

# EXHIBIT C

# Oberheim Electronics

**Oberheim Electronics**, is a manufacturer of audio synthesizers and a variety of other electronic musical instruments. Founded in 1969<sup>[1][2]</sup> by Tom Oberheim (a former designer and contract manufacturer for Maestro).<sup>[3]</sup>

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## History and Products

### Oberheim Electronics

Originally a manufacturer of electronic effects devices (most notably the Maestro phase shifter),<sup>[3]</sup> and briefly an ARP Instruments dealer,<sup>[3]</sup> Oberheim went on to create several ground-breaking products in the early days of synthesizers and electronic music including the DS-2 (one of the first digital music sequencers) and the Synthesizer Expansion Module (SEM).

### Oberheim polyphonic synthesizers

Oberheim's Two-voice TVS-1, Four-voice FVS-1 in 1975,<sup>[1]</sup> and Eight-voice in 1977,<sup>[4]</sup> (which was the four voice frame with an external 4 SEM module) were among the first commercially available polyphonic synthesizers. Configurations were based on the SEM. The Two-voice synthesizer included a two channel voltage controlled sequencer, and the Four-voice and Eight-voice machines included a rudimentary Programmer, capable of recalling sound settings.

### Oberheim Electronics



<b>Founded</b>	1969
<b>Headquarters</b>	Los Angeles, California
<b>Key people</b>	Tom Oberheim, founder
<b>Products</b>	Signal processing synthesizers, sequencers, drum machines



SEM (1974–1979, 2009–)



Oberheim 4 Voice (1975–1979)

Oberheim's later synths like the OB-X and OB-Xa abandoned the relatively bulky SEMs in favor of individual or common voice cards, and common cabinetry and power supplies. Oberheim continued to make synthesizers until the late 1980s. Other notable Oberheim synthesizers include the OB-1 (monophonic), the OB-8, the Xpander, the Matrix-6, the Matrix-12, and the Matrix-1000 marketed after the acquisition by Gibson.<sup>[5][6]</sup>



OB-1 (1978/1979)



OB-X (1979)



Xpander (1984)



Matrix-6 (1985)

**Oberheim drum machines**

Oberheim's DMX drum machine, a staple of early hip-hop music,<sup>[7]</sup> lent its name to the Producer Davy DMX, and musician DMX Krew, and is still used in dancehall reggae music.



DMX (c.1981)



DX (c.1983)



Prommer (1984)

Both Marcus Ryle and Michel Doidic worked for Oberheim as instrument designers before helping develop the Alesis multitrack digital tape recorder for Alesis, (a 'prosumer' grade digital recording multitrack deck designed to compete with the Tascam DA series of digital multitracks) and then moving on to found Line 6 together.<sup>[8]</sup>

**Oberheim/Gibson**

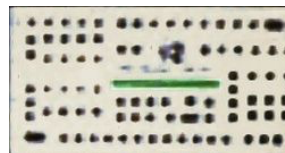
Oberheim went bankrupt and was acquired in 1985 by a group of lawyers who changed the name to Oberheim ECC. Tom was creatively still at the helm, although he left the company within a couple of years to start a new venture called Marion Systems. After a second bankruptcy in early 1988, Gibson Guitar Corporation, a larger musical instrument manufacturer (who, incidentally, also owned the Moestro brand), acquired



Matrix-1000 (1988)



Oberheim / Gibson  
Echoplex Digital Pro  
[9]



OB-Mx (1994)

Oberheim. Gibson, at the direction of Keith McMillen (Gibson's vice president and chief of R&D), then produced Oberheim OB-Mx<sup>[10]</sup> in collaboration with D.N. "Lynx" Crowe and Don Buchla; the Oberheim Echoplex Digital in collaboration with Aurisis Research (Matthias Grob, Kim Flint, Eric Obermühlner); and re-released the Oberheim Strummer and Matrix 1000.

Gibson had split from its parent company, Norlin, in 1986. Norlin handled distribution for Oberheim's major competitors Moog Music.

## Oberheim/Viscount

The trademark was later licensed to Viscount International, an Italian digital-organ producer. Viscount developed in a few years various instruments that were very innovative for the time and are still in demand: the digital synth Oberheim OB\*12,<sup>[11]</sup> the guitar DSP GM-1000 with lots of effects,<sup>[12]</sup> the MC series of master keyboards,<sup>[13]</sup> and the OB3<sup>2</sup>, a portable and inexpensive imitation of the popular Hammond series of organs.<sup>[14]</sup>



OB\*12 (2000)

## TomOberheim.com

In 2009, Tom Oberheim announced that he was manufacturing a new version of his classic analog SEM.<sup>[15][16][17][18]</sup>

In 2011–2012, Tom Oberheim announced a four-voice SEM called "Son Of 4 Voice" (SO4V),<sup>[19]</sup> as well as an updated version of the classic Two-Voice known as the Two-Voice Pro.<sup>[20]</sup> The "Son Of 4 Voice", also known as SO4V, the Two-Voice Pro started shipping in 2014.<sup>[21]</sup>



MIDI-to-CV  
converter panel  
for the SEM



EuroModular SEM (2015)



Two-Voice Pro (2015)

At the NAMM show of January 2016, Tom Oberheim announced the Dave Smith Instruments OB6, a collaboration with Dave Smith which resulted in Tom Oberheim's first voltage-controlled multi-voiced polyphonic synth since the 1980s; Tom Oberheim designed the VCO/VCF part replicating his SEM module, while control features, arpeggiator, sequencer and effects processing were designed by Smith using his Prophet platform.<sup>[22]</sup>

## See also

- Tom Oberheim

- Gibson Guitar Corporation
- Viscount

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## External links

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- [Oberheim Abbey \(http://forum.onecenter.com/cgi-bin/forum/forum.cgi?fid=analog\)](http://forum.onecenter.com/cgi-bin/forum/forum.cgi?fid=analog) Synthesizer Discussion Forum
  - [Oberheim Zone \(http://www.synthzone.com/ober.htm\)](http://www.synthzone.com/ober.htm) at SynthZone.com
  - [Oberheim overview \(http://www.synthsale.com/brands/oberheim\)](http://www.synthsale.com/brands/oberheim) at SynthSale
  - [Viscount Italy \(http://www.viscount.it\)](http://www.viscount.it) main site
  - [TomOberheim.com \(http://www.tomoberheim.com\)](http://www.tomoberheim.com) The new Oberheim site
  - [Tom Oberheim \(https://www.namm.org/library/oral-history/tom-oberheim\)](https://www.namm.org/library/oral-history/tom-oberheim) NAMM Oral History Interview (2005)
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