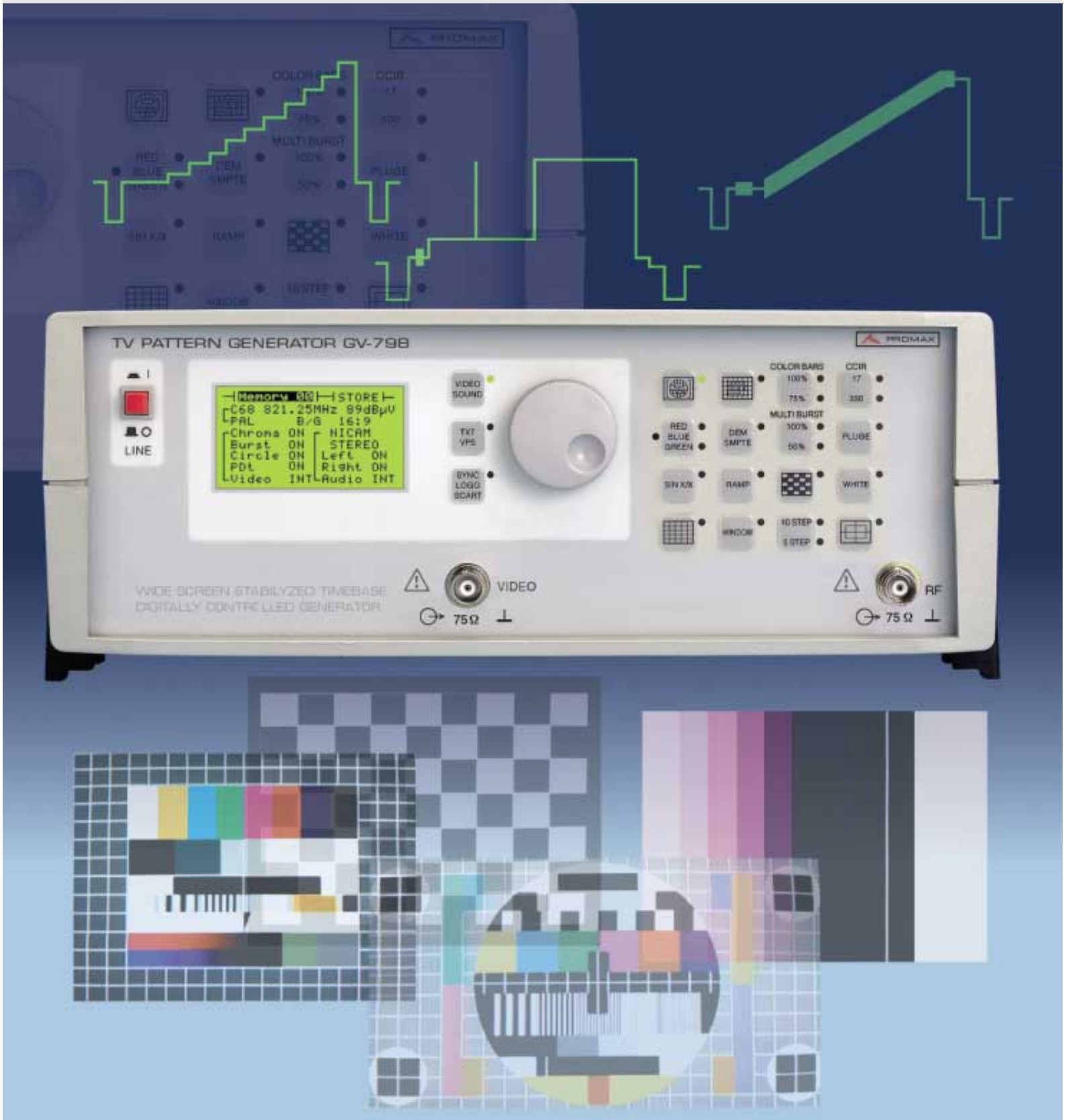
TV & MONITOR PATTERN GENERATORS



PROMAX

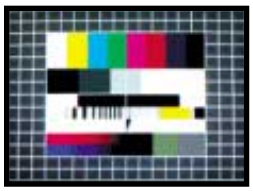
GV-798/898 TV PATTERN GENERATORS

Multistandard and Multisystem TV Signal Generators **GV-798** and **GV-898**, have the widest selection of functions for an instrument of this type. 37 different patterns, including 16:9 format, are the base over which different configurations can be designed. Those settings can then stored in 32 memories for later immediate recall.
All the functions can be selected on three different menus presented on a backlighted graphic LCD display.
The instrument includes the possibility to program two different colour logotypes that can be moved. It does also include a clock and possibility to display different prestored messages.
All common interface connectors such as S-VHS, RGB, SCART…. are available on the rear panel. The RS-232 interface is specially useful being bidirectional to control the instrument and for data exchange.

37 PATTERNS TO SATISFY ANY TEST NEEDS


Complete pattern 4:3


Complete pattern 16:9

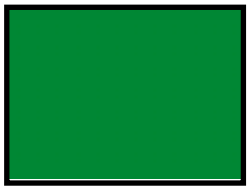

FuBk pattern ,PAL system


Colour bars 100/0/75/0

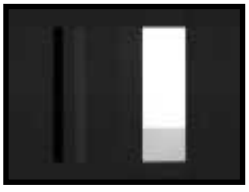

VITS CCIR 17, B/G/L/D/K


VITS CCIR 330 B/G/L/D/K


Purity: red

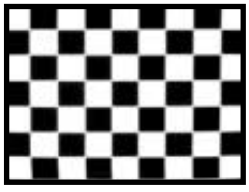

Purity: green

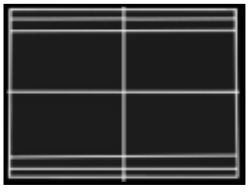

Purity: blue

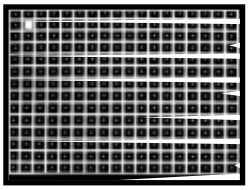

Pluge, B/G/I/L/D/K

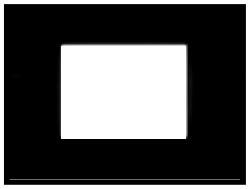

Sin X/X, B/G/I/L/D/K


Ramp


Checker board, 4:3


Centred


Convergence, 4:3


Window


Grey scale, 5 levels


Grey scale, 10 levels


Multi-Burst, B/G/I/L/D/K

VIDEO & AUDIO CONFIGURATION

SYNTHESISED RF OUTPUT
The tuning can be through frequency or channel according to the selected standard (CCIR, STDL, OIRT or FCC).

OUTPUT LEVEL
The output RF signal level is adjustable in 1 dB steps. Maximum attenuation being 60 dB.

MULTISTANDAR
Systems available are: PAL (B,G,I,D,K), NTSC (M) and SECAM (L,D,K). Others are available upon request.

32 CONFIGURABLE MEMORIES
They allow to automatic selection of the prestored configurations.

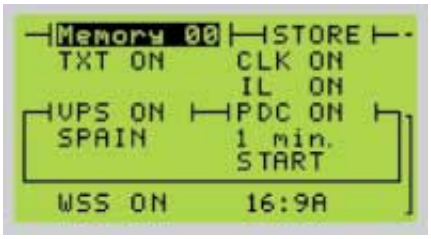
FORMAT SELECTION
The format can be selected 4:3 or 16:9

SOUND MODULATION
Sound modulation can be selected among MONO, ZWEITON (B,G,D,K,M) and NICAM (B,G,I,L). The modulated signal can be internal or external (except NICAM) and any of the channels (L o R) can be removed. In the stereo modulations, the second carrier can be stereo or dual.

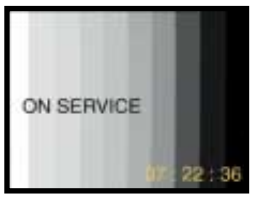
TELETEXT, VCR SYNCHRONISATION SIGNALS (VPS AND PDC), CLOCK AND INTERLACED CONFIGURATION

TELETEXT
It contains an index page and four data pages in 4 languages (English, Spanish, French, German). Includes Clock Cracker.

VCR SYNCHRONISATION SIGNALS
The VPS (Video Program Service) and PDC (Program Delivery Control) signals are information delivered by broadcasters during the transmission of the program to synchronise the turn on and off on compatible videos.



CLOCK
When Clock is turned on, this information appears at the on the right hand lower corner on all patterns..



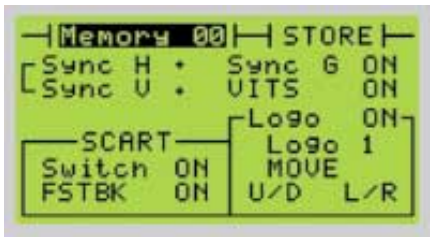
INTERLACED
This turns on and off the interlacing.

WSS (Wide screen Signal) This signal actuates on 16:9 receivers incorporating this feature. It is possible to generate eight different combinations for the 4:3, 14:9 and 16:9 formats.

SYNCRONISMS, LOGOTYPES, EUROCONNECTOR-SCART AND TEST SIGNALS (VITS) CONFIGURATION

SYNCHRONISM SELECTION
It is possible to select the polarity of the horizontal and vertical synchronism independently. It is also possible to activate the synchronism in the G output.

EUROCONNECTOR CONTROL
The FSTBK (Fast Blanking) signal activates the RGB inputs on television sets. The SWITCH signal activates audio and video on the Euroconnector.

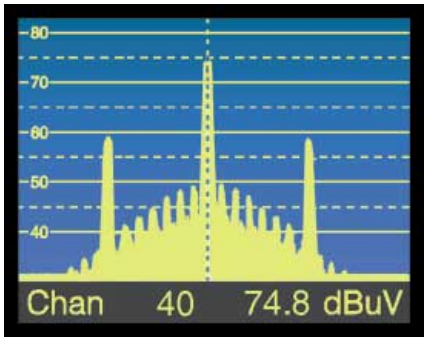


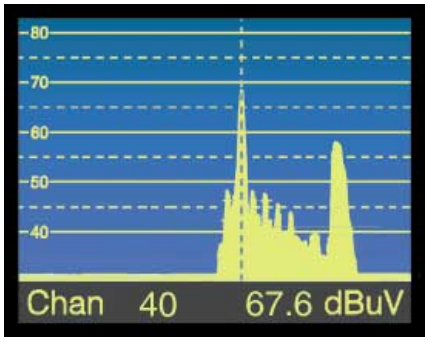
LOGOTYPES GENERATOR

It is possible to insert 2 colour logotypes of variable sizes on any of the test patterns. They can be moved to different positions within the pattern.

TEST SIGNALS (VITS)
This function allows the activation of test signals for CCIR, UK and FCC standards.

VESTIGIAL SIDE BAND MODULATOR





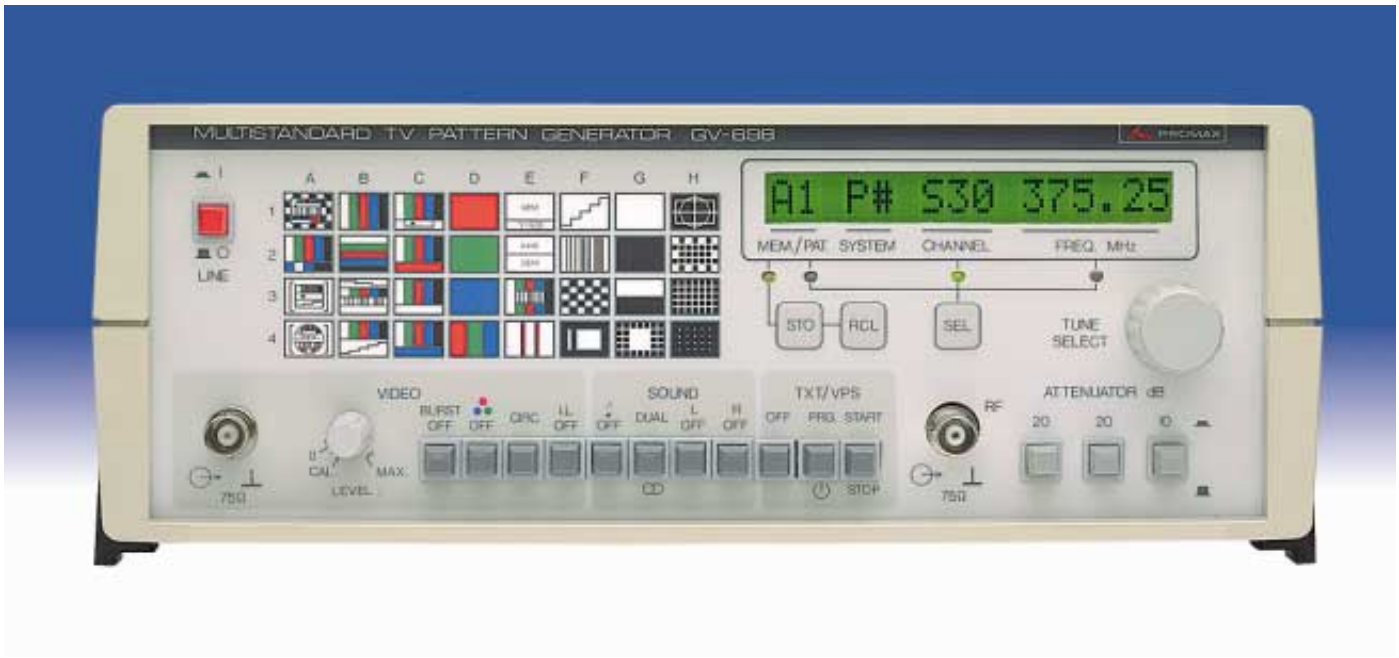
Both TV Generator, the **GV-798** and the **GV-898**, offer the same features regarding test patterns and possible configurations. The difference is in the modulation type used. The **GV-798** modulates the TV signal in **Double Side Band** and the **GV-898** modulates in **Vestigial Side Band.** With **GV-898** the simulation of the on-air transmitted signals is optimal since this is the system used in broadcast of analogue sygnals.

Both generators have 1 dB step adjustable output levels..

GV-798/898 TV PATTERN GENERATORS

SPECIFICATIONS	GV-798/898
Video Carrier	
Resolution	50 kHz, 10 kHz (GV-898)
Tuning	By channels or by frequency through the rotary selector. Channel tables: CCIR, STDL, OIRT and FCC.
Storage	In any of the available 32 memories
RF Output	
Output level	80 dBµV
Attenuation	Up to 60 dB in 1 dB steps
Frequency range	35 to 900 MHz, 35 to 850 MHz (GV-898)
Video modulation	AM-VSB (Vestigial Side Band)
	DSB (Double Side Band GV-898)
Polarity	Negative except in SECAM L (positive)
Modulation index	80 %, 90 % (GV-898)
Impedance	75 Ω
Video	
Video input	
Impedance	75 Ω
Voltage	1 Vpp
DC component	-2 V to +2 V
Maximum DC component	±3 V
Polarity	White Level positive
Coupling	AC with internal fixing
Video Output	
Impedance	75 Ω
Voltage	1 Vpp
Polarity	White Level positive
Coupling	DC
Black level	0 V ± 0.2 V
Blackburst otput	
Impedance	75 Ω
Synchronisms polarity	Negative
Level	0.45 Vpp
Connector	BNC
RGB outputs	
Impedance	75Ω
Amplitude	0.7 Vpp
Synchronisms in G	0.3 Vpp (seleccionable ON/OFF)
Connector	BNC
Black level	0 V ± 0.2 V
Scart	
S-VHS	
Impedance	75Ω
Amplitude	
Luminance	1 Vpp
Crominance	0.3 Vpp
Connector	S-VHS
Synchronism	
Synchronisms output, CS	
Impedance	75Ω
Amplitude	2.5 Vpp
Connector	BNC
Horizontal pulse output, H	
Impedance	75Ω
Amplitude	2.5 Vpp
Connector	BNC
Vertical pulse output, V	
Impedance	75Ω
Amplitude	2.5 Vpp
Connector	BNC
Crominance	
PAL NTSC	
TV systems	PAL B/G/D/K/I, NTSC M
	PAL B/G/D/K/I/M/N NTSC M (GV-898)
Subcarrier frequency	4.433619 MHz PAL B/G/D/K/I
	3.579545 MHz NTSC M
	3.575611 MHz PAL M (GV-898)
	3.582056 MHz PAL N (GV-898)
Tolerance	< 4 ppm from 0 to 70º
SECAM	
TV systems	B/G/L/D/K
Subcarrier frequency	F_o R= 4.406250 MHz
	F_o B= 4.250000 MHz
Identification pulses	
Frame	
Amplitude D'R	540 mV
Amplitude D'R	500 mV
Line	
Amplitude D'R	215 mV
Amplitude D'R	167 mV
Subcarrier blanking	5.6 µs
Power supply	
Mains voltage	110-125-220-230-240 V AC ± 10%
Mains frequency	50-60 Hz
Consumption	40 W
Operating environmental conditions	
Altitude	Up 2000 m
Temperature range	From 5ºC to 40ºC
Maximum relative humidity	80 % (to 31ºC), decreasing lineally up to l 50% to 40ºC.
Mechanical features	
Dimensions	W.228 x H. 102 x D. 307 mm
Weight	5.6 kg, 5.8 kg (GV-898)
Included accesories	Mains cord model CA-05
Options	OPT-798-01
	OPT-898-01

GV-698 TV PATTERN GENERATOR



The **GV-698** video generator is a multi-standard, multi-system unit with advanced functions. Its modular structure makes it highly versatile, since it is possible to increase the applications of the instrument by adding modules.

The generator is particularly suitable for those industrial sectors that require high-quality pictures such as adjustment and analysis lines, production studios, technical assistance services, etc. Because it is easy to operate, it is indispensable in the training of video technicians.

The video is equipped with 32 pattern charts to analyse the picture visually or with an oscilloscope. For geometric adjustments, the electronic circle can be inserted in all the charts.

To detect defects in the tuning circuits and IF amplifier stages, the **GV-698** has a complete synthesized radio-frequency modulator.

The **GV-698** is controlled by a microprocessor and, with its wide 16-character display and incorporated encoder, selection is simple and easy. The microprocessor controls such functions as the selection and display of the RF output by channel or by frequency, the selection of the colour system and sound standard, the selection of the output chart and the storage of 32 programs.

For a superior analysis of the video and sound signal, there are push-buttons located on the front panel for canceling or including certain basic functions, such as:

- Cancellation of the colour subcarrier, of the burst, of the sound subcarrier, of L and R sound, and of the TELETEXT and VPS signal.
- Inclusion of the electronic circle
- Option to eliminate the interlace in the video signal
- Selection of stereo or dual sound
- Selection of the information to transmit in the VPS signal

Multistandard

Colour TV signals differ from country to country. The most common systems are PAL, SECAM and NTSC. Furthermore, there are various standards within each system which differ regarding the sound carrier frequency and other points. The **GV-698** operates in accord with the CCIR recommendations for the PAL, SECAM and NTSC systems, incorporating up to nine standards in a single instrument. Therefore, it is particularly appropriate in circumstances where various systems and standards are in use, a situation that is becoming more and more common due to the increasing popularity of satellite TV.

Frequency synthesis

In the **GV-698**, the frequency synthesis technique is used, which ensures high stability and accuracy. Frequency is indicated on the display with a five-digit resolution. The tuning can be done by channel or by fine adjustment in the 37 to 865 MHz range, with a 50 kHz resolution. It is also equipped with 32 memories.

Display

The 16-character display has five readings, four of them simultaneous: the frequency, with a five-digit indication, the program, the colour chart, the TV system and sound standard, and the channel indication.

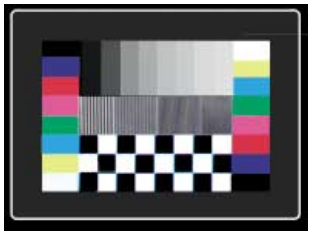
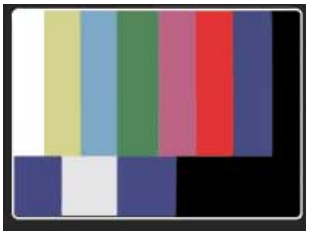
GV-698 TV PATTERN GENERATOR

Test signals

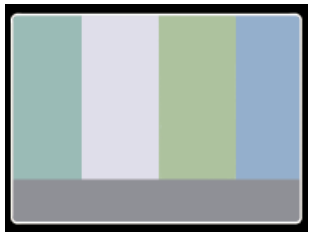
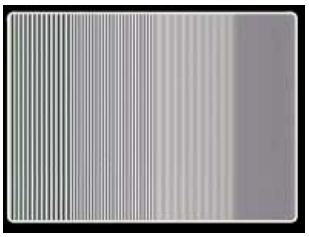
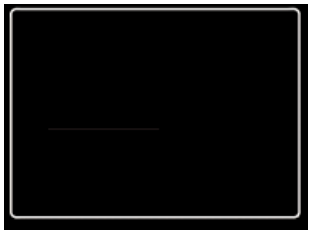
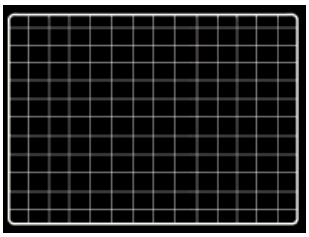
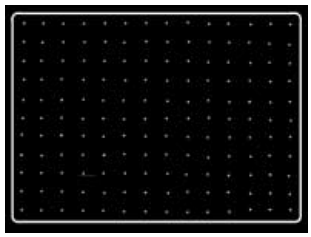
The **GV-698** model generates 32 test signals, notable among which are two monoscope-type charts. The test patterns include monoscope, colour bars, various combinations of test signals, red, green and blue screens, R-G-B bars, grey range, multi-burst, high voltage test, grid, antipal and 50% Y, antipal with U/V axis, chrominance/luminance delay test, dots, and others, which make the instrument ideal for multiple applications.

Logotype generator

The **GV-698** has a three-logotype generator with a 64-line resolution (1040 points/54 µs). As an option, these logotypes can be custom-programmed according to the specifications of the customer.



Teletext

During recent years, there has been a growing acceptance of TELETEXT on the part of users, and the majority of modern televisions incorporate it. With the **GV-698**, it is possible to generate 8 pages of teletext in two languages, which can be selected from the television set, with different combinations of graphics and text in levels 1.0 and 1.5, as well as the FLOP or FASTEXT function. Therefore it is possible to analyze all the decoding functions and guarantee the proper operation of the equipment being tested.

External connections

There is an adjustable composite video output and an RF output with an attenuator of up to 50 dB.

In addition, numerous auxiliary inputs and outputs increase the possibilities of the instrument considerably. These supplementary connectors are located on the rear panel.

- Y-C (S-VHS) output
- R, G and B (or G plus synchronisms) outputs
- Composite synchronism output
- Synchronism output for an oscilloscope
- L and R sound input
- In the EUROCONNECTOR, with composite video, R, G, B and sound outputs, and inputs for L and R sound and video (external signal modulation).

SPECIFICATIONS TV PATTERN GENERATOR

SPECIFICATIONS	GV-698
Standard TV	PAL B, G, H, D, K, I (M, N version /6, /8) NTSC M SECAM B, G, H, D, K, K1, I, L (version /3, /5, /11)
Display	Digital, 16 characters with frequency indicator (5 digits), channel, TV standard, pattern and sound system indication. Program indicated in the store / recall mode)
Video carrier	
Frequency	Synthesized, 37 a 865 MHz
Tuning	By frequency: 50 kHz steps By channel: CCIR (see versions)
Store / recall	32 programs
RF output	≤ 10 mV (80 dBµV) on 75 Ω
Attenuation	50 dB, 10 dB steps
Video modulation	
Type of modulation	AM, double side-bandl
(except SECAM / L)	AM positive, double side-band (/3, /5 version)
Modulation index	85 %
Sound	
External sound input	Selectable by switch
Bandwidth	100 Hz to 15 kHz
Connector	DIN 41524 or Euroconnector (100 kΩ)
Output	Euroconnector (1 kΩ)
Multistandard mono sound	
Carrier	Selectable On / Off
Frequency	4.5 MHz (M)
(sincr. frec. línea)	5.5 MHz (B, G, H)
	6.0 MHz (I)
	6.5 MHz (D, K, K1, L)
V/A ratio	13 dB
Type of modulation	FM (M, B, G, H, D, K, K1, I) AM (L)
Logotype generator	
Logotype	Up to three diferent logotypes
Format / resolution	64 lines (1040 dots / 52 µs)
Special logotypes [1]	Factory programmed according to the user's specifications.
VTR testing	
Format	8-position mobile rectangle
Shift speed	1 position per image field
Stereo/Dual Zweiton sound[1]	
Modes	Dual, stereo
On / Off selection	Carrier 1 / Carrier 2
Frequency	5.5 MHz / 5.7421875 MHz
V/A ratio	13 dB / 20 dB
Type of modulation	FM int. (1 kHz) / FM int. (3 kHz)
(On / Off selectable)	FM ext. / FM ext.
Stereo/Dual Nicam sound [1]	
Carrier	On / Off selectable
PAL B, G	5.850 MHz ± 5 Hz
PAL I	6.552 MHz ± 5 Hz
V/A ratio	20 dB
Modulation	4 QPSK
Modes	Mono, dual, stereo
Channel 1	1 kHz On / Off selectable
Cannel 2	3 kHz On / Off selectable
Transmission	728 kbits/s
Spectrum shape	40 % roll-off cosine (PAL B, G) 100 % roll-off cosine (PAL I)

Teletext and VPS generator[1]	
Teletext	On / Off selectable. Levels 1 & 1.5
Frequency	6.9375 MHz (444 * Fh)
Transmission	NRZ (non return to zero)
Contents	8 different pages (two languages :spanish and english), sent consecutively.
VPS	
Frequency	5.0 MHz
Transmission mode	Biphase
Level "0"	Black level
Level "1"	66 % ± 5 % of white level
Video output	
Amplitude	Variable 0 to 1.3 V
Nominal value	1 V
Polarity	Positive, DC coupling
Blanking cont. level	0 V (nominal)
Connector	BNC and Euroconnector (75 Ω)
Y-C component output (S-VHS)	
Amplitude	0.7 Vpp (white level in luminance) 0.3 Vpp (crominance burst)
Connector	S-VHS 4 pins (75 Ω)
R-G-B Outputs	
Amplitude	0.7 Vpp
G synchronism	0.3 Vpp (On / Off selectable)
Connector	BNC and Euroconnector (75 Ω)
Synchronisms output	
Polarity	Positive or negative (selectable)
Connector	BNC (75 Ω)
Oscilloscope trigger output	
Amplitude	Vertical and horizontal
Connector	BNC (75 Ω)
Video input	
Impedance	10 kΩ
Amplitude	1 Vpp máx.
Coupling	DC
Power supply	
Mains voltage	110-125-220-230-240 VAC / 50-60 Hz
Consumption	20 W
Mechanical features	
Dimensions	W. 288 x H. 102 x D. 247 mm
Weight	3 kg approx.
Versions	
GV-698	PAL / NTSC. Channels CCIR
GV-698 / 1	PAL / NTSC. Channels FCC
GV-698 / 2	PAL / NTSC. Channels OIRT
GV-698 / 3	PAL / NTSC / SECAM. Channels CCIR
GV-698 / 5	PAL / NTSC / SECAM. Channels OIRT
GV-698 / 6	PAL N / NTSC. Channels FCC
GV-698 / 8	PAL M / NTSC. Channels FCC
GV-698 / 11	Complete PAL / NTSC / SECAM. channels. Options 02 Zweiton, 03 Zweiton, -3 Teletext and VPS, -4 Nicam
GV-698 / 64	NICAM B/G, NICAM L, Teletext (CEEFAX) in PAL and SECAM
Options	
OPT-698-01	Special logotypes programming
OPT-698-02	Zweiton sound
OPT-698-03	Teletext / VPS
OPT-698-04	Nicam sound
Included accessories	Instructions manual, BNC/TV coaxial cable, mains cable, spare fuse

[1] Opcional. Ver opciones para realizar pedido

GV-298 TV GENERATOR

SPECIFICATIONS	GV-298
TV standard	PAL B, G, H (D, K, I, N see versions)
Display	16 digits, with frequency, channel indication, (5 digits) and pattern.
Video carrier	
Frequency	Sinthesized, 37 to 865 MHz
Tuning	By frequency: 50 kHz steps By channel: CCIR
RF output	80 dBµV ± 3 dB on 75 Ω
Attenuation	60 dB in 20 dB steps
Connector	BNC (75 Ω)
Video modulation	
Type of modulation	AM, double side-band
Modulation index	85 %
V/A ratio	13 dB
Sound modulation	
Carrier modulation	5.5 MHz, On / Off selectable
Type of modulation	FM, internal modulation at 1 kHz
Drift	± 30 kHz
Test patterns	100 % white pattern Grid with an electronic circle Points Checkerboard Colour bars Red pattern Green pattern Blue pattern Anti-PAL patterns, to clear R-Y switching
Video output	
Amplitude	1 Vpp
Polarity	Positive
Connector	BNC and Euroconnector (75 Ω)
R-G-B outputs	
Amplitude	0,7 Vpp
Connector	Euroconnector (75 Ω)
Oscilloscope trigger output	
Signal	Vertical and horizontal
Connector	BNC (5 kΩ)
Low frequency signal	
Amplitude	250 mVpp
Frequency	1 kHz
Connector	Euroconnector (10 kΩ)
Power supply	
Mains voltage	110-125-220-230-240 VAC / 50-60 Hz
Consumption	8 W
Mechanical features	
Dimensions	W. 212 x H. 102 x D. 241 mm
Weight	2,25 kg
Versions	
GV-298	PAL B, G, H, CCIR Channels
GV-298 / 2	PAL D, K, OIRT Channels
GV-298 / 4	PAL I, CCIR Channels
GV-298 / 6	PAL N, FCC Channels
Included accessories	Instructions manual, BNC/TV coaxial cable, mains cable, spare fuse

The **GV-298** video generator builts in exceptional features; the newest trends of modern technology have been applied in its design.

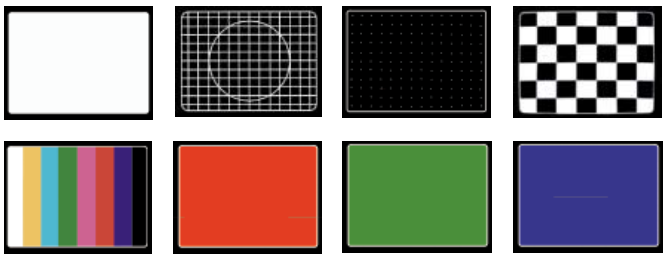
Its application field is reaching every service where a professional featuring idea is requested, to fulfil top requirements both in the synchronism stage and the colour and radiofrequency one.

A profitable equipment

Therefore, this device, easy to operate and strong, is especially indicated in fulfilling the closest needs in Technical Assistance Services (TAS). With the **GV-298**, ambivalence of TAS' professionals will find a first class partner both in workshop tasks and field repairs and installations.

Additional functions

The GV-298 is provided with 8 different patterns, to make basic settings in any receiver as well as to sense any abnormality by overviewing a picture. Furthermore, the **GV-298** includes four additional functions, to be added or cleared in every pattern, at will. These controls refer to picture interlacing, chroma subcarrier, sound and PAL commutation.



RF synthesized output

Sintetized radiofrequency stage covered range is from 37 MHz to 865 MHz.

This is used to sense any deficiency of the tuner and/or the IF amplifier of the analyzed receiver. A three cell attenuator is used to attenuate up to 60 dB maximum, in 20 dB steps. Frequency (5 digit resolution), pattern and selected channel are reflected in the 16 character digital display.

VG-90/GC-981B PORTABLE GENERATORS

VG-90

This PAL system colour video signal generator has been specially designed for service operation and set up of video systems such as colour monitors with CCVS (Colour Composite Video Signal) inputs or RGB single inputs with separate synchronism, or included in the G channel. It can be used also in mixing desks, colour decoders and others.

For its pocket format, and the feed by rechargeable NiCd batteries this instrument is specially intended for on-site work, even though its many functions and the supplied AC adapter provide excellent features to use it as a desk top equipment.

Moreover, it supplies composite synchronism signals and frame pulses independently, whether with positive or negative selection. An electronic circle is included to set up the picture geometry accurately.

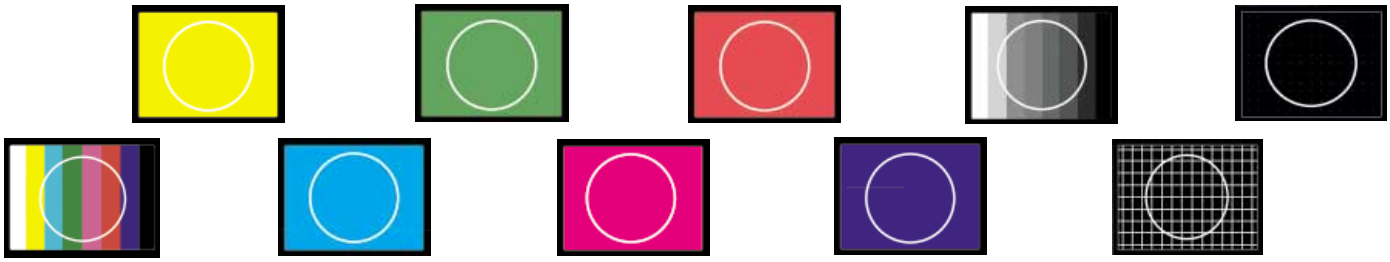
GC-981 B

The **GC-981B** colour TV generator is specially designed for PAL system colour TV sets maintenance and calibration at user's home.

Supplied signals fit to very rigorous norms. They allow to check and control both colour and B/W TV sets. In this new version, a circle picture is included that permits geometry adjustments, as it is available in all other pictures.

The design includes up-to-date CMOS technology. Its low consumption gives on enough range to cover about an 8 hour intermittent service.

Its light weight and small size, and the feed by rechargeable batteries allows it to be included in the tool hand case easily, thus enabling its availability.



SPECIFICATIONS				
GC-981 B			**Common**	
RF output			Test patterns	Points, grid, gray scale, red pattern, green pattern, blue pattern, magenta pattern, cyan pattern, yellow pattern, normalized colour bars, electronic circle included in all pictures.
Frequency range	BI	47 to 65 MHz		
	BIII	175 to 217 MHz		
	BIV-V	470 to 860 MHz		
Output amplitude	5 mV		System	PAL B,G,H (I,D,K optional)
Impedance	75 Ω		Subcarrier frequency	4.433619 MHz
Modulation	Negative on double side-band		Line frequency	15,611 Hz
Sound	5.5 MHz internal FM modulation		Frame frequency	50.30 Hz
VG-90			**Power supply**	
Video	1 Vpp (75 Ω)		Internal	NiCd 9V battery
RGB outputs	1 Vpp (75 Ω)		External	9-12 VDC 85 mA by EXT. POWER UR-9B (220 V AC)
Synchronism outputs			Consumption	0.54 W (battery)
Frame	1.5 Vpp (75 Ω)			0.94 W (external suply)
Composite	1.5 Vpp (75 Ω)		**Mechanical features**	
Supplied signals	Video with/without synchronism		Dimensions	W. 83 x H. 178 x D. 34 mm
	R signal		Weight	0.35 kg
	G signal with/without synchronism		**Included accessories**	3 coaxial cables with BNC/Jack connector, carrying bag, instructions manual, UR-9B unit
	H+V positive / negative synchronism			
	Positive / negative frame pulses			

GV-241 MONITOR TEST GENERATOR

In the world of monitors for computers, unlike those for television, there is a multiplicity of different systems involved. The scanning frequencies and the resolution, that is, the number of pixels they can display, vary widely from one system to another; furthermore they are being developed at a dizzying speed. Thus, for example, it is not difficult to find on the monitor market simple and almost-forgotten models like the Hercules or sophisticated like that `sun 1600 x 1028´.

As a consequence of such a diversity of models, the repair of these monitors poses a major difficulty, and that is why a demand exists for versatile instruments capable of generating all the systems now on the market. To satisfy this demand PROMAX has designed the **GV-241**, a universal generator for the testing of computer monitors, which greatly facilitates their adjustment, control and repair.

The video signal

The information required to display a picture on the computer monitor travels in what is known as the video signal. We can divide the video signal into its components for the purpose of classifying and differentiating between graphics systems. We have information on the duration of the lines that compose the picture (horizontal scanning), information on the number of lines that compose each picture (vertical scanning), on the time it takes the electron beam to retrace to write a new line (horizontal blanking) and the time it takes the electron beam to move from the last line to the first line of the new frame (vertical blanking). Each of these components can, in turn, be sub-divided into a main element, known as the synchronism, and the periods before and after the synchronism, known as porch times, which must also be defined if we want to identify a particular system. Thus, we have the front porch time, the synchronism, and the back porch time. The polarity of the synchronisms (positive or negative) and whether or not the lines that compose the picture are interlaced are parameters that also play an important role.

In short, to unequivocally define the video signal associated with a specific graphics system, we must know the following parameters.

- Horizontal and vertical scanning periods or frequencies
- Horizontal and vertical scanning front porch time
- Horizontal and vertical scanning back porch time
- Horizonal and vertical synchronisms
- Polarity of the synchronisms
- Interlace

The GV-241 is able to manage all of these parameters in a way that is truly comfortable for the user, who can select each of the graphic systems through the display of the instrument with no need for concern about what combination of specific parameters should be used.

Versatility

The **GV-24**1 provides up to 29 possible graphics systems, which are divided into two groups in order to facilitate selection. The signals obtained with this generator are truly reliable in terms of synchronism periods, and both line and frame blanking periods.

Multiple outputs

The GV-241 offers three types of connectors for direct connection to the monitor: the D9 is for Hercules, CGA and EGA monitors; the D15 miniature is for VGA monitors, and the D15 is for the MAC II monitors. In addition, there are the individual outputs: R, G (with manual synchronism select), B, CVS (video without synchronism), VS (vertical synchronism) and CS (composite synchronism) through BNC connectors.

Multiple outputs

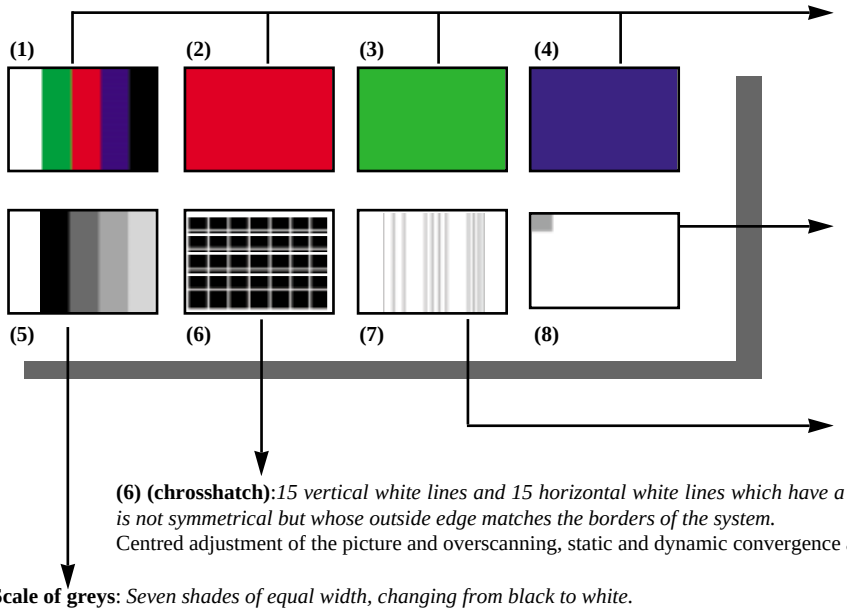
The **GV-241** allows the user to change the system, the chart and the synchronism polarity easily and conveniently, by means of the push buttons on the front panel.

The display always shows the information on the systems group (first or second), the chart (1-8) and the name of the system selected.

GV-241 MONITOR TEST GENERATOR

Charts Available

The GV-241 is equipped with eight pattern charts (shown on the front panel) which can be selected for any of the graphics systems generated. Each of them enables a particular adjustment or the detection of defects in the various modules of the monitor through simple observation of the resulting picture or of the video signal with an oscilloscope.



(1), (2), (3), (4), Colour bars (100/0/100/0), *Red, Green and Blue*.
Verification of the colour array. Saturation in optimal conditions for the adjustment of contrast and brightness. Verification of the uniformity or intensity of the colour on the entire surface of the monitor screen.

(8) White 100%: *With a rectangle of grey (approx. 70%) upper-left-hand corner to identify the direction of deflection.*
Checking of the limiter circuit of the beam current.
Balance of white.

(7) Multiburst: *Horizontal line divided into nine blocks. It starts with grey at 50% and continues with 8 MHz, 16 MHz, 4 MHz, 16 MHz, 4 MHz, 16 MHz, 8 MHz and grey at 50%.*
Checking of bandwidth.

(6) (chrosshatch):*15 vertical white lines and 15 horizontal white lines which have a ratio of 4:3 in all the systems, within a white frame which is not symmetrical but whose outside edge matches the borders of the system.*
Centred adjustment of the picture and overscanning, static and dynamic convergence adjustment, interline check.

(5) Scale of greys: *Seven shades of equal width, changing from black to white.*
Video amplifier linearity (correct ratio between the values of the electronic beam currents), whiteness control and adjustment, contrast and brightness control.

SPECIFICATIONS	GV-241
TEST PICTURES	
Available pattern charts	
1	**Colour bars 100/0/100/0**
2	**Red**
3	**Green**
4	**Blue**
5	**Scale of greys**
6	**Crosshatch**
7	**Multiburst**
8	**White**
R, B outputs	Red and blue signals
Amplitude	0.7 Vpp
Impedance	75 Ω
Connector	BNC
G output	Green signal with or without synchronism
Amplitude	0.7 Vpp
Impedance	75 Ω
Connector	BNC
CVS output	Video signal
Amplitude	0.7 Vpp
Impedance	75 Ω
Connector	BNC
HS output	Horizontal synchronism pulse
Signal	TTL
Connector	BNC
VS output	Vertical synchronism pulse
Signal	TTL
Connector	BNC
CS output	Composite signal (horizontal and vertical) with fixed polarity (negative)
Signal	TTL
Connector	BNC
C1, C2 and C3	Connectors D9, D15 miniature, and D15 respectively. Direct connection to the monitor. The outputs of the D9 connector are all TTL. When the charts 1 or 5 are selected, a black and white picture will appear. When used with a Hercules monitor, the R,G and B charts will be black.
Power supply	
Mains voltage	AC 110-125-220-230-240 V ± 10%
Frequency	50-60 Hz
Consumption	9 W
Operating environmental conditions	
Altitude	Up to 2000 m
Temperature range	From 5º C to 40º C
Maximum relative humidity	80 % (up to 31º C) dedecreasing lineally to 50 % at 40º C
Mechanical features	
Dimensions	212 W.x 102 H x 241 D mm
Weight	2.4 kg
Included accessories	Mains cable: CA 05

GV-241 TABLE OF COMPATIBLE MONITORS

FIRST GROUP (P)

System	Pixels	Frequency		HFP (4)	HS (2)	HBP (3)	VFP (8)	VS (6)	VBP (7)	Polarity		Interlace
		Horiz (kHz) $(1)^{-1}$	Vert (Hz) $(5)^{-1}$	(ms)	(ms)	(ms)	(ms)	(ms)	(ms)	H	V	
VGA	640x480	31.469	59.94	0.636	3.813	1.907	0.318	0.064	1.048	-	-	NO
VESA	800x600	37.879	60.317	1	3.2	2.2	0.026	0.106	0.607	+	+	NO
VESA	1024x768	48.363	60.004	0.369	2.092	2.462	0.062	0.124	0.6	-	-	NO
ATT	1280X1024	63.953	59.938	0.727	1.018	2.255	0.016	0.078	0.579	-	-	NO
Sun	1600X1280	89.2	66.9	0.001	2.03	1.4	0.011	0.112	0.471	+	+	

SECOND GROUP (S)

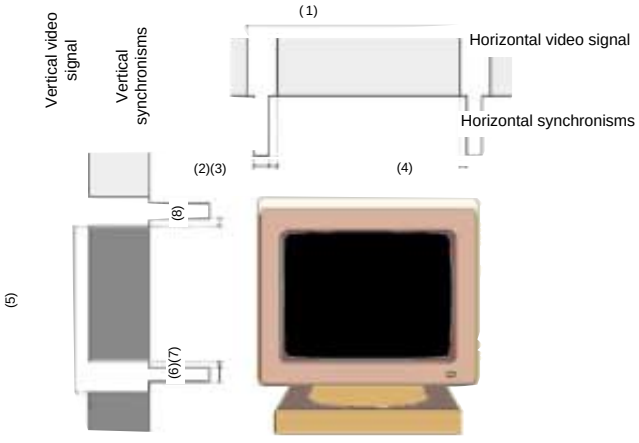
System	Pixels	Frequency		HFP (4)	HS (2)	HBP (3)	VFP (8)	VS (6)	VBP (7)	Polarity		Interlace
		Horiz (kHz) $(1)^{-1}$	Vert (Hz) $(5)^{-1}$	(ms)	(ms)	(ms)	(ms)	(ms)	(ms)	H	V	
CGA, EGA	640x200	15.81	61.5	6.6	4.2	7.2	1.58	0.19	2.15	+	+	NO
MDA, Hercu	720X350	18.42	49.91	0.6	8.25	1.45	0.001	0.9	0.2	+	-	NO
EGA Hi	640X350	21.86	59.72	0.001	4.9	1.6	0.001	0.6	0.08	+	+	NO
VGA	640X350	31.469	70.09	0.636	3.813	1.907	1.176	0.064	1.902	+	-	NO
VGA	640X400	31.469	70.09	0.636	3.813	1.907	0.318	0.064	1.112	-	+	NO
VGA Text	720X400	31.48	70.11	0.635	3.812	1.906	0.304	0.063	1.111	-	+	NO
VESA	720X400	37.736	90.044	0.75	1.25	4.5	0.239	0.08	0.981	-	+	
MAC II	840X480	35	66.67	2.116	2.116	3.175	0.084	0.086	1.114	+	+	NO
VESA	800X600	35.156	56.25	0.667	2	3.556	0.028	0.057	0.626	+/-	+/-	
VESA	640X480	37.86	72.809	0.762	1.27	4.603	0.238	0.079	0.74	-	-	
8514	1024X768	35.522	86.96	0.178	3.92	1.247	0.014	0.112	0.563	+	+	YES
SVGA 72Kc	800X600	48.09	72.01	1.121	2.399	1.279	0.479	0.124	0.774	+	+	
1025x768	1025X768	48.3	60	0.369	2.092	2.462	0.062	0.124	0.6	-	-	NO
SONY Std1	1024X768	48.78	60	1	1.5	2	0.061	0.061	0.799	+	+	NO
DEC	1024X864	54	60	0.16	1.85	1.68	0.001	0.056	0.629	+	+	
XGA	1024X768	56.5	70	0.32	1.813	1.92	0.053	0.106	0.513	-	-	NO
57K/72H	1024X768	57.09	72	0.32	1.77	1.87	0.054	0.103	0.5	+	+	
Radius	1152X882	66	72	0.138	1.28	2.42	0.001	0.2	0.38	+	+	
MAC II TP	1152X870	68.681	75.06	0.32	1.28	1.44	0.043	0.043	0.567	-	-	NO
Samsung	1006X1048	62.8	59.8	0.15	1.88	1.58	0.001	0.127	0.542	+	+	
SONY Std 2	1280X1024	63.337	59.98	0.407	1.701	1.849	0.047	0.047	0.41	+	+	NO
DEC	1280X1024	70.7	66.5	0.267	1.33	1.87	0.042	0.042	0.467	+	+	
Arts. Graf	1280X1024	78	73	0.228	0.915	1.907	0.038	0.038	0.488	+	+	

*** For other Monitor types contact with us.**

TOLERANCES

Horizontal frequency shift ±1 %
Vertical frequency shift ±1.5 %

HFP (4) **Horizontal front porch time**
HS (2) **Horizontal synchronism**
HBP (3) **Horizontal back porch time**
VFP (8) **Vertical front porch time**
VS (6) **Vertical synchronism**
VBP (7) **Vertical back porch time**



PROMAX

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