YAMAHA
TX802
FM TONE GENERATOR

Eight independent FM voices plus all the power of the new generation of DX synthesizers.

The TX802—part of the new generation of digital instruments from Yamaha. The new DX7IIFD and DX7IID Digital Programmable Algorithm Synthesizers have already made a tremendous impact on the music world, with specifications that take them far beyond the impressive performance power of the original DX7. Fractional Level Scaling, Random Pitch, Aftertouch Pitch Control, Microtuning, 16-key Multiple LFO Timing—these innovative features make your digital music sound more vibrant and natural than ever before.

Now this power is available in a compact, rack mountable FM Tone Generator —the TX802. Here are just a few of the extra features that take the TX802 beyond even the superlative capabilities of the new DX7IIFD/D:

■ 128 preset voices, plus 64 user and 64 cartridge voices—a total of 256 ultra-expressive FM voices.

■ Select up to 8 different voices to make one "performance", and play them simultaneously.

■ Assign each voice to a different MIDI channel, and a different note range.

■ Stereo outputs plus 8 individual outputs permit processing of individual voices.

■ Multiple graphic displays and a pull-out operation guide make editing faster and easier than ever.

THE TX802: A TRULY COLOSSAL PERFORMER

The Yamaha TX802 FM Tone Generator has to be heard to be believed. By now, everybody knows the sound of the Yamaha DX7's FM voices. Imagine that sound expanded and enhanced by the superior technology featured in the new DX7IIFD and DX7IID synthesizers. Now imagine eight different FM voices played simultaneously from your keyboard, or being independently controlled from your sequencer.

IMPROVED FM VOICE GENERATION

FM (Frequency Modulation) enables the Yamaha TX802 to generate more varied, more expressive, more natural sounds than any other tone generator. Using six-operator tone generation, it can recreate with astonishing accuracy the random timbre variations that occur in acoustic instruments. From harp to harmonica; snare drum to sax—the TX802 can do it all. In addition, it's capable of creating an enormous range of synth and sound-effect voices. The TX802 features the same voice power as the DX7IIFD/D—the same improved high-speed digital circuitry resulting in voices that are brighter, clearer and more dynamic than ever.

A MULTITUDE OF VOICES

As soon as you turn on the TX802, 128 preset FM voices are available. The TX802's preset voices have been created by professionals with long experience in voice pro-gramming, so even if you've never created an FM voice, the TX802 instantly provides you with a digital orchestra. You can, of course, edit the presets to make your own voices, as well as create voices "from scratch". Up to 64 new voices can be stored in the internal memory. You can add an additional 64 voices by inserting one of the new, large-capacity Yamaha RAM 4 Data Cartridges. This gives you a total of 256 voices, each one playable in full 16-note polyphony.

TIMBRES: CREATE YOUR OWN MULTI-VOICE SOUND

The ability to combine voices is what makes the TX802 so powerful.

TX802 VOICE LIST

BANK A				BANK B			
1 MellowHorn		33 Piano 1		1 SuperBass		33 Analog-X	
2 SilvaBrass		34 Piano 2		2 StringBass		34 FMilters	
3 ReverbBras		35 KnockRoad		3 SkweekBass		35 Phasers	
4 Tuba		36 RubbaRoad		4 SmoothBass		36 Ensemble	
5 Trombone		37 HardRoads		5 BopBass		37 MalletHorn	
6 HardTrumps		38 FullTines		6 OwlBass		38 FM-Growth	
7 Trumpet A		39 ClaviStuff		7 JazzBass		39 ElectoComb	
8 SilvaTrmpt		40 Clavi		8 HardBass		40 ClarSolo	
9 Trumpet B		41 Clavecin		9 GuitarBox		41 PitchaPad	
10 FrenchHorn		42 ClaviPluck		10 PickGuitar		42 ClaviBrass	
11 Strings		43 NasalClav		11 FingaPicka		43 WhapSynth	
12 HallOrch		44 HarpsiBox		12 LeadaPicka		44 Whasers	
13 NewOrchest		45 HarpsiWire		13 YesBunk		45 Fifths	
14 Analog-Str		46 WireStrg A		14 12 Strings		46 ElecBrass	
15 LiveStrg		47 WireStrg B		15 Classipika		47 ElectroBak	
16 BowedBass		48 TouchOrgan		16 Shami		48 HarmoSynth	
17 EleCello A		49 TapOrgan		17 VibraPhone		49 PianoBells	
18 EleCello B		50 BriteOrgan		18 DX Marimba		50 St. Elmo's	
19 Violins		51 MagicOrgan		19 Nu Marimba		51 MilkyWays	
20 Bassoon		52 ShOrgan		20 StonePhone		52 Pluk	
21 Clarinet		53 SoftOrgan		21 VibraPhone		53 TingVoice	
22 Oboe		54 PipeOrgan		22 Celeste		54 OctiLate	
23 Flute		55 PuffOrgan1		23 Swissnare		55 LateDown	
24 SongFlute		56 PuffPipes		24 Tom C4		56 Glastine	
25 SpitFlute		57 PuffOrgan2		25 CongaDrum		57 BellWarm	
26 PanFloot		58 Harmonium1		26 Tub Bells		58 RubberGong	
27 Piccolo		59 Harmonium2		27 Gong		59 Wallop	
28 Sax		60 Whisper A		28 Timpani		60 Explosion	
29 Harmonica		61 Choir		29 Claves		61 KoikeCycle	
30 Harp		62 LadyVox		30 Bells		62 Thunderon	
31 Ebonylvory		63 MaleChoir		31 SteelCans		63 Science	
32 PianoBrite		64 Whisper B		32 Handrum		64 Science	

You can assign up to 8 voices to a performance (voices, when assigned to a performance, are called "timbres"). You can then select the number of notes playable by each timbre. You can also choose whether each timbre should be output through one or both of the two Mix outputs as well as the 8 Individual outputs (which would allow you to process the sound of each timbre separately). Each timbre can have its upper and lower notes set, enabling unlimited keyboard-split possibilities. 128 performances are available any time (64 internal, 64 cartridge).

ADVANCED VOICE PROGRAMMING

The TX802's state-of-the-art specifications include several innovative features also available on the new DX7IIFD/D. These allow you to add a more natural feel to each voice.:

■ **Random Pitch.** This parameter lets you set the TX802 so that every time a note is played, its pitch is slightly different—just like an acoustic instrument. The Random Pitch can be varied for each individual voice.

■ **Pitch Bias.** In addition to controlling vibrato, tremolo and tone, the TX802's expressive Aftertouch feature lets you control pitch by fingertip pressure. Create delicate, natural vibrato or wild pitch bend effects (this parameter has a maximum range of ±4 octaves). You can also use the Breath Control feature to control pitch, so that you can bend up loud notes like an authentic wind player.

■ **Microtuning.** This feature makes the TX802 unique among Tone Generator Modules. You can actually tune each note individually, just as a piano-tuner does, to create your own scales and tunings. Eleven preset tunings allow you to play classical music in the authentic tunings of the period, use natural harmonics by selecting a "Pure" scale to be played in a specified minor or major key, or select 1/4 tone and even 1/8 tone tunings for experiments in microtonal music. From the avant-garde to the ethnic, any kind of music is possible with the TX802's Microtuning feature. You can store two of your own tunings in the internal memory, and up to 63 Microtunings on a RAM cartridge.

■ **Fractional Level Scaling.** Another innovation for the new generation of Yamaha digital instruments. Level Scaling was a well-known feature of the original DX7. It enabled level and timbre changes across the keyboard to simulate the response of acoustic instruments in their different ranges. Fractional Level Scaling lets you adjust the level of each operator in groups of three notes, allowing a much finer degree of control. With Fractional Level Scaling you can create the right sound across the entire keyboard with every voice.

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OP1   Outlvl Ofst<  A#6
alg 9 111111    +0  186
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PERFORMANCE PARAMETERS

When you edit a performance, you can do much more than select a combination of up to eight voices. A number of performance parameters give the TX802 unparalleled flexibility in combining multiple voices.

■ Assign each timbre to a different MIDI channel. This allows a number of MIDI devices to "play" the TX802. Or a sequencer could send music data on up to eight separate channels for a true multitrack performance.

■ Assign a different number of notes to each timbre. This permits an endless variety of voice permutations. For example, use 10 notes for a piano timbre, four notes for a string timbre, and two notes for a flute timbre, to create an ensemble of totally independent instrument voices.

■ Enhance the ensemble effect by adjusting the level of each timbre, transposing timbres so they are in the correct range (or to create chord effects), and detuning each timbre.

■ Finally, fatten your sound by using the Alternative Assign mode—another Yamaha innovation. This effect allows you to play a different sound for each alternate note that you play. The TX802 will step through the timbres that have been set to Alternative Assign as you play. If all timbres have been set to Alternative Assign, after the 16th note has been played, the TX802 will start over with the first voice. This function can really bring orchestral sounds to life. You can, for example, use several similar string voices, each with a slightly different tone and tuning, and as you play, the TX802 steps through the voices, note by note, adding another random element to enrich its sound.

SUPERIOR EDITING FACILITIES

To make FM voice editing easy, the TX802 has a clear, easy-to-read LCD display which can show frequency parameters, mode and carrier/modulator status for all six operators simultaneously. In addition you can look at Level Scaling and EG parameters in either a numeric or graphic display. Voice editing is made even faster by three functions which allow you to instantly copy one operator's settings to another operator—Copy EG and Scaling allows you to copy all envelope and level scaling parameters; Copy Oscillator allows you to copy frequency, detuning and oscillator mode settings; Copy Operator combines the previous two functions. And when it comes to performance editing, the TX802 allows you to instantly compare any parameter of the edited performance with the original performance.

MIDI VERSATILITY

The TX802 responds to all MIDI control signals. In addition, it's compatible with all of the MIDI control features of the DX7IIFD/D, including the new Pitch Bias feature.

You can re-assign any MIDI control signals to one of seven MIDI controls (Mod. Wheel, Breath Controller, Foot Controller, Portamento Switch, Portamento Time, Volume, Sustain). MIDI Program Changes that are received may be re-assigned to select any internal or cartridge performance.

Voice, performance, system set-up, microtuning or fractional scaling data can be individually transmitted via MIDI, adding to the TX802's ability to work with other MIDI devices.
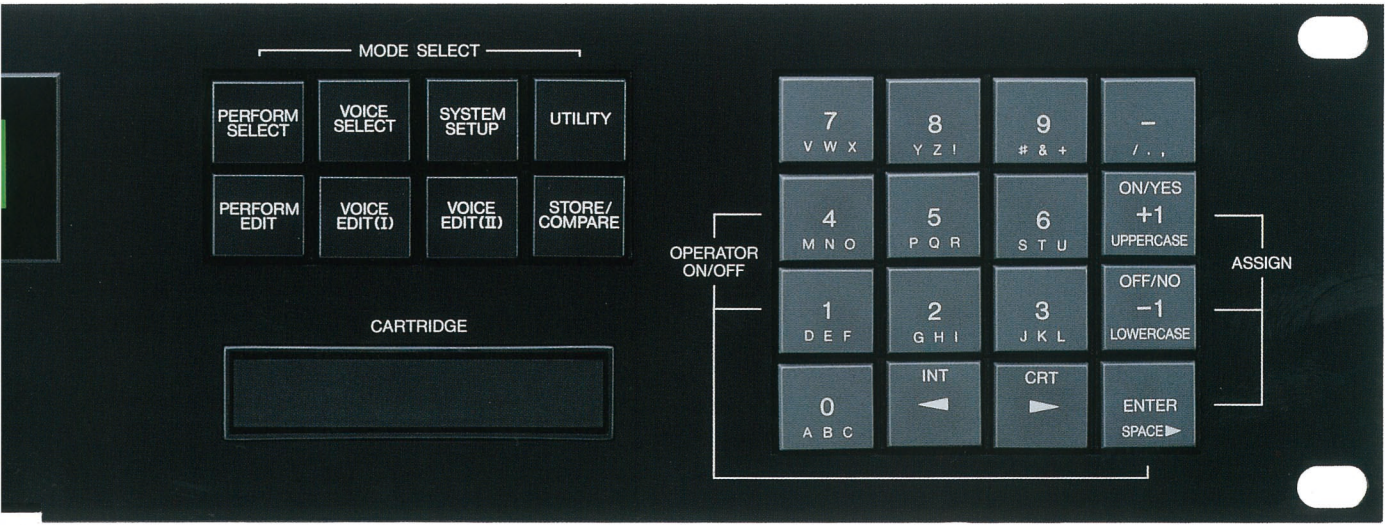
SYSTEM SETUP

The System Setup mode on the TX802 conveniently combines a number of important functions, including Master Tuning, Microtune Edit, Memory Protect, MIDI Control Number Assign and the essential MIDI Receive and System Exclusive functions. System Setup data may be saved to or loaded from a RAM Cartridge at any time.

CARTRIDGE CONVENIENCE

Large-capacity RAM 4 Data Cartridges allow you to store up to 64 voices and 64 performance combinations, plus 2 micro-tunings and 1 system setup. Or you can store up to 64 fractional scaling data groups or up to 63 micro-tunings on a single cartridge. With the TX802, you can build up an expanding library of voices which can be reloaded in seconds.

Data Cartridge **RAM4**

STYLE AND SIMPLICITY

Even with its unparalleled range of features, the TX802 is a remarkably simple unit in both style and operation. The number of front panel keys is kept to a minimum, yet their multi-function operation allows you to select modes, functions and parameter values quickly and effortlessly. The Operation Guide, Level Scaling chart, EG chart and Algorithm charts are provided on pull-out plastic sheets on the underside of the unit for quick reference, and a foldaway support strut lets you put the TX802 behind your DX7 and tilt it to an ideal angle for programming. Of course, you can mount the TX802 in a standard rack for studio or concert use.

YAMAHA MODEL TX802
PATENTS US4018121 FRANCE7509274
BRITISH1505712 JAPAN1072895
120V   15W   60Hz
MADE IN JAPAN
SER. NO.
COMPLIES WITH THE LIMITS FOR
A "CLASS B" COMPUTING DEVICE
PURSUANT TO SUBPART J OF PART
15 OF FCC RULES.

CAUTION TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
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TX802 APPLICATIONS

The TX802's MIDI IN, OUT and THRU terminals allow it to be used with other MIDI devices in a wide range of applications. Here are a few examples:

■ MIDI KEYBOARD

With a MIDI keyboard such as the Yamaha DX7IIFD/D Digital Programmable Algorithm Synthesizer, the TX802 can perform in numerous ways. For example, create an eight-way split keyboard by assigning timbres to eight different sections of the keyboard. Or create 32-note polyphony by setting the Note On/Off function on the DX7IIFD/D to ODD, and on the TX802, to EVEN. Then odd-numbered notes will be played on the DX7IIFD/D, and even-numbered notes on the TX802. Or simply layer the timbres and voices of both instruments, for a massive 10-voice combination.
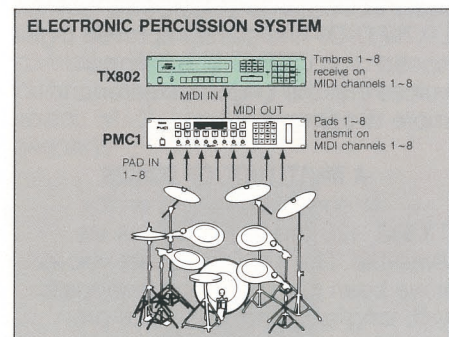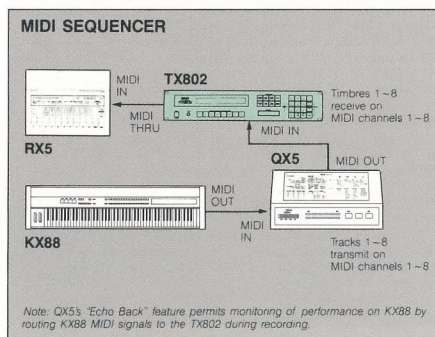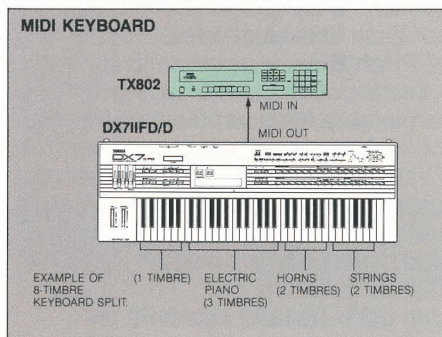
■ MIDI SEQUENCER

The QX5 Digital Sequence recorder is an ideal companion to the TX802, as it can record and play music data on eight individual channels. Each of the channels can be assigned to control one timbre to create ensemble music of up to eight parts. In this example, a KX88 MIDI Master Keyboard is used to record the music; the QX5 also controls the play of an RX5 Digital Rhythm Programmer, adding realistic percussion sounds to the voices provided by the TX802.

■ ELECTRONIC PERCUSSION SYSTEM

The Yamaha Electronic Percussion System enables drummers to make use of the TX802's powerful sounds. Its PMC1 Percussion MIDI Convertor transforms drumbeats into MIDI signals and transmits them on up to eight separate channels, making it ideal for use with the eight-timbre TX802. Play a different timbre from each electronic drum pad, and create melodies by assigning a different MIDI note number for each pad. In addition, the Electronic Percussion System's Dynamic Note Shift Feature lets you control the TX802's pitch by stick pressure. Program Change signals sent from the PMC1 can be assigned to a "global" MIDI channel which will switch all eight timbres simultaneously.

MIDI KEYBOARD

TX802
DX7IIFD/D
MIDI IN
MIDI OUT

EXAMPLE OF 8-TIMBRE KEYBOARD SPLIT.   (1 TIMBRE)   ELECTRIC PIANO (3 TIMBRES)   HORNS (2 TIMBRES)   STRINGS (2 TIMBRES)

MIDI SEQUENCER

MIDI IN   TX802   Timbres 1~8 receive on MIDI channels 1~8
MIDI THRU
RX5   MIDI IN
QX5   MIDI OUT
MIDI OUT
MIDI IN
KX88   Tracks 1~8 transmit on MIDI channels 1~8

Note: QX5's "Echo Back" feature permits monitoring of performance on KX88 by routing KX88 MIDI signals to the TX802 during recording.

ELECTRONIC PERCUSSION SYSTEM

TX802   Timbres 1~8 receive on MIDI channels 1~8
MIDI IN   MIDI OUT
PMC1   Pads 1~8 transmit on MIDI channels 1~8
PAD IN 1~8

SPECIFICATIONS

Tone Generator
FM tone generator (6 operators, 32 algorithms)
Simultaneous Note Output
16 notes, assignable to up to 8 timbres
Internal Memory
64 performance memory
64 internal (user) voice memory
128 preset voice memory
External Memory
RAM cartridge: 64 performance, 64 voice
Front Panel Controls and Terminal
Power ON/OFF switch
Tone Generator ON/OFF, Parameter Select keys (8)

Mode Select/Edit/Store keys (8)
Data Entry keys (Ten-key pads 0—9, Cursor < >, +1, −1, −, ENTER).
CARTRIDGE slot
PHONES jack
Rear Panel Terminals
MIDI IN, OUT, THRU
MIXED OUTPUTS I, II
INDIVIDUAL OUTPUTS 1—8
Cartridge Capacity
RAM1: 4K bytes (Read only)
RAM4: 16K bytes

Display
LCD: 40 characters × 2 lines (illuminated)
Power Requirements & Consumption
General Model: 220—240 V (50/60 Hz), 15 W
U.S. & Canadian Models: 120 V (50/60 Hz), 15 W
Dimensions (W × H × D)
480 × 94.5 × 287 mm (18-7/8" × 3-3/4" × 11-1/4")
Weight
4.9 kg (10 lbs 12 oz.)
Standard Accessories
MIDI Cable MIDI-03

Specifications are subject to change without notice.

For details please contact:

YAMAHA
YAMAHA CORPORATION
P.O. Box 1, Hamamatsu, Japan