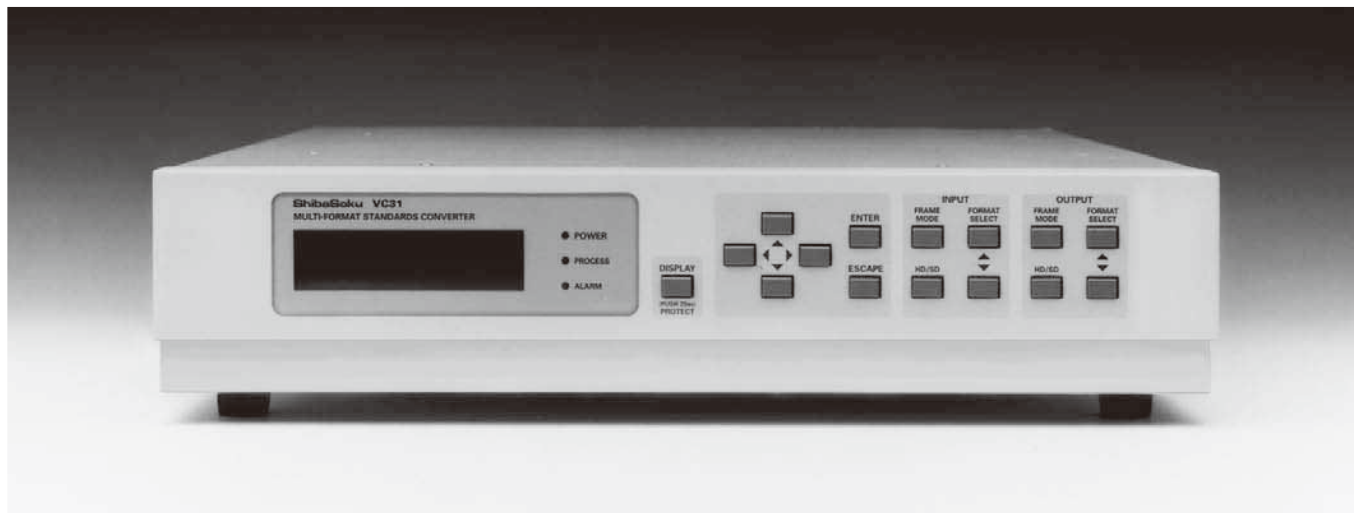# VC31

BROADCAST INSTRUMENTS

MULTI-FORMAT STANDARDS CONVERTER

General

The VC31 uses motion vectors to make motion compensation and convert scanning lines, fields and pixels. Besides performing mutual conversions between SDTV and HDTV, the VC31 is also capable of cross conversion for SDTV and HDTV. The VC31 offers superior cost performance with its low price, compact size, and overall quality of converted pictures. It is therefore particularly suited for television program editing and exchanges at overseas locations. Customers can freely select conversion formats, or various types of conversion formats can be easily upgraded.

Features

● SDTV format conversion, HDTV format conversion, HDTV up conversion, and HDTV down conversion are available.
● Motion compensation utilizing motion vectors
● Minimizes resolution deterioration
● Compact size
● Easy upgrading
● Easy operation using LCD panel display
● Supports embedded audio

Specifications

● Conversion functions

OUTPUT / INPUT		SDTV		HDTV			
		720×480 /59.94 i	720×576 /50 i	1920×1080 /59.94 i	1920×1080 /50 i	1920×1080 /23.98 psF	1280×720 /59.94 p
SDTV	720×480 /59.94 i	○	○	○	○	—	○
	720×576 /50 i	○	○	○	○	—	○
HDTV	1920×1080 /59.94 i	○	○	○	○	○	○
	1920×1080 /50 i	○	○	○	○	○	○
	*1920×1080 /23.98 psF	○	○	○	○	○	○
	1280×720 /59.94 p	○	○	○	○	○	○

Note; *Entry of 1080/23.98 psF does not make compensations using motion vectors.

● Aspect ratio mode setting

For HDTV up conversion and HDTV down conversion, the following 3 types of settings are possible on the conversion aspect ratio mode.

· HDTV up conversion

Top&bottom cut mode
4 : 3→16 : 9 ; The top and bottom of 4:3 pictures are cut for display on a 16:9 screen.

Side panel mode 4 : 3→16 : 9 ; The 4:3 pictures are displayed without changing a 16:9 screen. (The left and right sides appear in the background color.)

Stretch mode Squeezed signal mode, such as PAL WIDE into 16:9.

· HDTV down conversion

Side cut mode
16 : 9→4 : 3 ; Cuts both sides of 16:9 pictures for display in 4:3.

Letter box mode 16 : 9→4 : 3 ; Voids top and bottom signals of 16:9 pictures and displays them in 4:3.

Squeeze mode Down-convert 16:9 HDTV signals to 16:9 SDTV signals.

●Added functions

・Protect function This function disables all functions on the front panel in order to prevent inadvertent key touches (setting are not affected) while the VC31 is in operation.

・Noise reduction The VC31 has noise reduction function thanks to a motion-adaptive recursive filter.
The unit can reduce random noise that has no inter frame correlation.
Noise reduction level can be adjusted for luminance signal and chrominance signal independently.

・Contour correction Contour correction for horizontal and vertical in the luminance signal (Y) and the color difference signal (Pb, Pr) can be made. The amount of correction can be set in 3 stages each for horizontal and vertical. The horizontal boost center frequency can also be set in 3 different values.

・Ext sync A tri-level HDTV sync signal (during HDTV output mode) or a bi-level SDTV sync signal (during SDTV output mode) can be fed through the EXT REF connector on the rear panel. The output signal can be phase synchronized with the external signal.

・Input sync Converted output signals can be synchronized with input signals. For example, a 1080/59.94/i output signal can be synchronized with a 525/59.94/i input signal.

・Test signals Color bar and ramp signals are generated for checking equipment.

・Processing when Input signal is lost
The black-burst signal will be replaced.

・Variable background color
When the aspect ratio is set as the Side Panel or Letter Box mode, the areas of black signal can be changed independently. The luminance set-up and chrominance hue are separately adjustable.

・Scene change detection
This action reduces picture deterioration when scene change detection is activated. It turns off the motion compensation using motion vectors.

・Alarm display and terminal
The VC31 has 3 alarms: a signal alarm (SIG), fan alarm (FAN), and power alarm (POWER). When any of these alarms are activated, it is indicated on the front panel LCD and LED (red) with beep sound. At the same time, a total alarm information contact point is sent to the external unit by closing pin 1 and 6 at the alarm terminal on the rear panel.

●Input signals

・SDTV serial digital (SDI)
1 active through.
Conforms with ITU Rec.601, SMPTE 259M

・HDTV serial digital (HD-SDI)
1 active through.
Conforms with SMPTE 292M

・Embedded audio
SDTV 24 bits, 48 kHz, 4 channels
Audio group selectable
HDTV 24 bits, 48 kHz, 4 channels
Audio group selectable
(8 channels for HD ⇔ HD conversion)
Conforms with SMPTE 299M

・External reference sync synchronized with output signal
HDTV tri-level sync
± 300 mVp-p, 75 Ω
SDTV Black-burst signal 300 mVp-p ± 6 dB, 75 Ω

●Output signals

・SDTV serial digital (SDI)
2
Conforms with ITU Rec.601, SMPTE 259M

・HDTV serial digital (HD-SDI)
2
Conforms with SMPTE 292M

・Embedded audio signal
SDTV 24 bits, 48 kHz, 4 channels
HDTV 24 bits, 48 kHz, 4 channels
(8 channels for HD ⇔ HD conversion)
Conforms with SMPTE 299M

●General specifications

Power supply AC 90 to 250 V, 50/60 Hz

Power consumption
Approx. 190 VA
Approx. 290 VA
(when board for HD⇒HD conversion is installed)

Operating environment temperature / humidity range in which performance is guaranteed
+5℃ to +35℃ / 5% to 90%RH
(non-dewing)

Dimensions 426 (W) x 88 (H) x 570 (D) mm,
2U (mountable 19 inch rack)

Weight 15 kg Max.

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