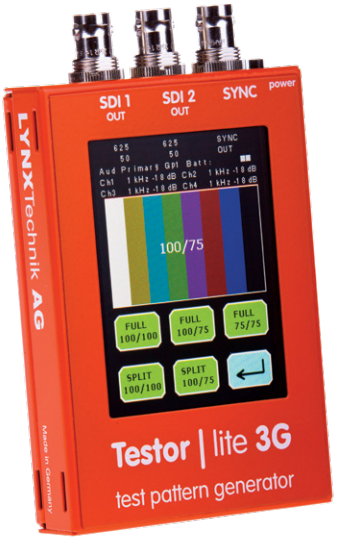
WFM 1801 Waveform Monitor

Product Manual

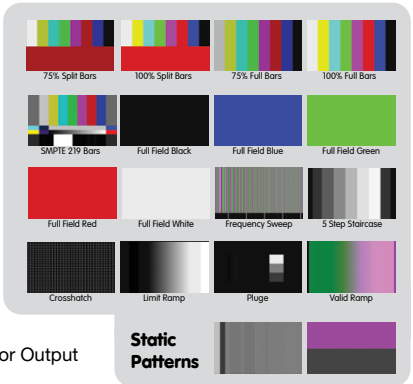
The Perfect Addition:

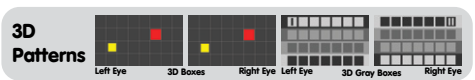
Testor | Lite 3G

Testor | lite 3G is a compact SDI video and audio test generator designed to address a multitude of test and verification needs in modern digital infrastructures. The large color touch-screen provides a simple, intuitive user interface and the integrated rechargeable battery will provide for up to 4 hours of continuous use.



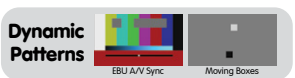
- 2 x Multi-format SDI Outputs
- Multiple 3G Streaming Modes
- Embedded Audio Generator
- Large Internal Pattern Library
- Multiple, selectable Overlays
- Analog Reference Sync Input or Output





Includes **PTG 1802** Testor | lite 3G Test Pattern Generator, USB-DCP AC power supply (+regional AC plug adapters), USB cable, Quick Reference, User Manual

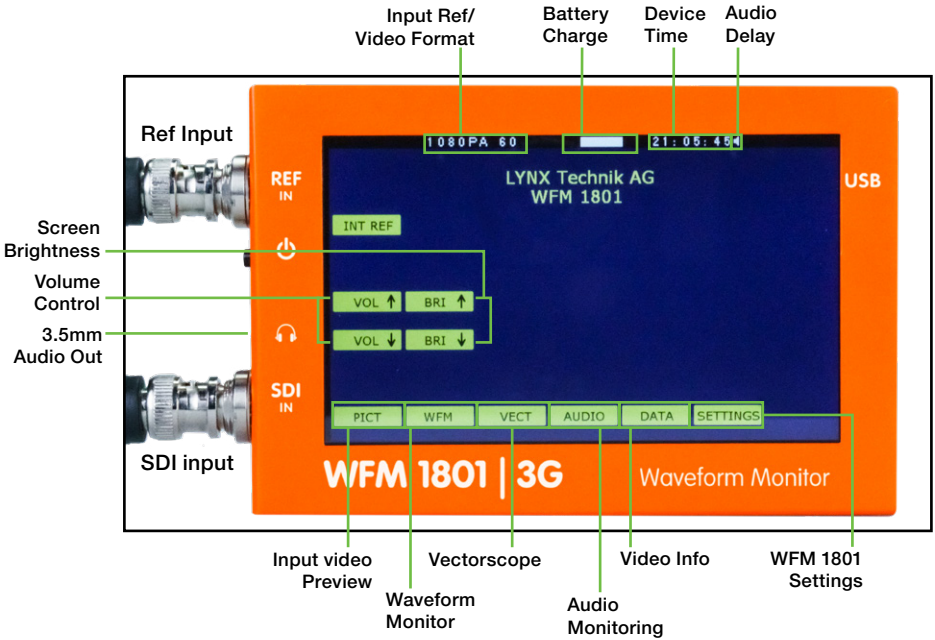
Options
- **PTG CASE** - Protective case, with window for display viewing and operation. Includes belt clip.
- **PTG BATT** - Replacement rechargeable battery
- **PTG 1802 ABS Case** - Hard shell carry case. Impact dampening for safe transport



Contents

Connections / Layout

The image below shows the connections / controls and basic layout of the integrated touch-screen display.



What's in the Box

The WFM 1801 is supplied with the following accessories: USB-DCP charger (plus a variety of regional AC plug adapters) a USB Cable and this User Guide.

Note: We recommend you fully charge the unit when you first receive it. Please refer to the "Power and Charging" section of this guide for more details.

User Interface

The WFM 1801 is equipped with a simple and intuitive user interface that is accessed with the integrated touch screen display. The lower half of the display is dedicated to the menu system which is used to operate the unit. The basic touch screen button functions are shown below:

PICT	This button will open a page showing the preview of the connected video SDI input
WFM	This button opens the waveform monitor that allows in the measurement of brightness or luminance component of the video input signal.
VECT	This button opens the vectorscope that measure the chrominance of a video signal
AUDIO	This button opens the audio monitoring page.
DATA	This buttons opens a page displaying the SDI input errors counts, Cable length and payload.
SETTINGS	This button opens the WFM 1801 settings

Power / Charging

Charging

The WFM 1801 uses the USB port for external power and charging. A USB DCP (Dedicated Charging Port) charger and heavy gauge USB cable are provided to charge the WFM 1801. We recommend that you use the supplied accessories. Using an alternative USB cable may result in the unit not charging.

If using a USB DCP power source then the WFM 1801 can be used and charged at the same time. The device automatically detects if a dedicated USB DCP charger is connected and will draw higher charge current.

Charge Time

When the battery is empty, the following approximate charge times are required to fully charge the battery:

- 120 min. from a USB-DCP supply when unit is turned OFF
- 180 min. from a USB DCP supply when unit is turned ON
- 360 min. from a computer USB 2.0 port when unit is turned OFF

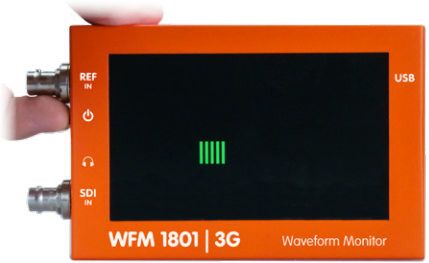
A charge status indicator is always visible on the display. A full charge will provide approximately 3 hours use. When the battery is empty the WFM 1801 will shut down automatically.
Battery life is approximately 500 charge cycles.
A replacement battery is available when needed. Part: PTG-BATT

Note: The rechargeable battery is sealed inside the unit. It is not designed for frequent battery exchange using a spare charged battery. Only change the battery when the installed unit is no longer holding charge. Some disassembly is required. Refer to "Battery Replacement" section of this guide.

Power ON/OFF

Switching ON

When powered OFF, pressing and holding the power button for 1 second or longer will power up the unit and it will be fully operational within 5 seconds. The unit will resume with the last used settings before the unit was shut down. *(Current settings are automatically stored on shutdown).*
The unit will not power up automatically when connected to a USB-DCP charger.



Switching OFF

When powered ON, pressing and holding the power button for 1 second or longer will power OFF the unit.

Automatic Shutdown

With no user activity (touch screen use) the unit will automatically shut down after a given period to preserve battery life.

This can be preset to 5, 10, or 20 minuts or NEVER. Refer to the “Battery Timeout” settings in this guide to preset this function.

Note: While being charged, the module will deactivate the automatic shutdown.

Navigation: HOME > SETTINGS (Make Selection)

Connections

External Reference

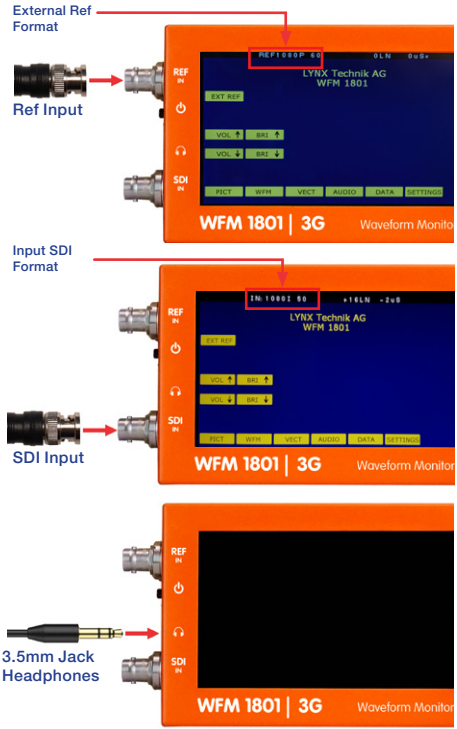
An external reference source can be connected to WFM 1801 as indicated.
The following formats are supported: SMPTE 170M, CCIR624, SMPTE296M, SMPTE 274M, SMPTE 424M.
When switched to external reference format the display toggles between the detected reference and the deteced SDI-signal format or “no-SDI”.

Input SDI

The SDI input signal can be connnected to WFM 1801 as indicated. When no SDI input is connected, the status on top bar will indicated NO SDI INPUT.
The following formats are supported: SMPTE 259M, SMPTE 292M, SMPTE 424M.

Headphone jack

A headphone with the 3.5mm jack can be connected to the WFM 1801 for audio monitoring as indicated.



WFM Settings

Volume Control

Navigation: HOME

You can adjust the audio volume by pressing Vol ↑ or Vol ↓ as indicated.

Setting Screen Brightness

Navigation: HOME

The brightness of WFM 1801 screen can be adjusted by pressing BRI ↑ or BRI ↓ as indicated.

Enabling/Disabling Touch Sound

Navigation: HOME > SETTINGS

You can mute, enable or change key tones for the touch sound on WFM 1801 as indicated. The following options are available: KEY Mute, KEY Click, and KEY Beep.

Un-/muting Error Beep Sound

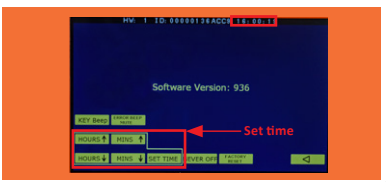
Navigation: HOME > SETTINGS

You can mute or unmute the error beep sound as indicated. The following options are available for selection: ERROR BEEP MUTE and ERRPR BEEP ON.

Setting WFM Time

Navigation: HOME > SETTINGS

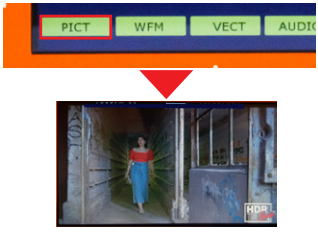
You can set and adjust the WFM time as indicated. Set HOURS and MINS and press on SET TIME to set WFM time.



Input SDI Preview

Navigation: HOME > PICT

WFM 1801 can display the input SDI preview for all the supported formats. To access the input SDI preview, click on **PICT** button as indicated



Waveform Monitor

Navigation: HOME > WFM

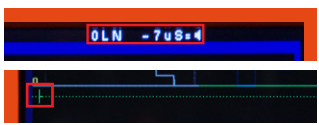
WFM 1801 scale is from 0mV to 700mV. Anything below 0mV is completely black, with no details, and anything above 700mV will be clipped and white, with no details. To open waveform monitoring on WFM 1801, select **WFM** as indicated.

Sweep modes

The WFM 1801 provides full horizontal timing flexibility with *1 LINE, 2 LINE, 1 FIELD* and *2 FIELD* sweep modes. It provides the *LINE SEL* for line selection and *LINE MAG* for magnification. It also provides *PARADE* mode of YCrCb, YRGB and RGB to view individual components beside each other. The sweep modes can be selected as indicated in the picture. The selection of options provided on this button are:

- 1 FIELD
- 1 LINE
- PARADE (RGB/YRGB/YCrCb)
- LINE MAG
- 2 FIELD
- 2 LINE
- LINE SEL

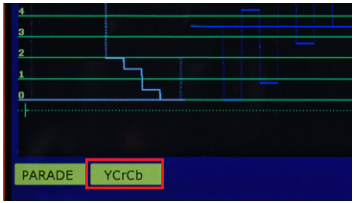
With a connected external Reference you can measure the timing of the SDI Signal. The rightmost marker on the Zeroline in the WFM Display is the 0-timing point.



Color Space

To specify the color space used to display the signal, use the color space button as indicated. The following choices are available:

- RGB- Displays the input as Red (R), Green(G), and Blue (B) components
- YRGB- Displays the input as Luminance (Y), Red (R), Green(G), and Blue (B) components
- YCrCb- Displays the input as Luma (Y), blue-difference (Cb), and red-difference (Cr).



Vectorscope

Navigation: HOME > VECT

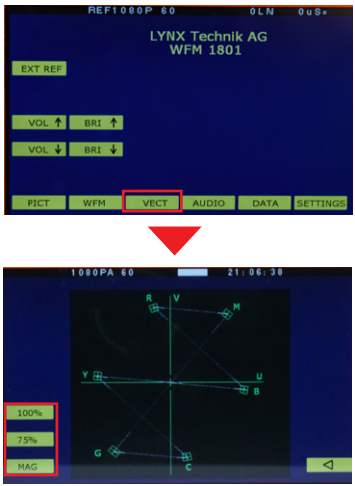
The vectorscope displays six color targets on a polar coordinate system to display hue and saturation measurements. Hue is mapped radially around the center while saturation is measured in distance from the center of vectorscope.

To access Vectorscopn on WFM, press the VECT button on the home page of the WFM as indicated.

There are two targets for each color (red, blue, green, yellow, magenta, and cyan - the primary and seconday colors) and you can set the Vectorscope to display 100%, or 75% saturation. It also provides a mode to magnify Vectors.

The following option are provided:

- 100%
- 75%
- MAG



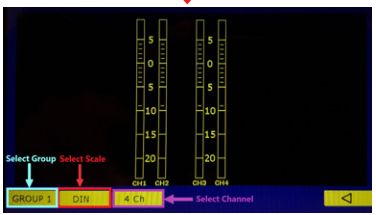
Audio Monitoring

Navigation: HOME > AUDIO

The audio monitoring features in WFM 1801 allows monitoring of up to 16 audio channels embedded on the SDI input signals. The audio monitoring features can be accessed on WFM by pressing the Audio button as indicated.

You can select either 16 channels or any of the four audio groups with four audio channels each for audio monitoring. You can also select the type of audio scale from the below list:

- DIG - Digital
- DIN
- BBC
- NORDIC
- VU (-18dB/-20dB)



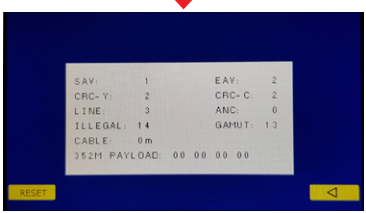
Data & Error counts

Navigation: HOME > DATA

To access Data page, press the DATA button as indicated in the picture.

The Data page on the WFM 1801 provides the following function:

- SDI Cable Length
- 352M VPID Payload hex values
- Timecode presence as VITC or in the Ancilliary data
- Error counts for the following items:
  SAV, EAV, CRC-AP, CRC-FF, LINE, ANC, Illegal Values, and Gamut errors.



Warranty + Registration

Warranty

LYNX Technik AG warrants that the WFM 1801 will be free from defects in materials and workmanship for a period of **three (3) years** from the date of shipment, and the rechargeable battery free from defects for a period of **six (6) months** from the date of shipment. If this product proves defective during the warranty period, LYNX Technik AG at its option will either repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, customer must notify LYNX Technik AG of the defect before expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by LYNX Technik AG, with shipping charges prepaid. LYNX Technik AG shall pay for the return of the product to the customer if the shipment is within the country which the LYNX Technik AG service center is located. Customer shall be responsible for payment of all shipping charges, duties, taxes and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure, or damage caused by improper use or improper or inadequate maintenance and care. LYNX Technik AG shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than LYNX Technik AG representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of non LYNX Technik AG supplies; or d) to service a product which has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty servicing the product.

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Product Registration

Registering will allow us to send push notifications (via email) of updates, bug fixes, new features and product enhancements when they become available. Go to **www.lynx-technik.com** **Support > Register Product**

Service and Support

If you have questions, or are experiencing problems with your WFM 1801, please visit the technical support section of our website.
www.lynx-technik.com to request assistance.
Please have the serial number available (refer to barcode sticker on the rear of the unit).

Battery Disposal

Please dispose of batteries responsibly and respect any applicable local laws and ordinances regarding battery disposal.
LYNX-Technik AG is not responsible for the disposal of broken batteries.

Battery Replacement

The battery will last for approximately 500 charge cycles. A replacement battery is available (Part PTG-BATT). Follow the procedure below to exchange the battery.

1. Remove screws where shown
2. Remove cover

3. Unplug and remove old battery
4. Install new battery & reassemble

Note: Only use OEM replacements from LYNX Technik AG. Please do not try to substitute an equivalent or generic replacement. This could damage the unit and will void any product warranty.

Notes

WFM1801_R01

Technical Specifications

Analog Ref Input	1x BNC connector 75 Ohm
	SMPTE 170M, CCIR 624, SMTE 296M, SMPTE 274M, SMPTE 424M
SDI Input	1x SDI Video, 75 Ohm BNC connector
Input Video Formats	**SDTV 270Mbit**: 525 (480i/59.94), 625 (576i/50)
	HDTV 1.5Gbit: 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080psf/25, 1080psf/24,1080psf/23.97, 720p/60, 720p/59.94, 720p/50, 720p/30, 720p/29.97, 720p/25, 720p/24, 720p/23.98
	HDTV 3G: 1080p/60, 1080p/59.94, 1080p/50
Display	5" LCD 800 x 400 pixels 350cd/m2 with capacitive touchscreen
Waveform Monitor	Timebase selection of Line Mag, 1 Line, 2 Lines, Parade, Line Select, 1 Field, 2 Fields
	Parades of YCrCb, YRGB or RGB.

Vectorscope	75% or 100% vectors and vector magnify
Audio	1 x 3.5mm headphone jack
	Up to 16 channels audio display
	Audio Scale: Digital, DIN, BBC, Nordic, VU
Power	1x mini-B USB for charging & power
	Internal rechargeable battery. Full charge provides approx 4 Hours continuous use.
	External power / charge is provided via the USB port.
Physical	Size (including connectors): 15.6 x 9.2 mm (6.15 x 3.6 in)
	Weight: 340g (12oz)
Ambeint	Temperature: 5-40°C (41-104°F) / Humidity: 90% non condensing
Includes	1x mini-B USB for charging & power, Quick Ref Guide

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www.lynx-technik.com

All LYNX Technik AG products are designed and manufactured in Germany

The contents of this guide and specifications are subject to change without prior notice