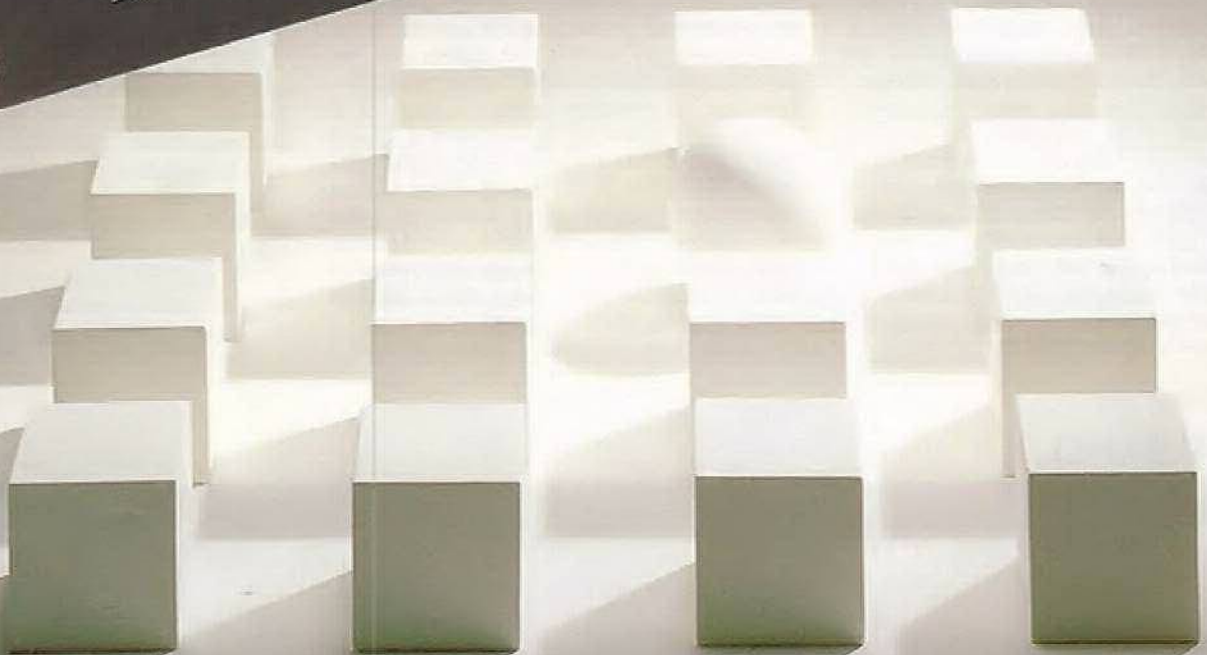


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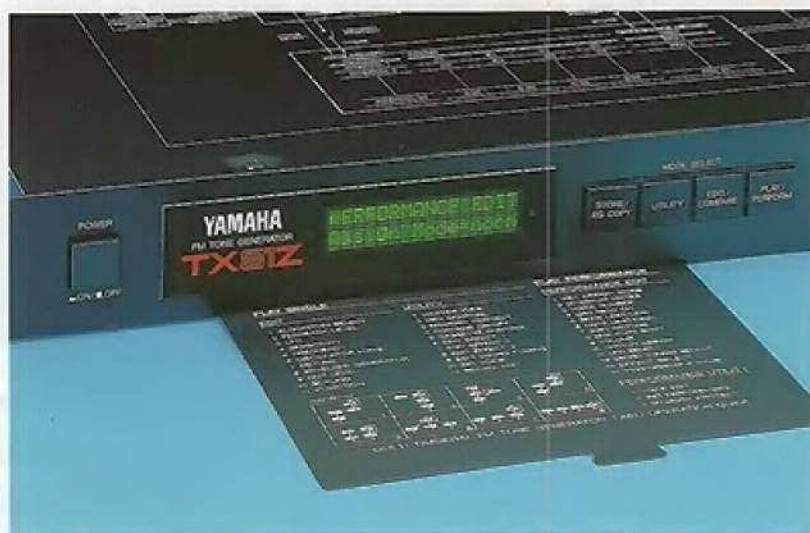
TX81Z

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 high-

er 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	00-08								
Voice No.	001-0223								
Reverb Ch.	0-16 (none)								
Limb	00-08								
Limb2	00-08								
Int. Detune	-7 - +7								
Note Limit	-24 - +24								
Volume	00-99								
Out Assign	001, 0, 1, 30								
LFO Select	001, 1, 2, 00								
Effect Select		off/on	off/on	off/on	off/on	off/on	off/on	off/on	off/on
Effect Select		off/Party/Para/Chord							

## FRONT PANEL





## 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

```
e1111^v ^- 0- m-
OSU W2 W3 W5 W7
```

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 ope-

```
e1111 24v
ALG=6 1 2 3
```

erator 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.



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## PARAMETERS

SINGLE EDIT		SINGLE UTILITY	PERFORMANCE EDIT
<p><b>Algorithm</b>  <b>Feedback</b>  <b>Edit LFO</b>                      Wave                      Speed                      Delay                      Pitch Modulation Depth                      Amplitude Modulation Depth                      Sync  <b>Sensitivity</b>                      Pitch Modulation Sensitivity                      Amplitude Modulation Sensitivity                      EG Bias Sensitivity                      Key Velocity Sensitivity  <b>Edit Frequency</b>                      Ratio                      Fixed Frequency  <b>Oscillator Wave</b>  <b>Detune</b>  <b>Edit EG</b>                      Attack Rate                      1st Decay Rate                      1st Decay Level                      2nd Decay Rate                      Release Rate                      EG Shift                      (EG Copy)  <b>Operator Output Level</b>  <b>Scaling</b>                      Rate Scaling                      Level Scaling  <b>Function</b>                      Poly Mode                      Pitch Bend Range                      Full Time/Fingered Portamento                      Portamento Time                      Foot Controller Volume                      Foot Controller Pitch                      Foot Controller Amplitude</p>	<p>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</p>	<p><b>Edit Effect 1 (Delay)</b>                      Delay Time                      Pitch Shift                      Feedback                      Effect Level  <b>Edit Effect 2 (Pan)</b>                      Select                      Direction                      Range  <b>Edit Effect 3 (Chord)</b>  <b>Micro Tune</b>                      Edit Octave                      Initialize Octave                      Edit Full Kbd                      Initialize Full Kbd  <b>Initialize Voice</b>  <b>Recall Edit</b></p>	<p><b>PERFORMANCE UTILITY</b>                      Voice Edit                      Initialize Performance</p>
SINGLE EDIT		SINGLE UTILITY	PERFORMANCE EDIT
	<p><b>Master Tune</b>  <b>MIDI Control</b>                      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  <b>Memory Protect</b>  <b>Combine</b>  <b>Cassette Control</b>                      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</p>		<p><b>Assign Mode</b>                      Maximum Notes                      Voice Number                      Receive Channel                      Limit/L                      Limit/H                      Detune                      Note Shift                      Volume                      Output Assign                      LFO Select                      Micro Tune                      Effect Select                      Performance Name</p>
SINGLE EDIT		SINGLE UTILITY	PERFORMANCE EDIT
			<p><b>PERFORMANCE UTILITY</b>                      Voice Edit                      Initialize Performance</p>

## PRESET VOICES

### PRESET VOICES

Bank A		Bank B		Bank C		Bank D	
1	GrandPiano	1	TrumpetS12	1	NylonGuit	1	BandBreath
2	Uprst Piano	2	Full Brass	2	Guitar S1	2	VocalNotes
3	Deep Crd	3	FlugelHorn	3	TwelveStrg	3	KrattChoir
4	HonkeyTonk	4	ChorusBras	4	Peaky Pick	4	Metalimba
5	Elec Grand	5	FrenchHorn	5	AllThatJaz	5	WaterGlass
6	Fuzz Piano	6	AttackBrass	6	HeavyMetal	6	BowedBell
7	ScoolPiano	7	SpitBoneBC	7	Old Banjo	7	>>WOW<<
8	Thump Pao	8	Horns BC	8	Zither	8	Pazzy Koto
9	LoTimeS12	9	MelloTeeor	9	ElecBass 1	9	Spc Midiot
10	HiTimeS12	10	RaspAlto	10	SqacrBass	10	Gurgle
11	ElectroPao	11	Flute	11	SysFunkBas	11	Hole ia 1
12	NewElectro	12	Pan Flout	12	ElecBass 2	12	Birds
13	DyaomitteEP	13	Bassoon	13	AnalogBass	13	NalibeNite
14	DyaoWerlie	14	Oboe	14	Jaco Bass	14	Helicopter
15	Wood Piano	15	Clarinet	15	LatelyBass	15	Flight Sim
16	Reed Piano	16	Harmonica	16	MenophBass	16	Brthbells
17	PercOrgna	17	DoubleBass	17	StadiumSol	17	Storm Wind
18	16 S 4 2 F	18	BowCello	18	TrumpSolo	18	Alarm Call
19	PompOrgna	19	BoxCello	19	BCSexyPhon	19	Racing Car
20	<6 Teaso>	20	SoloViolin	20	Lyrissy	20	Whistling
21	Fazchezza	21	HiSteing 1	21	WarmSquare	21	Space Talk
22	Small Pipe	22	LowString	22	Sync Lead	22	Space Vibe
23	Big Chorch	23	Pizzicato	23	MellowSqar	23	Timpani
24	AnalogOrga	24	Harp	24	Jazz Flute	24	PM Hi-Hats
25	This Clav	25	ReverbStrg	25	HeavyLead	25	Bass Drum
26	EZ Clav	26	SynString	26	Java Jive	26	Tabl Bells
27	Fuzz Clavi	27	Voices	27	Xylophone	27	Noise Shot
28	LiteHarpsi	28	HarmoPad	28	GreatVibes	28	Saare 1
29	RichHarpsi	29	FaafarTpts	29	Sitar	29	Saare 2
30	Celeste	30	HiSteing 2	30	Bell Pad	30	Hand Drum
31	BriteCelat	31	PercFlute	31	PlasticHit	31	Synballs
32	Squeezbox	32	BreathOrga	32	DigiAble	32	Efem Tom

## SPECIFICATIONS

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

SINCE 1887



# YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN