PARK-MHTB-2009-HDC-2

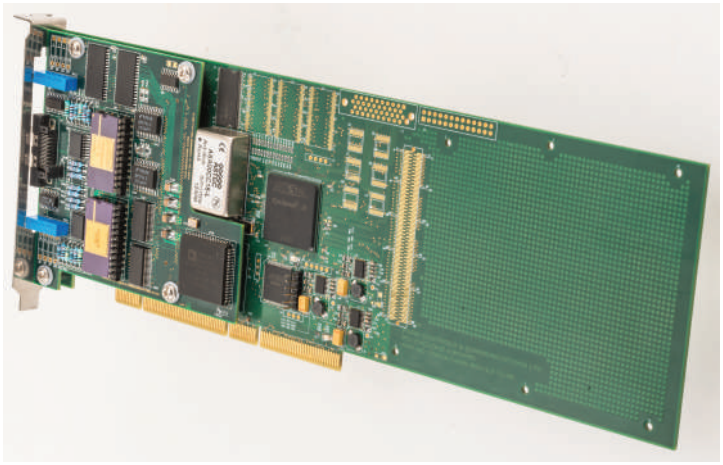
Mobile Head Up Display Tester

Overview

The PARK MHTB 2009 is a semi Automated Test Equipment which facilitates testing and calibration of CRT based Head Up Display Units used across Aircrafts such as LCA, SU30, IJT, etc. The PARK MHTB 2009 assists in testing and adjusting display characteristics such as write speed, uniformity, resolution, placement accuracy, convergence and other visual aspects as perceived by the pilot. The PARK MHTB 2009 generates various kinds of static and dynamic displays patterns, which help in calibration of the HUD in STROKE, RASTER and HYBRID modes of operation.
The PARK MHTB 2009 generates test patterns required to test all operating characteristics of the HUD CRT Assembly.
The PARK MHTB 2009 is configured in a Mobile Industrial platform. A two channel digital Oscilloscope (Agilent 6012A) can be used to perform measurements on various signals.
The PARK MHTB 2009 is equipped with PARK HDC-2 Head up display controller board which can control CRT based HUDs from manufactures like SEXTANT and uses WINDOWS operating system environment to run various test programs to generate different test patterns.

The **PARK HDC-2 HUD** controller is the heart of the system supports the following features:

- PCI bus plug in board
- Unique DSP based architecture for on the fly display refresh
- 20 MHz ADSP 2101 DSP for real time vector synthesis
- Dual ping pong Vector buffers for display refresh
- 32K x 16 static RAM for each Vector buffer
- 12 bit high speed DACs for X and Y deflection
- ± 20 V full scale differential drive for X and Y outputs
- ± 5 V differential drive for Z-axis control
- Control signals for Hybrid and cursive mode selection
- End of slew input signal
- Downloadable firm ware for vector generation
- Ability to refresh the display automatically from a list of graphic primitives loaded into the local buffers
- 20 ms frame update rate
- End of frame draw interrupt
- Resolution 1024 x 1024 pixels
- Line drawing speed:
  - 70^0 / msec in full cursive mode
  - 190^0 / msec in Hybrid mode
- Maximum Pixel drawing speed 10 million pixels / sec
- 'C' language library support
- Test pattern generators like Frids, Concentric circles, Text generator, Dynamic flight display simulator



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Technical Specification HUD signal Simulator

Sl. No.	PARAMETERS	RECOMMENDED SPECS
1	X Deflection (Differential)	Analog +/- 20 V
2	Y Deflection (Differential)	Analog +/- 20 V
3	Z Blanking:	Digital - TTL - Differential
4	Logic 0	Blanking
5	Logic 1	Bright up
6	Cursive / Raster Control	TTL Differential
7	End of slew:	TTL Differential (Option to enable or disable End of Slew Signal)
8	Logic '1':	Slewing
9	Logic '0':	End of Slew
10	Line driving speed	70 deg / msec in full cursive mode
11	190 deg / msec	In mixed mode

PC Specifications

Rugged Portable Computer.

- 17.3" Diagonal TFT Color Display, 1920 x 1080 resolution
- Includes Antiglare Protective Glass Over Display
- (2) USB 2.0 Ports (front)
- Rugged Aluminum / Steel Chassis design c/w corner rubber bumpers
- Dual cooling fans, (1) fan in power supply
- Dimensions : 17.01" W x 13.6" H x 9.57" D; Weight : approximately 40 lb.
- Padded carry case c/w wheels and retractable pull handle
- 100V - 240V AC, 47Hz - 63Hz, 10A Input, ATX power supply, 650 Watt 80+ Gold
- VGA and HDMI video ports
- Dual integrated 10/100/1000 Base-T Gigabit Ethernet Adapters, RJ-45
- (2) RS232 Serial Ports, DB-9
- (4) USB 3.2 Gen 1 Ports (rear)
- (2) USB 2.0 Ports (rear)
- Onboard Realtek ALC662 HD Audio
- Expansion Slots:
- 1 x PCIe 3.0 x16
- 1 x PCIe 3.0 x4
- 5 x PCI
- Includes Intel Core i7-10700TE, up to 4.4GHz, 32/64-Bit
- 8 x Cores/16 x Threads (8C/16T)
- 16 MB Intel Smart Cache
- Intel HD Graphics 630
- 16 GB DIMM, DDR4
- 1TB Hard Drive, SATA
- DVDRW / CDRW Optical Drive, SATA, 5.25"

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List of Deliverables

SL. NO.	ITEM DISCRIPTION	QTY.
1	PCI HUD CARD	1
2	Mating Connector	1
3	Rugged Portable PC with Trolley	1

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