator, generating sounds more complex than were possible with previous 4-operator FM synthesizers. Fixed Frequency mode is selectable for each operator, and is useful for formants (stationary regions of frequency emphasis) or complex modulation effects. EG Shift sets the range of the envelope, and can determine a minimum operator output level even before you play a note. Reverb is another new voice parameter which simulates the lingering decay of sound in a live room by slowing the EG release rates when the operator level falls below a certain point.

Voice Functions are a part of each voice memory. Poly/Mono, Pitch Bend Range, Portamento Time, and Transpose can be set for each voice. MIDI controllers on your keyboard can regulate pitch or amplitude modulation, and a Breath Controller can control two additional parameters; EG Bias and Pitch Bias, for expressive phrasing typical of a wind instrument.

REAR PANEL





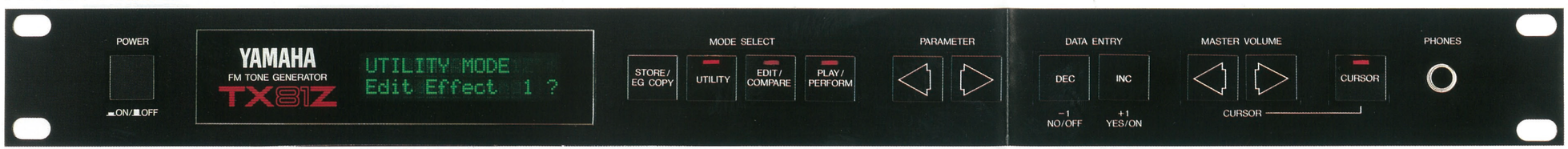
CASSETTE SAVE/LOAD

You can use the included cable to connect a cassette data recorder for saving and loading Voice and Performance data, as well as Setup, Micro Tune and Program Change Table memories.

MDF1 (MIDI Data Filer)

The MDF1 MIDI Data Filer is handy disk drive that can store up to 19 files of MIDI bulk data (total 60 Kbytes) on each side of an inexpensive 2.8" Quick Disk. Any type of TX81Z bulk data (voice, performance, micro tune, effects, etc.) can be quickly saved or loaded.

FRONT PANEL



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PARAMETERS

SINGLE EDIT

Algorithm
Feedback
Edit LFO
- Wave
- Speed
- Delay
- Pitch Modulation Depth
- Amplitude Modulation Depth
- Sync

Sensitivity
- Pitch Modulation Sensitivity
- Amplitude Modulation Sensitivity
- EG Bias Sensitivity
- Key Velocity Sensitivity

Edit Frequency
- Ratio
- Fixed Frequency

Oscillator Wave
Detune
Edit EG
- Attack Rate
- 1st Decay Rate
- 1st Decay Level
- 2nd Decay Rate
- Release Rate
- EG Shift
- (EG Copy)

Operator Output Level
Scaling
- Rate Scaling
- Level Scaling

Function
- Poly Mode
- Pitch Bend Range
- Full Time/Fingered Portamento
- Portamento Time
- Foot Controller Volume
- Foot Controller Pitch
- Foot Controller Amplitude
- Modulation Wheel Pitch
- Modulation Wheel Amplitude
- Breath Controller Pitch
- Breath Controller Amplitude
- Breath Controller Pitch Bias
- Breath Controller EG Bias
- Middle C
- Reverb Rate
- Voice Name

SINGLE UTILITY

Master Tune
MIDI Control
- Receive Channel
- Transmit Channel
- Key Number Mode
- Program Change
- Control Change
- Aftertouch to Breath Controller
- Pitch Bend
- Exclusive
- Voice Transmit
- Performance Transmit
- Setup Transmit
- Initialize Program Change Table
- Edit Program Change Table

Memory Protect
Combine
Cassette Control
- Save 32 Voice
- Verify 32 Voice
- Load 32 Voice
- Load 1 Voice
- Save 24 Perform
- Verify 24 Perform
- Load 24 Perform
- Load 1 Perform
- Save Setup
- Verify Setup
- Load Setup

Edit Effect 1 (Delay)
- Delay Time
- Pitch Shift
- Feedback
- Effect Level

Edit Effect 2 (Pan)
- Select
- Direction
- Range

Edit Effect 3 (Chord)
Micro Tune
- Edit Octave
- Initialize Octave
- Edit Full Kbd
- Initialize Full Kbd

Initialize Voice
Recall Edit

PERFORMANCE EDIT

Assign Mode
Maximum Notes
Voice Number
Receive Channel
Limit/L
Limit/H
Detune
Note Shift
Volume
Output Assign
LFO Select
Micro Tune
Effect Select
Performance Name

PERFORMANCE UTILITY

Voice Edit
Initialize Performance

PRESET VOICES

PRESET VOICES

	Bank A		Bank B		Bank C		Bank D
1	GrandPiano	1	Trumpet81Z	1	NylonGuit	1	BaadBreath
2	Uprt Piano	2	Full Brass	2	Guitar #1	2	VocalNuts
3	Deep Grd	3	FlugelHorn	3	TwelveStrg	3	KrstlChoir
4	HonkeyTonk	4	ChorusBras	4	Funky Pick	4	Metalimba
5	Elec Grand	5	FrenchHorn	5	AllThatJaz	5	WaterGlass
6	Fuzz Piano	6	AtackBrass	6	HeavyMetal	6	BowedBell
7	SkoolPiano	7	SpitBoneBC	7	Old Banjo	7	>>WOW<<
8	Thump Pno	8	Horns BC	8	Zither	8	Fuzzy Koto
9	LoTine81Z	9	MelloTenor	9	ElecBass 1	9	Spc Midiot
10	HiTine81Z	10	RaspAlto	10	SqncrBass	10	Gurgle
11	ElectroPno	11	Flute	11	SynFunkBas	11	Hole in 1
12	NewElectro	12	Pan Floot	12	ElecBass 2	12	Birds
13	DynomiteEP	13	Bassoon	13	AnalogBass	13	MalibuNite
14	DynoWurlie	14	Oboe	14	Jaco Bass	14	Helicopter
15	Wood Piano	15	Clarinet	15	LatelyBass	15	Flight Sim
16	Reed Piano	16	Harmonica	16	MonophBass	16	Brthbells
17	PercOrgan	17	DoubleBass	17	StadiumSol	17	Storm Wind
18	16 8 4 2 F	18	BowCello	18	TrumptSolo	18	Alarm Call
19	PumpOrgan	19	BoxCello	19	BCSexyPhon	19	Racing Car
20	<6 Tease>	20	SoloViolin	20	Lyrisyn	20	Whistling
21	Farcheeza	21	HiString 1	21	WarmSquare	21	Space Talk
22	Small Pipe	22	LowString	22	Sync Lead	22	Space Vibe
23	Big Church	23	Pizzicato	23	MellowSqar	23	Timpani
24	AnalogOrgn	24	Harp	24	Jazz Flute	24	FM Hi-Hats
25	Thin Clav	25	ReverbStrg	25	HeavyLead	25	Bass Drum
26	EZ Clav	26	SynString	26	Java Jive	26	Tube Bells
27	Fuzz Clavi	27	Voices	27	Xylophone	27	Noise Shot
28	LiteHarpsi	28	HarmoPad	28	GreatVibes	28	Snare 1
29	RichHarpsi	29	FanfarTpts	29	Sitar	29	Snare 2
30	Celeste	30	HiString 2	30	Bell Pad	30	Hand Drum
31	BriteCelst	31	PercFlute	31	PlasticHit	31	Synballs
32	Squeezebox	32	BreathOrgn	32	DigiAnnie	32	Efem Toms

SPECIFICATIONS

Switches	POWER, STORE/EG COPY, UTILITY, EDIT/COMPARE, PLAY/PERFORM, PARAMETER UP, PARAMETER DOWN, DEC, INC, CURSOR LEFT, CURSOR RIGHT, CURSOR
Display	16 character x 2 row backlit LCD
Terminals	CASSETTE, MIDI THRU, MIDI OUT, MIDI IN, OUTPUT I/II, PHONES
Power Reguirements	(US and Canadian model) AC 110-120V, 50/60 HZ (general model) AC 220-240V, 50/60 HZ
Power Consumption	8 W
Dimensions (WxDxH)	480 x 282 x 45.2 mm (18−15/16" x 11−1/8" x 1−3/4")
Weight	3.4 kg (7 lbs. 8 oz.)

SINCE 1887 YAMAHA
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