

Instruments, Electronic

Latin music has had its greatest impact on electronic instruments in percussion sounds, beats, and accompaniment patterns. These were first incorporated into electronic organs and other **keyboard instruments**, and later in drum machines, sound modules, sample and loop libraries, and computer programs.

Rhythm machines

During the period 1959-1990 many electronic instruments were built that included Latin rhythms and percussion sounds, giving users access stock patterns and instruments that could be played at home, in the studio, and on stage. These devices and the resources they contained contributed to popularizing Latin music and securing it in the musical culture. Percussion modules were called “rhythm machines” or “beat boxes” and made by independent electronic companies, who licensed customized versions to organ companies. The first commercial product, released in 1959, was the Wurlitzer Sideman. It had 10 electronic sounds that were played by a set of rotating discs, and offered the user the choice of 12 preset rhythms. Tadashi Osanai, Japan’s premier accordion player, and Tsutomu Katoh, a successful nightclub owner, formed Keio Gijutsu Kenkyujo Ltd. to improve upon the Sideman. In 1963 they introduced their first product, a disc rotary electric auto rhythm machine called the Donca-Matic DA-20. It was a groundbreaking instrument and sold well in Japan. Later versions, including the electronic solid state Donca-Matic DE-20 and subsequent rhythm machines such as the Stageman and Mini-Pops series were equally successful in the United States. These devices offered basic rhythm patterns with variations, and included Latin rhythms such as samba, rumba, bossa nova, and tango. By 1968 the company became known as Korg. Their first products were driven by popular dance music of the time, and included Latin dance rhythms.

Korg is not the only Japanese music company to get its start making rhythm machines. Ace Electronic Industries showed the R1 Rhythm Ace at the NAMM show in Chicago in 1964. It was perhaps the first fully transistorized rhythm machine and was played by pressing buttons to perform individual sounds, but did not become commercially successful because it did not have pre-preprogrammed patterns. In 1967 a diode matrix was added in order to produce patterns in what became a popular instrument called the FR1 Rhythm Ace. Ace changed its name to the Roland Corporation in 1972. The first product from the new company was the TR77, whose 10 percussion sounds included congas, claves, and maracas. Samba, bossa nova, mambo, cha-cha, beguine, tango, and rumba were among the 34 preset rhythm patterns. Among the 14 analog imitation sounds of Roland’s CompuRhythm CR-78 (1978) were maracas, claves, bongos, conga, and guiro. It offered four-note polyphony, and was the first musical instrument with a microprocessor, which allowed users to devise and store their own patterns in four memory locations.

Drum Machines

As rhythm machines became more sophisticated they became known as drum machines. Expressivity, number of sampled instruments, and pattern memories increased, making it possible to better simulate a drummer's performance. Buttons became standard on the devices, allowing users to program beats by playing patterns live, rather than by step editing or placing notes on a grid. Some models had velocity sensitive buttons, which responded with variations in dynamics, and finer time resolution allowed users to obtain results that were less mechanical sounding. During the 1980s many user-programmable drum machines were manufactured. The Linn LM-1 Drum Computer was the first drum machine to use digital samples of acoustic drums, which made the instrument sounds much more realistic. Among its twelve samples were cabasa, congas, and clave.

E-mu Systems released the Drumulator in 1983, their first ROM-based sample instrument, and the first drum machine retailing for under \$1,000. Among its 12 sounds were a clave and cowbell. Two entrepreneurs formed Digidrums to manufacture chips that could be swapped for the ones that came in the Drumulator, including African percussion and Latin percussion sets. The profit from their enterprise enabled them to launch a new company called Digidesign, which went on to develop Pro Tools.

The Kawai XD-5 was released in 1990—a percussion synthesizer with 39 Latin percussion instrument sounds among its 256 waveforms, which could then be processed with filters and amplitude controls. The Roland TR-727 was a Latin-music version of the popular TR-07, featuring the same hardware but with Latin percussion samples instead of a drum set.

Sound Modules and Samplers

Not all users needed the functions drum machines offered. Keyboard players, composers using computer sequencers, and drummers with percussion controllers just needed samples to trigger. As RAM memory was still relatively expensive, samples continued to be burnt in ROM chips, but users who did not need the buttons and pattern memories of drum machines found percussion modules to be more economical and to have a wider variety of sounds. Rack mountable units such as E-mu's Proteus and Procussion offered a range of Latin percussion instruments that could be triggered by MIDI data. E-mu's Carnival Latin MIDI sound module offered the greatest selection, including Latin sounds of salsa, songo, merengue, cumbia, banda, Mexican pop, Tejano, Brazilian, Brazilian pop, Latin jazz, Afro-Cuban, and Latin dance, and Afro.

The General MIDI specification was added as an extension to the original MIDI specification in 1991, and was first implemented in the Roland Sound Canvas SC55. Among its features were a fixed collection of instruments (including instruments to perform certain types of Latin music such as vibraphone, marimba, tango accordion, pan flute, and agogo). In addition, a layout of percussion instruments included tambourine, cowbell, 2 bongos, 3 congas, 2 timbales, 2 agogos, cabasa, maracas, 2 samba-style whistles, 2 guiros, claves, 2 wood blocks, 2 cuicas, castanets, and 2 surdos. The GM specification guaranteed that all compliant devices would have the same standard set of sounds mapped to the same notes, guaranteeing that sequences played on any system

would have the same instruments and percussion sounds, facilitating the incorporation of Latin percussion instrument sounds in video games, ring tones, web pages, CD-ROMs, etc.

Some musicians were not satisfied with the stock sounds that came in the ROM chips of drum machines, sound modules, and keyboards. Samplers allowed users to record their own sounds, or load libraries of sounds from disk into RAM memory. Users had a choice of a number of sound libraries including Latin percussion instruments developed by the sampler manufacturers and third parties.

Software

By the late 1990s the CPUs of personal computers had become fast enough to synthesize sound and play back prerecorded sounds. As a result personal computers began to take the place of dedicated drum machines, synthesizers, and samplers. Libraries often came in more than one format, so that they could be used in different programs such as Reason, GarageBand, Logic, Acid, and Pro Tools. Hundreds of samples and loops provided more variety, and in addition to steady grooves included introductions, fills, and endings. One company, Sonic Reality began in 1996 to meet the demands of musicians looking for realistic playable multi-sampled instruments and loops to use in their music. The sound development company licensed some of the popular sounds used in keyboards, modules, and expansion cards from Alesis, Roland, Yamaha, and others, and over the years provided sounds for many popular software companies such as IK Multimedia, Native Instruments, Propellerheads, Digidesign, M-Audio, Yamaha, Cakewalk, Steinberg, and more. Their collections included Latin, Afro-Cuban, Brazilian, and Caribbean grooves. Founded in 1993, Q Up Arts' specialty was world and ethnic audio content. They released the Latin Groove Factory in 1997, which included loops in a wide variety of Latin styles. Its componentized content focused on percussion, and allowed user to build up grooves from a simple shaker and conga loop to a full-blown rhythm section. Such libraries have been used in many feature films, TV shows, games, and CDs.

Many musicians created their own samples and incorporated recordings of other songs in their work. The Nortec Collective, a group of artists and DJs from Tijuana mixed samples of accordions and tubas playing norteño music with techno drum machines and synthesizers. They were big supporters of new technologies and one of the most influential groups playing electronic music that can be called "Latin." Other artists include the Pinker Tones, Monareta, DJ Bitman, Kobol, and Bomba Estereo. Due to the nature of the medium, electronic music is easily transmitted over the Internet, making it possible for Latin music produced anywhere in the world to be heard by audiences in the United States.

Computer programs offer some of the same features as auto-accompaniment features built into some **keyboard instruments**. Band in a Box, the most popular, was designed to take chord progression input from users and generate rhythm section accompaniments, solos, and lead lines in a variety of Latin styles. The same company, PG Music, released the Latin Pianist, which demonstrates Rebeca Mauleón-Santana playing over 50 Latin

piano songs in 20 styles such as salsa, conga, cumbia, merengue, Latin jazz, mambo, and partido alto accompanied by a rhythm section using the same GM percussion samples as Band in a Box. Toontrack Studios in Sweden specialized in virtual percussion instruments. They released an expansion pack for their EZdrummer software sampler called Latin Percussion, with a standard Latin percussion set along with pre-played MIDI files. Latin World was a Native Instruments Intakt plugin instrument providing a complete Latin band played from a MIDI keyboard, providing easy access to drum, bass, guitar, and horn section loops with a variety of chord progressions in a large library of styles including batucada, bomba, samba reggae, and condomble recorded at various tempos. M-Audio's Latigo instrument plugin provided similar functions, allowing players to build up a percussion ensemble by holding down one or more keys on the keyboard.

Electroacoustic Music

Latin American composers have been involved with experimental electronic music since the 1950s, particularly from Argentina, Brazil, and Mexico, where a number of facilities were established. At CLAEM, located in Argentina, Fernando von Reichenbach invented a device to convert graphic scores into electronic control signals. Latin American composers have also worked in studios in the United States. For example, Mario Davidovsky composed tape pieces at the Columbia-Princeton Electronic Music Center in New York, and in 1971 won a Pulitzer Prize for his *Synchronisms No. 6* for piano and electronic sound.

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Record Labels: Nacional Records, Static Discos, Milrecords

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FURTHER READING

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WEBSITES

remezcla.com

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