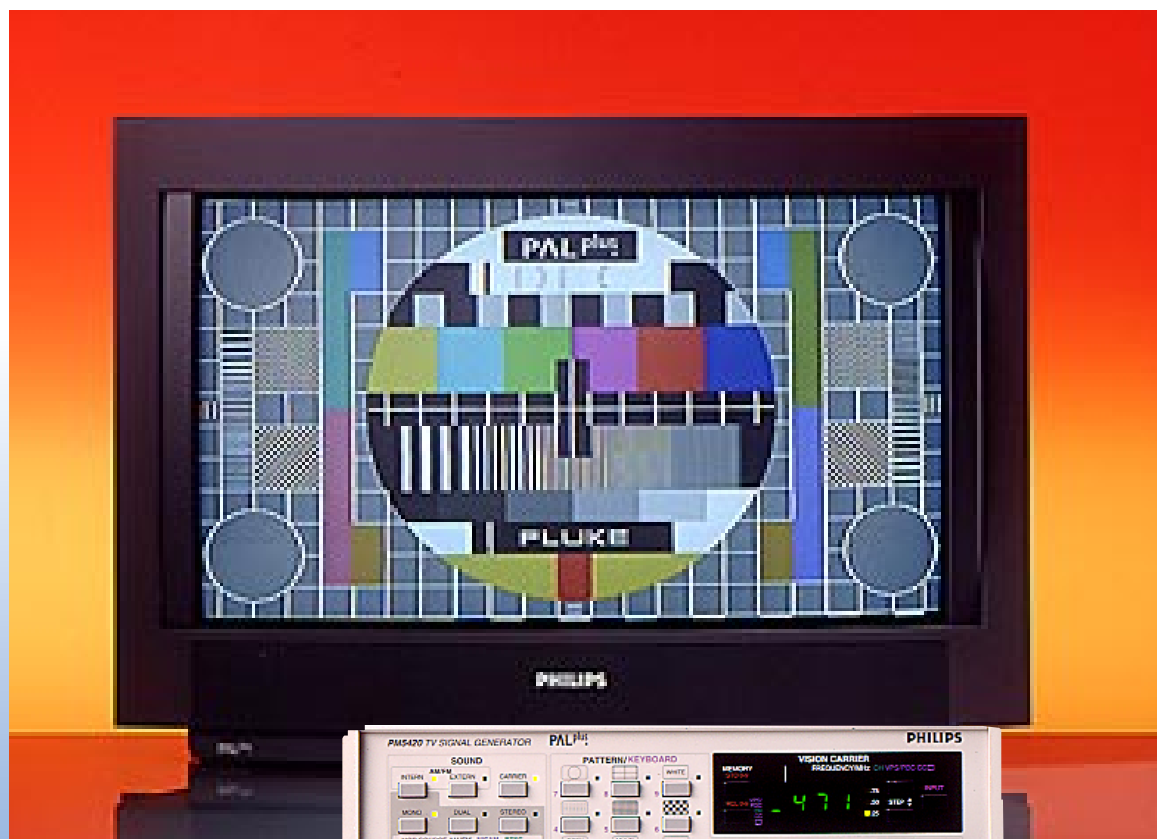


FLUKE®

Multi-standard TV Signal generator with PALplus

PM 5420 TV Signal Generators



PALplus.





The PM5420 from Fluke offers all standards and functions necessary to test or align the TV receivers or VCRs of today. The instrument provides TV signals according to the NTSC, PAL or SECAM standards as well as the new PALplus standard. The digitally generated PALplus signals make testing of TV receivers equipped with this new television technology very easy and cost effective.

PALplus functions

16:9 patterns

- PALplus universal: general test pattern in film or camera mode
- Zone plate: circular zone plate in film or camera mode
- MACP test 1: test pattern in camera mode with different encoded motion levels, motion dependent attenuation of the high frequency luminance components according to PALplus encoder standard
- MACP test 2: test pattern in camera mode with different encoded motion levels, motion dependent attenuation of the high frequency luminance components is disabled

Signalling

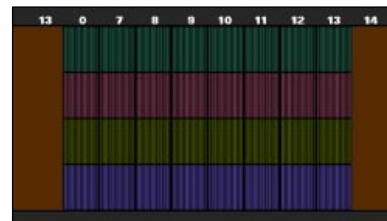
and reference signals

- Fully automatic widescreen signalling bits generation according to selected pattern
- Helper reference burst
- Black and white level reference signals

- White and black reference signals
- 6 steps grey scale
- Multiburst 0.8, 1.8, 2.8, 3.8 and 4.8 MHz
- Color bar (EBU 00/0/75/0)
- Vertical resolution sweep signal of 67 to 200 lines
- Diagonal resolution lines
- Yellow/red and red/yellow transition signals
- U (V=0) and V (U=0) decoder signals
- Anti-PAL signals
- G-Y=0 signal
- Helper-lines decoding indication (patent pending)

high frequency luminance components according to Motion Adaptive Color Plus of the PALplus encoder standard

- MACP test 2: motion dependent attenuation of the high frequency luminance components according to MACP is disabled

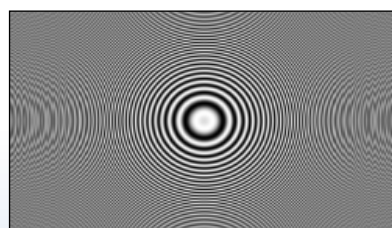


MACP test; frame 1



MACP test; frame 2

Zone plate in film or camera mode



- Frequency sweep of 0 to 5.5 MHz in horizontal and vertical direction

MACP test 1 and 2 (patent pending)

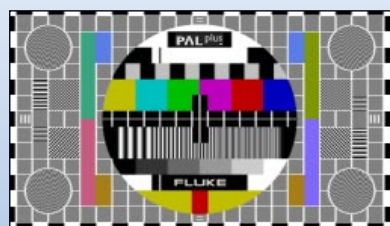
- Horizontal color bars: -V (U=0), +V (U=0), -U (V=0) and +U (V=0), motion is simulated and encoded by the color saturation differences between two frames
- Vertical bars with following motion simulations (M values): 13, 0, 7, 8, 9, 10, 11, 12, 13 and 14
- 3.8 MHz burst signal in vertical motion bars (except for first and last bar)
- Intra-frame averaged and direct color test in first and last vertical bar
- MACP test 1: motion dependent attenuation of the

Other functions

In addition to the special PALplus signals, the PM5420 offers test patterns and capabilities needed to test and align the total paths for video, audio and data services. These dedicated signals, such as NICAM digital sound or Teletext, make testing of the complete PALplus receiver very efficient and can be used for common PAL TVs or VCRs as well. Testrequirements of multi-standard TVs (or TVs produced for some countries exclusively) are also covered by the included SECAM and NTSC functions.

Patterns

PALplus universal test pattern in film or camera mode



- Crosshatch
- Centre cross
- Circle
- Corner circles filled with zoneplate information (around color-subcarrier)
- Black and white border castellations
- Horizontal overscan marks 4, 5 and 6%
- Vertical overscan marks 4 and 5%
- Black and white needle pulses (sin²)
- 250 kHz squarewave signal

Other functions

Video carrier

- Frequency range from 32 to 900 MHz
- RF output of 10 mV ± 2mV
- Attenuation adjustable between 0 and 60 dB
- Group delay pre-correction for TV standards B, G, H, N and M
- 10 memory locations for the storage of frequency or channel number

Basic patterns in 4:3 and 16:9 aspect ratio

- Circle, additional corner circles in 16:9 mode
- Center cross plus border castellations
- White pattern
- Dots
- Crosshatch with TOP/LEFT and center indicator
- Checkerboard
- 8 steps grey scale
- Multiburst 0.8, 1.8, 2.8, 3.0, 3.2, 3.4, 3.8 and 4.8 MHz
- VCR pattern
- Color bar according to (sub) standards
- DEM pattern according to standard
- Purity patterns
- 100 Hz test pattern

Remark: Over 100 test pattern combinations can be selected to meet special test requirements.

PAL standard

- Support for substandards B, D, G, H, I, M and N
- Analog mono sound
- Analog stereo sound (substandards B and G)
- NICAM digital stereo sound (B, G and I)
- MTS stereo plus SAP sound (M)
- Teletext TOP/FLOF and Antiope (B, D, G, H, I and N)
- PDC and VPS (B, D, G, H, I and N)

NTSC standard

- Support for substandard M
- Chroma carrier can be changed to 4.43 MHz
- Analog mono sound
- MTS stereo plus SAP sound
- Closed caption

SECAM standard

- Support for systems B D G H K K1 and L

- Analog mono sound
- NICAM digital stereo sound (substandard L)
- Teletext Antiope and TOP/FLOF (B, D, G, H, K, K1 and L)

Miscellaneous

- Amplitude of video out adjustable between 0 and 1.5 V (into 75Ω), separate 1 V position
- Chroma amplitude adjustable between 0 and 150%, separate 100% position
- IEEE-488 interface for selection and control of all functions
- Y/C and RGB signal outputs

Additional Technical Specifications

The PM5420 has the same specifications as the PM 5418 TDSI plus the following PALplus options. Signals are according to PALplus system description revision 3.0, January 1994 and are available in the standards PAL B, D, G, H and I. Please refer to appropriate section when parameter or function is not specific mentioned.

Operating: Via frontpanel or IEEE-interface, automatically disabled when selecting PAL N, PAL M, NTSC, SECAM or one of the non-PALplus patterns

Format: Centered letterbox 16:9 with modulated helper lines

Video: As in non-PALplus mode, voltage is continuously variable between 0 to 1.5V

Chroma: As in non-PALplus mode, amplitude (incl. burst and helper signals) is continuously variable from 0 to 150% (100% fixed)

Modes: Film and camera modes

MACP: Supported

Signalling: Full automatic widescreen signalling bits generation according to selected pattern

References: Helper reference burst in line 23
Black level reference in

line 623

White level reference in line 623

Teletext, PDC/VPS,

sound: As in non-PALplus mode, PDC/VPS programming is disabled

Ordering Information

Model

PM5420 NTSC/PAL/SECAM TV Signal Generator with PALplus

Accessories included with instrument

PM9547G (IEEE-Interface)
PM9538 (RF-Cable BNC - B&L)
RF-Cable BNC - F-Connector
Mains Cable
Operating Manual
Euro-AV - Cinch (Video and Audio L+R)
Y/C - Y/C Cable

Accessories

PM9539/O1 (RF-Cable and 300Ω trafo)
PM9575 (75Ω BNC - BNC Cable)
PM9561G (19" Rackmount)
Service Manual

For other instruments in the PM5410 family of TV Signal Generators please ask for brochure G0341A 1649405/NL EN.

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