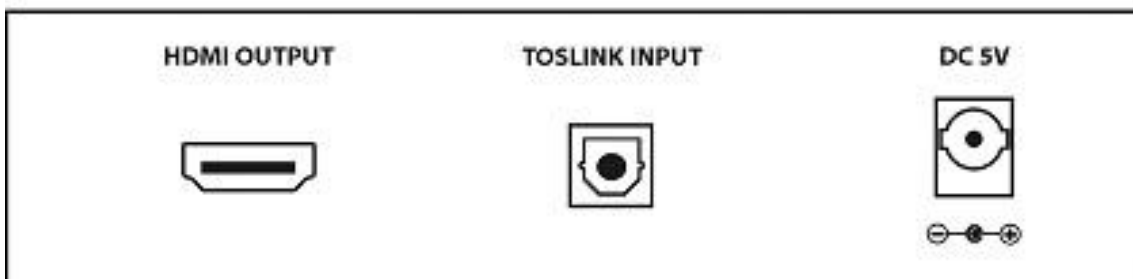
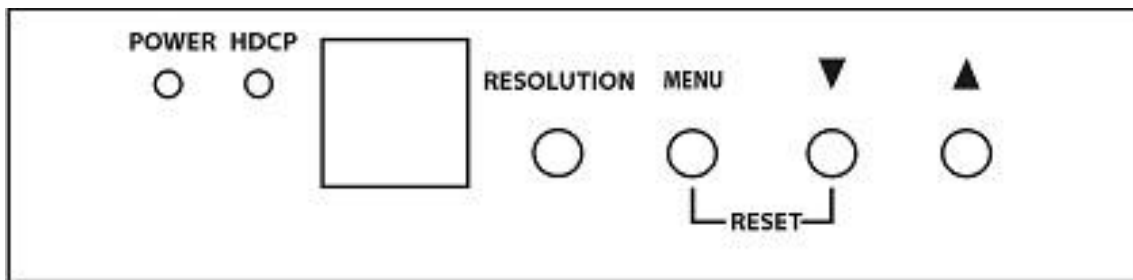


HD-TG HDMI Test Generator Operation Guide



The Intelix HD-TG is an HDMI/DVI-D test generator designed to provide the ability to verify the proper operation of HDMI and DVI-D display devices, such as monitors and projectors. The HD-TG allows any device with an HDMI input (or DVI-D with an optional adapter cable) to be tested with various test signals. The HD-TG is designed to test embedded audio, both internally and externally generated. In addition, the HD-TG tests HDCP functionality, allowing the user to verify proper operation of the video, audio, and security functions of an HDMI display.

Notice:

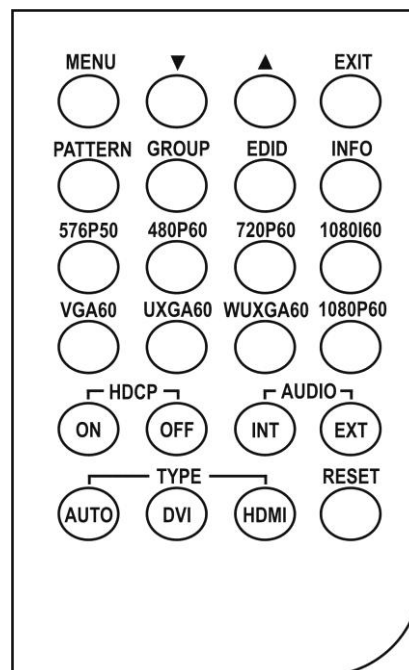
Do not attempt to disassemble or alter the test generator housing. There are no user-serviceable parts inside the unit. Doing so will void your warranty.

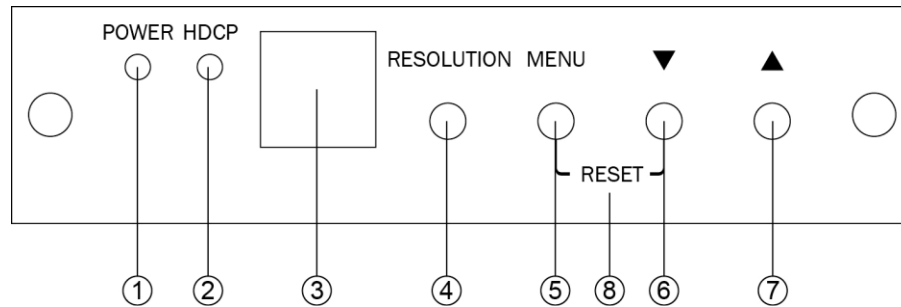
Connecting the HD-TG to a Display Device

Connect the display device's HDMI input to the output of the HD-TG and connect the display device's optical audio output (if desired) to the HD-TG's S/PDIF toslink input.

Operating the HD-TG HDMI Test Generator

The HD-TG can be operated from the front panel or the included IR remote. The on screen display has a menu that allows the operator to select the various test signals and functions of the HD-TG. The IR remote has the same functions as the front panel, plus direct access to many functions in the menu. A line drawing of the remote can be seen on the right. See page 2 for an explanation of how to operate the HD-TG using the front panel controls.





- 1 Power On/Off LED Indicator
- 2 HDCP On/Off LED Indicator
- 3 Remote Control Infrared Sensor
- 4 Resolution – Switches resolution sequentially in the following order:
VGA60→SVGA60→XGA60→SXGA60→UXGA60→WUXGA60→576p50→
480p60→720p50→720p60→1080i50→1080i60→1080p50→1080p60
- 5 Menu - Used to display OSD Menu and make selections from the Menu. (Note that the HDCP function turns off automatically when OSD is present and turns back on when it is no longer visible.) *
- 6 Down Arrow moves OSD cursor towards the bottom of the display.
- 7 Up Arrow moves OSD cursor towards the top of the display.
- 8 Pressing the Menu and Down Arrow buttons at the same time will return the HD-TG to the Factory Default setting.

* The Menu button is also the Select Button. When you have reached the pattern or adjustment you wish to utilize, pressing the Menu button allows selection of the desired function or pattern and allows you to enter the sub menus.

Patterns

Selecting “Pattern” on the main menu will take you to a sub-menu with various pattern groups. These pattern groups can be used to analyze the properties of the display device. The patterns are as follows:



Color Bars - The color bar patterns provide a good overall check on color performance. This includes the checks of burst keying, sub-carrier regeneration, RGB amplifier balance, chrominance/luminance delay and a color saturation check.

When the output resolution is 1080i, the horizontal Color Bar patterns are not supported.



Gray Scale - The Gray scale pattern is used to locate non-linearity in a video amplifier. Non-linearity results in compression of the white level and a loss of high frequency detail.



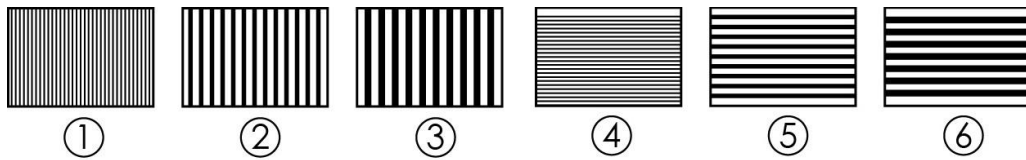
Purity Check - The available purity colors are White, Blue, Red, Magenta, Green, Cyan, Yellow and Black. The red and green patterns are most frequently used for checking color purity.

In a correctly adjusted monitor, only one set of color dots or stripes will be visible. If the red pattern is selected only this color should be visible; the presence of any other color is an indication that color purity needs adjustment.

The green pattern provides a purity check for three in-line tubes. In addition the pattern serves as a reference to locate any geometrical distortions in these picture tubes. In the in-line tubes, the guns are in a horizontal position and the green gun is located in the center.

Blue, as well as the complementary colors, are often used to check the color performance.

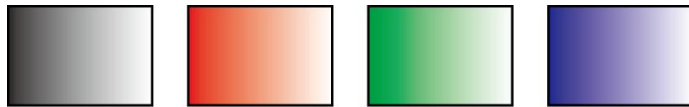
The other patterns (mainly RED) are used to ensure that there is no interference between the sound and chroma carrier. In addition to the primary and complementary colors 100% white can be selected as well as black pattern with color burst. Purity patterns are also used for measuring unwanted amplitude and phase modulation of the sub-carrier, AM and PM noise as it occurs with VCRs.



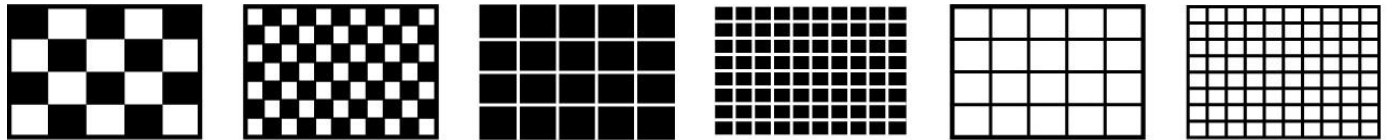
Black/White Lines - The vertical patterns provide a quick way to check the color monitor's horizontal bandwidth and phase behavior. They help verify

video amplifier operation and the display's color temperature. The horizontal pattern serves as a quick way to check of color monitor's vertical bandwidth and phase response. Like the vertical signals, they also are used to verify video amplifier bandwidth and display color temperature.

When the output resolution is 1080i, the patterns 4, 5 and 6 are not supported.



Gradual - These signals check adjustment of the decoders, especially the video de-emphasis decoders. In a monitor, the chrominance signal should have the same amplitude in the active video portion of the signal.



Grid - This pattern is mainly used for checking and aligning dynamic and corner convergence of TVs or monitors. When the output resolution is 1080i 50/60, the Grid patterns are not supported.



HDCP - This pattern is used to test DVI and HDMI monitors with HDCP capability. All DVI and HDMI options, including analyzer options are supported if the HDCP option is installed.



Others - The H pattern is mainly used for checking aligning dynamic convergence and the Dot pattern is used for checking and adjusting the static convergence. When using the Dot pattern, the screen should contain pure white dots. The presence

of colored dots points to problems with focusing and convergence.

The Cross center is used to check and adjust the geometric distortion. The Cross center is ideal to center images on TV monitors and to facilitate alignment of picture height/picture width. It is also used to check deflection linearity and pincushion correction.

The Motion pattern is to check the correct digital video processing, especially Analog to Digital conversion. When Motion pattern is On, the HDCP function will be turned Off. When the user switches to other patterns, the HDCP function will be turned back On.

Technical Specifications

Audio Input	
Optical Audio (Ext. Audio)	1x S/PDIF via Toslink Connector
Video Output	
HDMI	1x via Type A HDMI Connector (Note 1)
HDMI Transport	
Frequency Bandwidth	1.65Gbps (Single Link)
Supported PC Resolution	Up to WUXGA/60
Supported HDTV Formats	480p, 576p, 720p, 1080i (Note 2) and 1080p
Audio (Embedded)	1Khz Sine wave Int. or Ext., 48Khz Sample Rate
Compliance	HDMI, HDCP, DVI
Video Test Patterns	
36 Video Patterns	In 8 Groups
Control Methods	
Local Control	Front Panel via Push Button Switches
Remote Control	1x Infrared Remote Control
Warranty	
Limited Warranty	2 Years Parts and Labor
Mechanical	
Size (H-W-D)	1.2"x4.9"x4.9" (30x125x125mm)
Weight (Net)	0.72lbs (334g)
Environmental	
Operating Temperature	0° to +48°C (+32° to +120°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +70°C (+32° to +120°F)
Storage Humidity	10% to 90%, Non-condensing
Power Requirement	
External Power Supply	5VDC@2.6A
Regulatory Approvals	
HDMI Test Generator	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS
Accessories Included	
1x AC Power Adapter	
1x Operation Guide	
1x IR Remote Control	
Notes	
(1) PC Video & DVI Video operation is possible using optional adapters.	
(2) The timing of the 1080i output signal is very critical; therefore it may not be compatible with all displays.	