CONVI104   SWITCHER & ANALOG TO SDI CONVERTER

- **PAL and NTSC compatible**

- **10-bit sampling**

- **Five-stage comb filter**

- **EDH generation and insertion**

- **Twin SDI output**

- **Frame Synch. with optional board (FS104)**

CONVI 104-M   15/03/2006

INSTALLATION AND USE OF THE CONVI104

Please read this manual carefully when installing the CONVI104 unit.

The manufacturer will not be responsible for any damage caused by the use, although correct, of its products.

The information and features of the product may change without prior notice.

1.0 SCOPE

CONVI104 is a unit that converts a TV analog signal into a digital SDI signal according to standard ITU-R601.

The signal to be converted is chosen among 3 incoming signals in the following formats: CV, Y/C and Y, Cb, Cr.

Every video input has its own associated audio.

The CONVI104 unit can also be used as a SDI generator having a set of 3 patterns.

CONVI104 is Pal and NTSC compatible.

An optional Frame Synchronizer board, FS104, can be placed inside the unit.

The product is housed in a 1U housing and can be used in 19" structures together with the ADR1U adapter.

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2.0 POWER SUPPLY

The CONVI104 unit must be powered with a.c. voltage 230 Vac 50 Hz by means of the cable supplied. The plug must be connected to its panel plug placed on the left hand side of the rear panel.

It is possible to power the unit at 115 Vac 60 Hz but it must be set at the factory which will change the silk-screen printing on the back panel indicating the voltage and the power frequency.

The panel plug has a fuse carrier for 5X20 fuses. In case of fuse failure, replace it with an **equivalent** one, as specified at the back of the unit.

**All operations must be carried out by highly skilled personnel
who must be informed on risks concerning electric shock.**

In some nations it is necessary to change the cable plug in order to adapt it according to the local standard types. The code for the identification of the wires is as follows:

-Brown   PHASE   (Marked by the letter L, it could be red)
-Blue   NEUTRAL   (Marked by the letter N, it could be black)
-Yellow/Green   GROUND   (Marked by the letter E, it could be green)

**WARNING
Grounding is compulsory**

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3.0 CONTROLS AND SIGNALING

The following control and signaling devices are located on the front side of the CONVI104 :
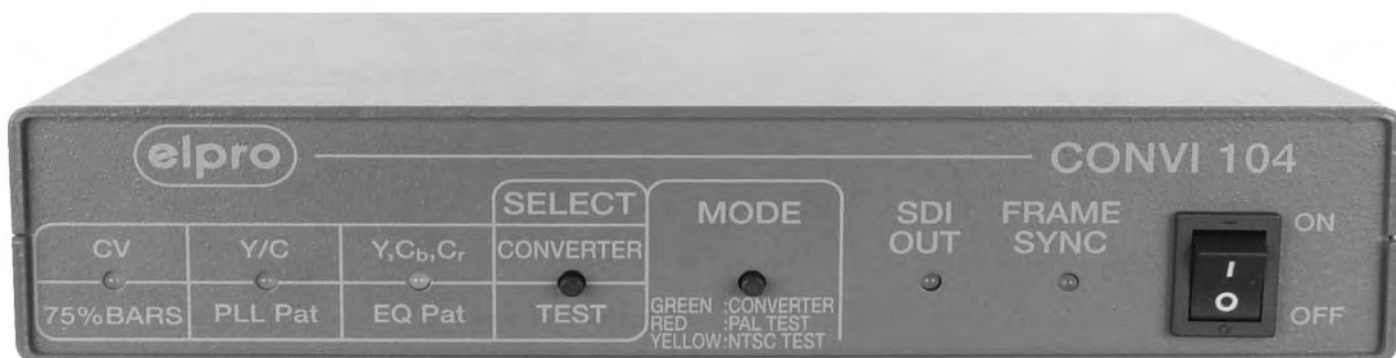
-ON/OFF switch for switching the unit ON and OFF

-3 tricolor LEDs (Green, yellow red) which indicate the selected input to be converted or, in generator mode, the outgoing test pattern.   (Bars at 75%, PLL Pathological and EQ Pathological)

-1 SELECT button for selecting the input to be converted or, in generator mode, the outgoing test pattern.

-1 MODE button to set up the operation from the converter, PAL generator, or NTSC generator.
   If the FS104 Frame Synchronizer option is installed, there is a fourth operation mode: the "H Synch. Delay" (See 6.0)

-1 green SDI OUT LED: when switched on, it indicates that there is a correct outgoing SDI signal.
-1 green FRAME SYNC LED: if switched on, it indicates that the optional FRAME SYNCHRONIZER
   board is inserted inside and that the genlock to the external REF signal is active.

4.0 OPERATION

When the machine is on, one of the 3 LEDs CV, Y/C and Y, Cb, Cr is always on.

4.1 If its color is green, it means that the CONVI104 is working as a converter; the LED that is on, indicates which input is being converted. If the led flashes quickly, it means that there is no incoming signal or that it is not a correct signal.

4.2 If its color is red, it means that the CONVI104 is working as a PAL generator; the LED that is on, indicates which test signal is going out

4.3 If its color is yellow, it means that the CONVI104 is working as a NTSC generator; the LED that is on, indicates which test signal is going out

To change the operation mode, press the MODE button repeatedly.

To select the signal to be converted, or to select the test signal, press the SELECT button repeatedly.

5.0 INSTALLATION

5.1 Connect the analog sources to be converted to the connectors located at the back of the unit (these are marked with CV, Y/C and Y, Cb, Cr).


5.2 Connect the audios, if required. Remember that the audio signal of the video input being converted is routed on the L and R OUTPUTS.

5.3 To achieve optimum converting results, the incoming video signal must be correct and without losses.

Therefore, if the sources are sufficiently near the CONVI104 (max. 20 m), it will not be necessary to compensate the losses due to the cable carrying the signal. If the distance from the sources is more than 20 m, it is recommended to compensate the losses with a DA104 or DA204 distributor which can be placed in the Elpro DVR-MV/RK rack, or with a DA124.

The equalizing device must be placed immediately before the CONVI104 inputs.
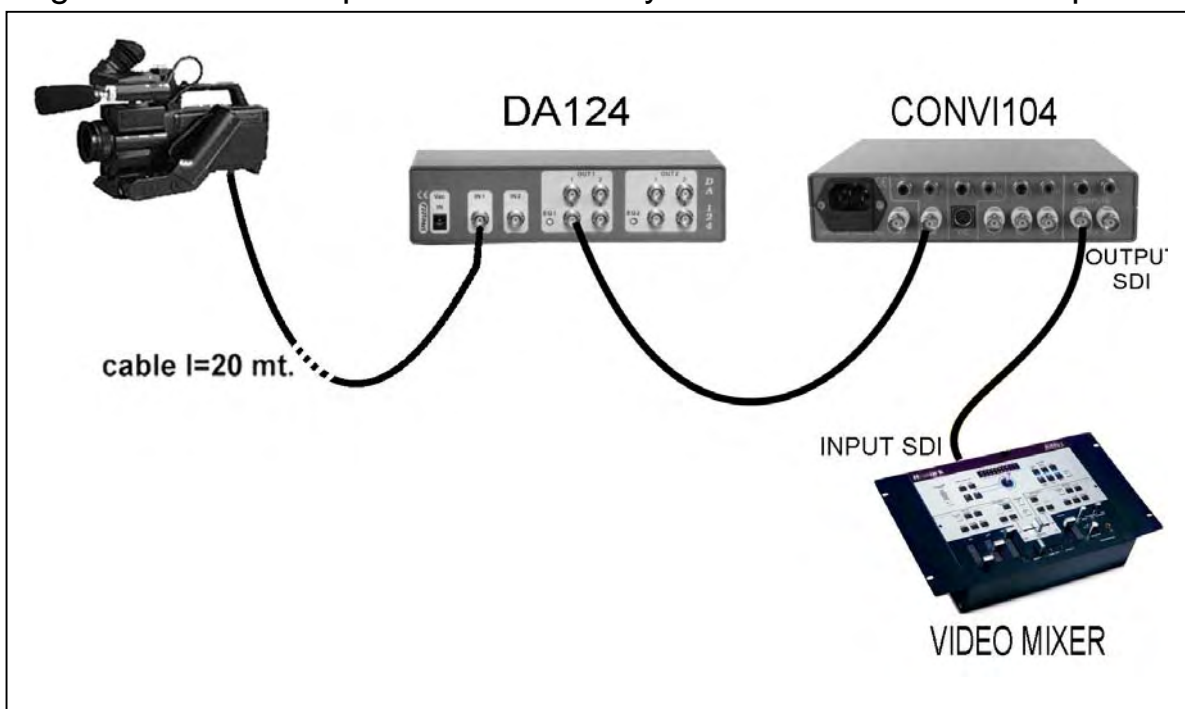
5.4 After connecting the incoming signals, via the SELECT button, it is necessary to choose the source to be converted and then make sure that the outgoing SDI signal is correct.

Monitor the SDI signal going out of the two BNCs called SDIs with a suitable instrument, e.g. VFM601i Tektronix; make sure the features of the eye pattern, jitter, range and risetime meet the ITU-R601 requirements:

a) Eye pattern	: well defined
b) Jitter	: less than 500 psec
c) Range	:800mV ± 10%
d) risetime	:from 0.75 to 1.5 nsec
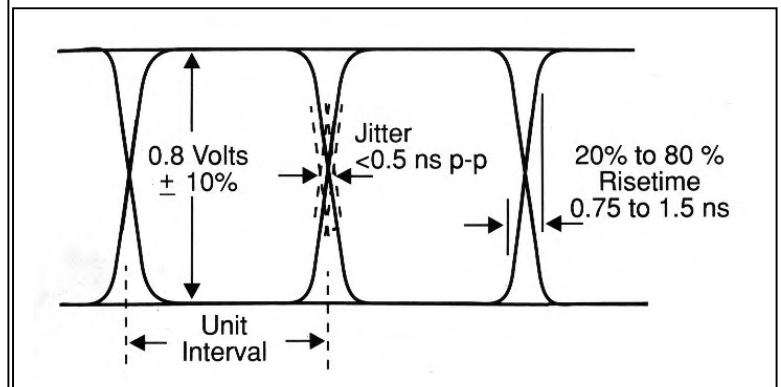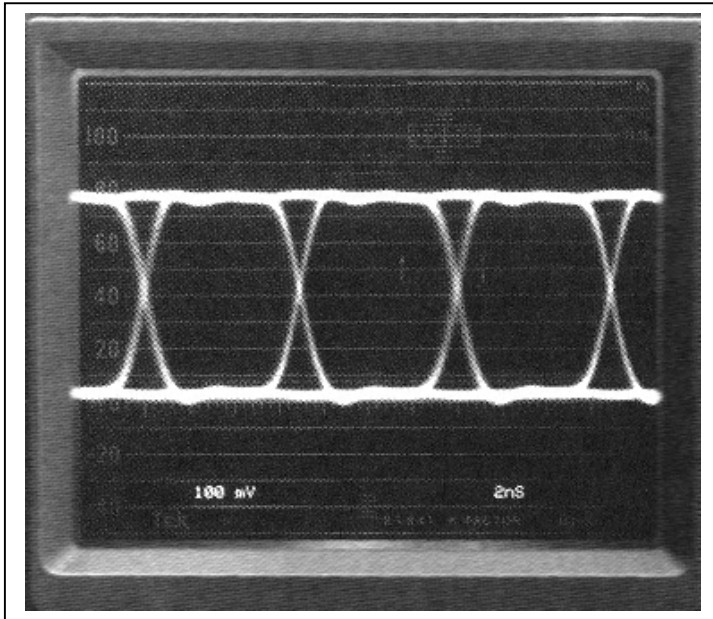
PLEASE NOTE
If the eye pattern is not well defined or if the jitter is >500 psec, make sure that:

-The source has a correct signal (pp value of the synch., range and frequency burst)
-The coax cable being used, if not RG59B/U, has equivalent features
-The length of the cable carrying the incoming signal is not excessive (see 5.3)

6.0 FRAME SYNCHRONIZER

If the FS104 FRAME SYNCHRONIZER optional board is installed and you want to have a synchronized output, connect the reference signal to the BNC called REF.

The reference signal can be a Black Burst or a standard composite signal.

6.1 H Synch. Delay

To change the H position of the outgoing signal relative to the reference, there is a function called "H Synch. Delay". To enable this function, press the MODE button repeatedly until LEDs CV, Y/C and Y, Cb, Cr turn off.

Hold down the MODE button until you reach the required H position.

Store the position by holding down MODE and by briefly pressing the SELECT button

The stored position will remain the same even after the unit is switched on again.

6.2 Freeze

When the FS104 board is installed, it will be possible to execute the "Frame Freeze" function.

To activate the "Frame Freeze" function while the CONVI104 is converting an input, hold down the MODE button and briefly press the SELECT button at the same time.

In this case, the LED of the selected input will start flashing slowly.

To exit from the "Freeze" function, briefly press the MODE button.

7.0 TECHNICAL DATA

VIDEO

Inputs	:Three, CV, Y/C, Y, Cb, Cr
Standard	:PAL, NTSC
Reference	:Black burst or CV, 75Ω terminated
Output	:SDI, ITU-R601, twin
Comb filter	:5 line adaptive
Jietter filter	:Crystal with VCXO PLL
Outputs ret. loss	:34dB at 10MHz,
	21dB at 100MHz,
	15dB at 200MHz,
	15dB at 270MHz

FS104 (Option):

H Synch. Delay	: 1 line adjustable vs. reference

AUDIO

Audio inputs	:AC coupled, unbalanced
Input impedance	:56KΩ
Input level	:+12 dBm max.
Frequency response	:-1 dB from 20Hz to 20KHz
Crosstalk	:60 dB at 5KHz
Distortion	:0.05% at 0dBm with 10KΩ load
Output impedance	:100Ω

Main input	:230 Vac 50Hz
Power consumption	:7VA
Operating temp. range	:0÷45°C
Safety	:According to EN60065
EMC	:According to EN55103-1 and EN55103-2

CE Mark

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8.0 NOTES

This product is guaranteed for 2 years from the date of purchase.

The warranty loses its validity if the defect of the product has been caused by improper use or misuse by third parties..

During the warranty period, Elpro will repair the faulty units free of charge.

The faulty units shall be returned carriage paid to Elpro's head office in Turin with a regular freight bill.

Repaired units shall be sent carriage forward to the recipient.

Outside the warranty period, Elpro will repair faulty units with free delivery at its facility in Turin. The repair will be charged to the customer.

**For any information during the installation of the CONVI104
please call Elpro's hot line 011 9348778
or send an e-mail to: info@elprovideolabs.com**

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