YAMAHA

TONE GENERATOR

TG33

The Multi-talented MIDI Orchestra with Superior Vector Sound & Control

MIDI sequencing has made it possible to create and modify multi-voice musical arrangements with unprecedented ease and versatility. You have to choose your tone generators carefully, however, to provide the type of sound and number of voices you need for your music, plus the flexibility to fit in with your personal production style and procedures. Yamaha is proud to offer a tone generator that just may have *everything* you need: the remarkable TG33.

The TG33 combines Yamaha's advanced AWM sample playback technology with high-performance FM tone generation through an innovative vector synthesis system that allows you to create and control synthesized sound in a very intimate, "human" way. The vector control can be used to blend sounds manually in real time, or you can record these vector sweeps and they will play back automatically whenever you play a note.

All this superb sound and control is optimized for use in MIDI sequencer systems with a comprehensive multi timbre mode that outperforms any other in this class. Up to 16 different "instruments" can be controlled simultaneously on different MIDI channels, while 32-note polyphony and Yamaha's advanced Dynamic Voice Allocation system ensure that enough notes will be available for all instruments in even complex arrangements. You also have considerable control of over each individual voice, including the ability to assign the voices to dual stereo outputs.

Whether you're preparing to put together your first MIDI sequencer system or are planning to expand an existing setup, the Yamaha TG33 Tone generator should be at the top of your checklist.

- Yamaha AWM and FM tone generators for superior sound and tonal versatility.
- Fully programmable 16-channel multi-play mode with 32-note polyphony provides extraordinary versatility for sequencer-driven applications.
- 16 memory locations for multi-play setups.
- 2-element or 4-element voice architecture brings AWM and FM waveforms together.
- Vector control for 2-axis control of element level and detuning.
- Dynamic level and detune vectors can be recorded easily in real time.
- 128 preset AWM waveforms and 256 preset FM waveforms provide an extensive library of sonic "building blocks" from which to create new voices.
- 128 preset voices and 64 user voice memory locations.
- External memory cards provide limitless backup and storage capability.
- Easy-edit features make creating new voices quick and virtually programming-free.
- When necessary, detailed, in-depth programming parameters are also available.
- 16 internal digital effects including reverb, delay and distortion.
- Dual stereo outputs.
- Desk-top or rack-mount use — rack-mount adapters provided.

AWM + AFM × Vectors for Superior Sound & Control

Two Tone Generators in One

The TG33 incorporates two essentially different synthesis systems: AWM and FM. AWM — "Advanced Wave Memory" — is a sophisticated sampling technology that allows high-fidelity reproduction of digitally recorded "live" sound. FM is Yamaha's proven Frequency Modulation synthesis technology which is capable of creating extraordinarily warm, vibrant simulations of actual instruments, as well as an infinite variety of original sounds. "Vectors" bring these two tone generation systems together in many expressive ways.

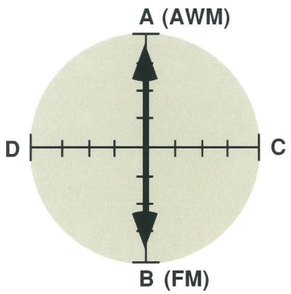
The Elements of Vector Voices

TG33 voices can have either a 2-element or 4-element configuration. Each "element" is actually an independent sound or "waveform." A 2-element voice combines one AWM and one FM waveform, while a 4-element voice combines two waveforms of each type. The TG33 has 128 preset AWM waveforms and 256 preset FM waveforms that can be assigned to the appropriate elements in a voice, for an immense range of possible combinations. Vector control allows the 2 or 4 different waveforms in a voice to be blended and detuned in a variety of ways — manually or automatically.

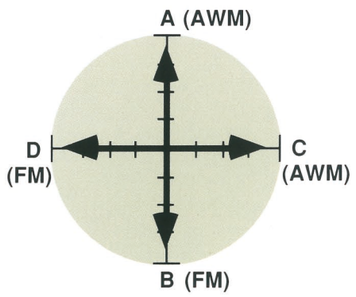
A Choice of Vectors: Level and Detune

The TG33 vector control can be used to control either level or detune along the vertical axis if a 2-element voice is selected, or along both the vertical and horizontal axes if a 4-element voice is selected.

2-ELEMENT VOICE

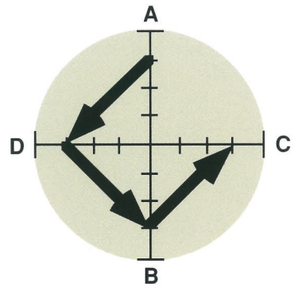


4-ELEMENT VOICE

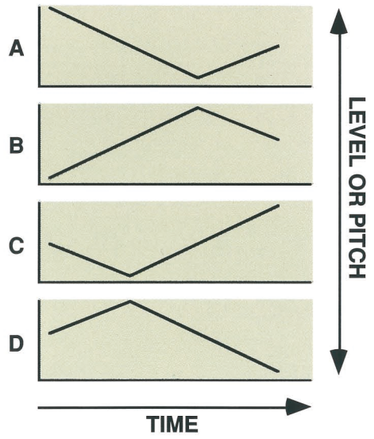


When level vector control is selected, moving the control towards one element increases the level of that element while decreasing the level of the others proportionally. The VECTOR CONTROL works in a similar way when detune control is selected — moving the control towards one element increases the pitch of that element while decreasing the pitch of the others. The following diagrams should give you a rough idea of how the level or pitch of each element in a 4-element voice is affected by VECTOR CONTROL motion.

VECTOR CONTROL MOTION



LEVEL OR PITCH CHANGE



This system allows an extraordinarily broad range of expressive effects, from subtle blending of several similar sounds to wild sweeps and bends between widely contrasting tones.

Dynamic Vectors

Real-time manual vector control means unprecedented expressive freedom, while dynamic vectors that play automatically whenever a note is played can give your music a new dimension of life and animation. Anything you can do manually with the vector control can be recorded as a dynamic vector. "Recording" a dynamic vector is as simple as selecting the level or detune vector record function and playing the vector in real time. If you want to go into more detail, a number of editing functions let you fine tune your dynamic vectors to achieve precisely the sound you want.

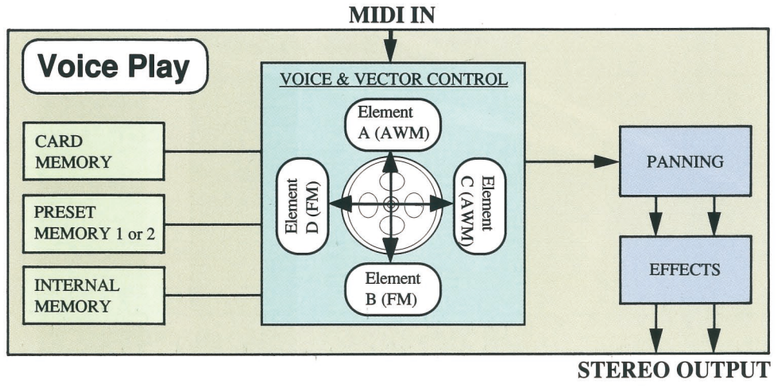
You can even use manual and dynamic vectors simultaneously. If you select manual level vector control, a dynamic detune vector will continue to play automatically. Choose manual detune vector control and a dynamic level vector will play in the background.

Instant or In-depth Voice Editing

There's actually much more to TG33 voices than just vectors. You have a wide range of programming parameters with which you can shape the individual elements in a voice to precisely match your musical requirements. You can, for example, program complex amplitude envelopes for each element from scratch, choose from a range of preset generic envelopes that can later be edited for fine control, or simply use the original envelopes that are included with each of the TG33's 384 internal waveforms. A range of other voice editing parameters give you extensive control if you want to get serious about programming, but the TG33 is also designed to make creating new voices simple and fun. Innovative random element selection and vector generation functions, for example, can help you to create outstanding new voices with almost no programming at all. Global editing functions like attack and release parameters that simultaneously bias the attack and release rates of all element envelopes also contribute to fast, easy voice creation. Editing is further facilitated by a rotary data entry control that lets you select parameter values with a quick twist.

Your original voices can be stored in any of 64 internal user memory locations, or on convenient external Yamaha memory cards that plug into the TG33's card slot.

TG33 VOICE PLAY MODE GLOBAL VIEW



128 Ready-to-play Presets

Although programming your own voices isn't difficult, Yamaha has provided a range of 128 superb preset voices that you can play right away with *no* programming. Most feature dynamic vectors that give them an extraordinary sense of life and motion — but you can also use the vector control to inject a good dose of original expression into your music.

Built-in Effects Add Essential Ambience

Yamaha is already firmly established as the leader in digital signal processing for professional music and production applications. The TG33 gives you a healthy helping of this ambience-enhancing capability built in. You have direct access to 16 effect programs including reverb, delay, early reflection, and distortion, to give your sound the extra impact it deserves.

1.	Rev Hall	(Reverb Hall)
2.	Rev Room	(Reverb Room)
3.	Rev Plate	(Reverb Plate)
4.	Rev Club	(Reverb Club)
5.	Rev Metal	(Reverb Metal)
6.	Delay 1	(Short Single Delay)
7.	Delay 2	(Long Delay)
8.	Delay 3	(Long Delay)
9.	Doubler	(Doubler)
10.	Ping-Pong	(Ping Pong Delay)
11.	Pan Ref	(Panned Reflections)
12.	Early Ref	(Early Reflections)
13.	Gate Rev	(Gated Reverb)
14.	Dly&Rev 1	(Delay & Reverb 1)
15.	Dly&Rev 2	(Delay & Reverb 2)
16.	Dist&Rev	(Distortion & Reverb)

16 Voices & 32-note Polyphony for Serious Sequencing

16-channel Multi-timbre Mode

If you plan to use the TG33 as a tone generator in a sequencer-based MIDI system, you'll find that its MULTI PLAY mode offers everything you need. Different voices can be assigned to all 16 MIDI channels and controlled independently from a sequencer, music computer, or other controller transmitting on the appropriate channels.

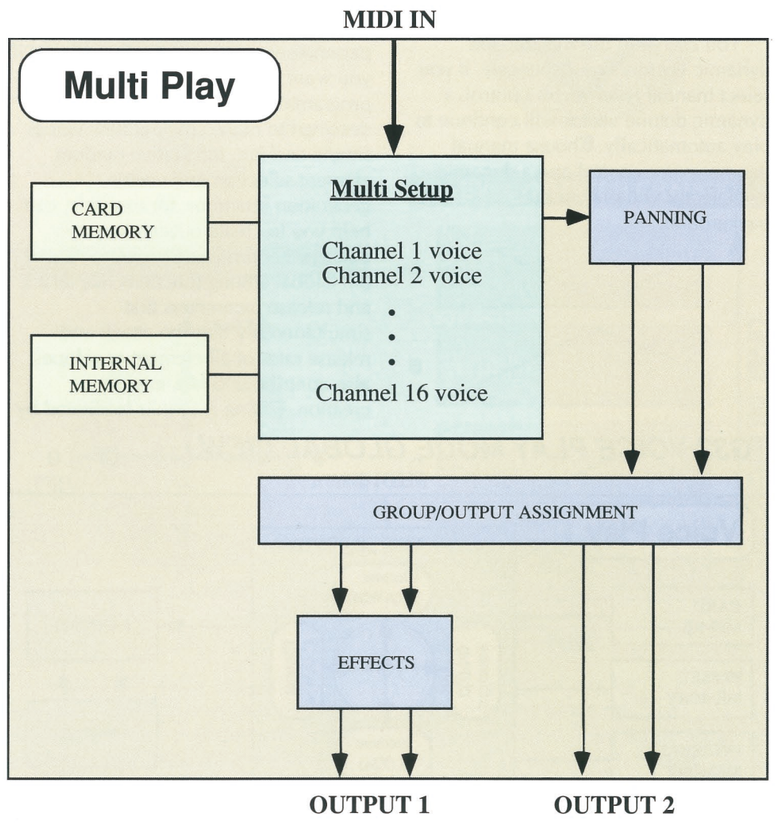
The TG33 also provides a considerable amount of control over each voice in a 16-channel multi play "setup." In the MULT EDIT mode you can individually program volume, detune, note shift, pan, and output assignment for each voice. Effect type, balance, and send level parameters that affect the entire multi-play setup are also provided. The TG33 and a sequencer are all you need to go into full-swing music production.

The TG33 provides 16 internal memory locations for complete "MULTI PLAY" setups. This allows you to create up to 16 original "orchestras" with different combinations of voices that can be recalled whenever needed. MULTI PLAY setups can also be stored on external memory cards in the same way as ordinary voices.

32-note Polyphony & Dynamic Voice Allocation

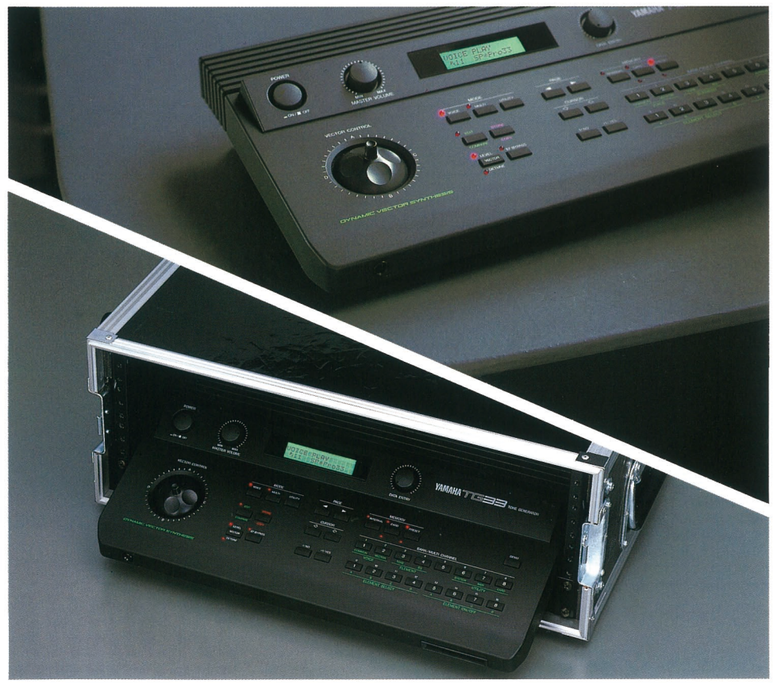
The TG33's ability to produce up to 32 notes simultaneously is a tremendous advantage for multi-timbre operation — you can play complex compositions and still have enough notes for all the instruments. The TG33's Dynamic Voice Allocation automatically ensures that the right number of notes are allocated to the right instrument at the right time. If all 16 voices are played at once, for example, each can produce a maximum of two notes. On the other hand, if only one voice is being played the Dynamic Voice Allocation feature allows 32 notes to be played simultaneously by that one voice. In other words, Dynamic Voice Allocation keeps track of how the individual instruments in a multi-play setup are being played, and allocates polyphony accordingly.

TG33 MULTI PLAY MODE GLOBAL VIEW



Dual Assignable Stereo Outputs

Each voice in a 16-channel multi-play setup can be assigned to one of two "groups," which can then be assigned to either or both pairs of stereo outputs provided on the TG33 rear panel. You can simply separate the voices in your setup into two stereo groups, or combine group assignment with pan to individually assign voices to the four output jacks.

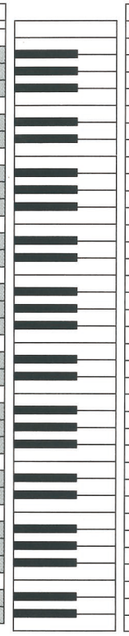


Built-in Drums

In most MIDI sequencer systems a rhythm machine is indispensable. If you have a TG33, however, the rhythm machine is essentially built in. The TG33 supplies several drum and percussion kits in the form of a single voices, with individual instruments assigned to different MIDI note numbers. The TG33 is a truly versatile, self-contained voice source that can be a valuable addition to any MIDI-based music production system.

Voice Number P1 87 DR:Kit: Drum-set Voice

Key	Wave Name
A#5	Cracker
G#5	Water Drop
F#5	Coin
D#5	High Scratch
C#5	Low Scratch
A#4	Cowbell 2
G#4	Bamboo
F#4	Low Whistle
D#4	High Agogo
C#4	Claves
A#3	High Timbales
G#3	Oool
F#3	Mute Conga
D#3	Ride
C#3	Splash
A#2	Crash 1
G#2	Shaker
F#2	Claps
D#2	Rim
C#2	SD 2
A#1	Cross Sticks
G#1	BD 2
F#1	E. Tom 3
D#1	Triangle open
C#1	Triangle closed



Key	Wave Name
C6	Metal Hit
B5	High Timpani
A5	Low Timpani
G5	Slam 2
F5	Slam 1
E5	Reverse Cymbal
D5	SD 5
C5	SD 4
B4	Crash
A4	Bottle
G4	High Whistle
F4	High Cuica
E4	Low Cuica
D4	Low Agogo
C4	Finger snaps
B3	Tambourine
A3	Low Timbales
G3	DigiAtack
F3	High Conga
E3	Low Conga
D3	Cup
C3	Crash 2
B2	HH open
A2	HH closed
G2	Cowbell 1
F2	Tom 4
E2	SD 3
D2	Tom 3
C2	Tom 2
B1	Tom 1
A1	BD 3
G1	E. Tom 4
F1	E. Tom 2
E1	E. Tom 1
D1	SD 1
C1	BD 1

Other Features

- Comprehensive MIDI implementation including bulk dump functions.
- 16-character × 2-line backlit LCD display is easy on the eyes.
- Master volume control and headphone jack.

Preset voice list

P1

1	NAME
1	SP*Pro33
2	SP*Echo
3	SP*BelSt
4	SP*Full
5	SP*Ice
6	SP*Dandy
7	SP*Arkle
8	SP*BrVec

2	NAME
1	SP*Matrx
2	SP*Gut
3	SP*Omni
4	SP*Oiled
5	SP*Ace
6	SP*Quire
7	SP*Digit
8	SP*Swell

3	NAME
1	SC:Groov
2	SC*Airy
3	SC*Solid
4	SC*Sweep
5	SC*Drops
6	SC*Euro
7	SC*Decay
8	SC:Steel

4	NAME
1	SC*Rude
2	SC*Bellz
3	SC*Pluck
4	SC*Glass
5	SC*Wood
6	SC*Wire
7	SC*Cave
8	SC*Wispa

5	NAME
1	SL*Sync
2	SL*VCO
3	SL*Chic
4	SL:Mini
5	SL*Wisul
6	SL*Blues
7	SL:Cosmo
8	SL*Super

6	NAME
1	ME*Vecta
2	ME*NuAge
3	ME*Hit+
4	ME*Glace
5	ME*Astro
6	ME*Vger
7	ME*Hitch
8	ME*Indus

7	NAME
1	SE*Mount
2	SE*5.PM
3	SE*FlyBy
4	SE:Fear
5	SE:Wolvs
6	SE*Hades
7	SE:Neuro
8	SE*Angel

8	NAME
1	SQ:MrSeq
2	SQ:It
3	SQ*Id
4	SQ*Wrapa
5	SQ*TG809
6	SQ*Devol
7	DR:Kit
8	DR*EFX

P2

1	NAME
1	EP*Arlad
2	AP:Piano
3	EP*Malet
4	AP*ApStr
5	EP:DX6op
6	EP*Pin
7	EP*New DX
8	EP*Fosta

2	NAME
1	OR*Gospl
2	OR*Rock
3	OR*Pipe
4	OR*Perc
5	KY*Squez
6	KY:Hrpsi
7	KY*Celst
8	KY:Clavi

3	NAME
1	BA*Slap
2	BA*Atack
3	BA*Seq
4	BA*Trad
5	BA:Pick
6	BA*Syn
7	BA:Rezz
8	BA*Unisn

4	NAME
1	BA:Fingr
2	BA*Frtls
3	BA:Wood
4	PL*Foksy
5	PL*12Str
6	PL*Mute
7	PL*Nylon
8	PL*Dist

5	NAME
1	BR*Power
2	BR*Fanfr
3	BR*Class
4	BR*Reeds
5	BR*Chill
6	BR*Zeus
7	BR*Moot
8	BR*Anlog

6	NAME
1	BR:FrHrn
2	BR:Trmpt
3	BR*Tromb
4	WN*Sax
5	WN:Pan
6	WN:Oboe
7	WN:Clart
8	WN:Flute

7	NAME
1	ST*Arco
2	ST:Chmbr
3	ST*Full
4	ST:Pizza
5	ST*CelSt
6	ST*Exel
7	ST*Synth
8	ST*Eroid

8	NAME
1	CH*Modrn
2	CH*Duwop
3	CH*Itopy
4	CH*Astiz
5	PC:Marim
6	PC:Vibes
7	PC*Bells
8	PC*Clang

Notes:

SP = Synth Pad
SL = Synth Lead
ME = Musical Effect
SC = Synth Comp
SE = Sound Effect
SQ = Staccato Sound for Sequencing
DR = Drum Voice
EP = Electric Piano
AP = Acoustic Piano
BR = Brass
OR = Organ
KY = Keyboards
WN = Winds
BA = Basses
ST = Strings
PL = Plucked
CH = Choir
PC = Percussion

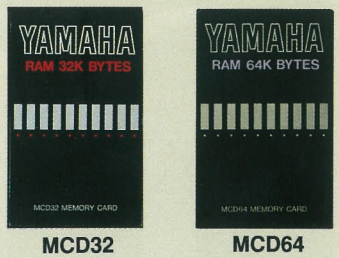
TG33 Specifications

Tone Generator Systems	AWM (Advanced Wave Memory) & FM (Frequency Modulation)
Maximum simultaneous notes	32 notes (64 elements)
Maximum simultaneous timbres	16 timbres
Internal Memory	Wave ROM: 128 preset AWM & 256 preset FM waveform Preset ROM: 128 preset voices Internal RAM: 64 user voices & 16 user multi setups
External Memory	Voice & Multi data: MCD64 or MCD32 — write & read
Displays	16-character x 2-line backlit LCD
Controls	MASTER VOLUME, VECTOR CONTROL
Keys & Switches	POWER ON/OFF; MODE VOICE, MULTI and UTILITY; EDIT/COMPARE; STORE/COPY; VECTOR PLAY LEVEL/DETUNE; EF BYPASS ON/OFF; PAGE ◁ and ▷; CURSOR ◄ and ►; –1/NO and +1/YES; MEMORY INTERNAL, CARD and PRESET; BANK/MULTI CHANNEL 1–16 (VOICE COMMON and VECTOR; ELEMENT TONE and EG; UTILITY SYSTEM, MIDI and CARD; ELEMENT SELECT A, B, C and D; ELEMENT ON/OFF A, B, C and D)
Connectors	DC 10V IN; PHONES; OUTPUT1 (L mono/R) and OUTPUT2 (L/R)
MIDI Connectors	IN, OUT, THRU
Power Requirement/Consumption	DC 10V, 700 mA
Dimensions (W x H x D)	439 x 80.4 x 229.9 mm
Weight	2.8 kg

All specifications subject to change without notice.

Optional Memory Cards

Yamaha MCD64 and MCD32 Memory Cards are light and compact, providing convenient external storage for your original TG33 voices and multi-play setups.



MCD32 **MCD64**

For details please contact:

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

LCK-9005 9008130 CDC ◇2 Printd in Japan