

Q26 MLB Board Functional Test Coverage

APPLE - Need to Know only

Worldwide Diagnostic and Test, PCB Functional Test Development Group

Rev	Date	Comments	Released by	RFA#
EVT	11/1/2002	Preliminary release for EVT	Patrick Lam	
DVT	12/12/2002	release for DVT	Patrick Lam	
PVT / ramp	1/20/2003	release for PVT / ramp	Patrick Lam	258127
R1.1	1/27/2003	release for PVT / ramp	Patrick Lam	259215
R1.2	2/7/2003	update to Indy 2.1.1, GZControl v1.0a2, check for either 4.5.6d2 or 4.5.8f1 bootROM	Patrick Lam	260862
R1.3	2/20/2003	update to Lakota H58, GZControl v1.0a3, check for either 4.5.8b2 or 4.5.8f1 bootROM	Patrick Lam	262679

Build	Rom ver	System SW ver	Diag Release	Raw test time
EVT	4.5.4b8	Lakota H10	Indy 2.1a5	550 seconds
DVT	4.5.5d4	Lakota H17	Indy 2.1b1	680 seconds
PVT / ramp	4.5.6d2	Lakota H52	Indy 2.1 (final)	630seconds
R1.1	4.5.6d2	Lakota H52	Indy 2.1 (final)	730seconds
R1.2	4.5.6d2 / 4.5.8f1	Lakota H52	Indy 2.1.1 (final)	730seconds
R1.3	4.5.8b2 / 4.5.8f2	Lakota H58	Indy 2.1.1 (final)	770seconds

Notes:

- running nVidia test 19 at mclk 275 / nvclk at 306 for 5 times and the whole MODs suite which including test 19 at mclk 283 / nvclk at 306.
- new VSP DMA cmd line test
- Indy2.1.1 based with drop in of_firewire.tcm (1.4.9), new AudioIO.prm and VSPDMAVerifyTest

TDF file version	Q26.tdf
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Others Applications/Tests

Application	Version
GZController	v1.0a3
LVServer	LVServer 1.60 2/17/03
FireEchoOHCI	1.3.5

- Test order below does not necessarily reflect launch order, look at Q26.tdf file in UUT HD.

Diag OF tests

Package ID	Test ID	Test Name	Versions	Remarks	
Airport			√	1.0.0	
01000000	1	Card Presence	√		Test for the presence of the Airport Wireless Card.
	2	IO Reg Write Read			Test the Airport IO Registers.
CPU			√	1.4.2	
04000000	1	Simple FPU Test	√		Performs a simple FPU test.
Display			√	1.0.7	
06000000	1	White Screen			Display a white screen.
06000000	2	Black Screen			Display a black screen.
06000000	3	Red Screen			Display a red screen.
06000000	4	Green Screen			Display a green screen.
06000000	5	Blue Screen			Display a blue screen.
06000000	6	Grey Screen			Display a 50% grey screen.
06000000	7	Checker			Display a grey screen using alternating black and white pixels.
06000000	8	Checker 2			Display a grey screen as above, but inverted.
06000000	9	Vertical Color Bars			Display RGB color bars.
06000000	10	Horizontal Color Bars			Display RGB color bars.
06000000	11	Border			Display Border.
06000000	16	EDID checksum Test	√		Verify EDID checksum vs calculated.
FireWirePort			√	1.1.4	
17000000	1	100Mb/s block write request test	√	A	Sends 8K packets (max. payload)
17000000	2	100Mb/s quad write request test			Sends 8K quadlet packets
17000000	3	100Mb/s block read request test	√		Sends 8K block read requests
17000000	4	100Mb/s quad read request test		A	Sends 8K quad read requests
17000000	5	100Mb/s isochronous test			Loops 8K isochronous packets (max. payload)
17000000	6	200Mb/s block write request test			Sends 8K packets (max. payload)
17000000	7	200Mb/s quad write request test	√	A	Sends 8K quadlet packets
17000000	8	200Mb/s block read request test			Sends 8K block read requests
17000000	9	200Mb/s quad read request test	√	A	Sends 8K quad read requests
17000000	10	200Mb/s isochronous test			Loops 8K isochronous packets (max. payload)
17000000	11	400Mb/s block write request test	√	A,B	Sends 8K packets (max. payload)
17000000	12	400Mb/s quad write request test	√	A,B	Sends 8K quadlet packets
17000000	13	400Mb/s block read request test	√	A,B	Sends 8K block read requests
17000000	14	400Mb/s quad read request test	√	A,B	Sends 8K quad read requests
17000000	15	400Mb/s isochronous test	√	A,B	Loops 8K isochronous packets (max. payload)
PCI.OHCI.FireWire			√	1.0.1	
0c050000	1	Register Test	√		Performs walking 1's test across selected registers
0c050000	2	Set/Clear Register Test	√		Performs set/clear test across selected registers
0c050000	3	PHY Register Test	√		Performs walking 1's test across selected PHY chip registers
I2S.Snapper			√	1.0.0	
1a010000	1	Init TAS Chip	√		Initialize TAS3001C/TAS3004
1a010000	2	I2S A & I2C Registers	√		Sound Related I2S A & I2C Register Test
PCI.Nvidia			√	1.0.0	
0c030000	1	Frame Buffer Address As Data Test	√		Test the frame buffer using address as data and address as data.
MLB.POST			√	1.0.0	
0c030000	1	POST Results	√		Check results of POST
0c030000	4	Select Memory Quick Test			Set-up to run the Quick Memory Test
0c030000	7	Select Simple RAM Test			Set-up to run a Simple Ram Test
MLB.ROM			√	1.0.1	
0a040000	1	ROM Checksum	√		Perform ROM Checksum of block, main, and recovery images
Storage.Fixed			√	1.0.2	
0f010000	1	Device Self-Test	√		Run the Device's self-test
0f010000	2	PIO Read Single Block	√		Read using PIO the first block for 1 block on the device
0f010000	3	PIO Read Many Blocks			Read using PIO starting at the first block for 100 blocks
0f010000	4	PIO 4 Corner Read Test	√		Read using PIO at the start, middle, and end of the device for 100 blocks
0f010000	5	DMA Read Single Block			Read using DMA the first block for 1 block on the device
0f010000	6	DMA Read Many Blocks			Read using DMA starting at the first block for 100 blocks

0f010000	7	DMA 4 Corner Read Test	√		Read using DMA at the start, middle, and end of the device for 100 blocks
Storage.Remove					
0f020000	1	Device Simple Test	√	1.0.2	Run a simple test on the device
0f020000	6	Random Read 2 Quick	√		CD Quick Random reads on a Apple or Sony CD-ROM TEST DISK 2
PCI.GMAC					
0c070000	1	Register test	√	1.0.2	Check Ethernet Registers
0c070000	2	Internal loopback test	√		Perform internal cell loopback test.
0c070000	3	PHY loopback - 10 mbps test	√		Perform loopback via the PHY at 10 Mbit/sec.
0c070000	4	PHY loopback - 100 mbps test	√		Perform loopback via the PHY at 100 Mbit/sec.
0c070000	6	Tx FIFO RAM test	√		Test the transmitter FIFO RAM
0c070000	7	Rx FIFO RAM test	√		Test the receiver FIFO RAM
0c070000	12	External loopback - 10 Mbps test	√		Perform loopback via the loopback plug at 10 Mbit/sec
0c070000	13	External loopback - 100 Mbps test	√		Perform loopback via the loopback plug at 100 Mbit/sec
PCI.OHCIUSB					
0c060000	1	USB Register Test	√	1.0.0	Performs walking 1s test across selected USB registers
Diag OS tests					
AudioIO					
96000000	1	Headphone Detection Test	√	1.0.0	Detect whether the jack has a connection
96000000	2	THDN Test	√		
96000000	3	Channel Separation Test	√		
96000000	4	Left/Right Speaker Test	√		Play sound out the left, then right speaker
BlueTooth					
83000000	1	Bluetooth USB Interface Test	√	1.0.1	Exercise various bluetooth HCI commands via bluetooth USB interface
Display					
86000000	30	EDID Checksum Test	√	1.2.3	Calculate EDID checksum
86000000	59	Cube with Fog Test			Render Cube with Fog
86000000	61	Textured Lighted Model Test			Render Solid Red Model
Network					
87000000	2	Ping test	√	1.1.0	Ping a target IP address
CPU.G4					
84010000	1	MaxVV	√	1.0.1	Max Vector Verification Suites
84010000	2	vBasicOpsTest			Vector based Basic Operation Test
84010000	3	vBigNumberTest			Vector based big number Operation Test
84010000	4	vectorOpsTest			G4 Vector Operation Test
84010000	5	vMathLibTest	√		Vector based Math Library Test
PCI.Nvidia					
8c030000	17	JsMemSize	√	1.0.4	Check if the BIOS/FCODE sized the memory correctly
8c030000	3	Mats	√		A generic frame buffer memory test designed to catch coupling faults within memory arrays
8c030000	19	FastMats	√		Similar to Mats, except use GPU hardware writes instead of CPU writes
8c030000	4	MemInterface	√		Test the GPU's memory interface
8c030000	23	MemPatt	√		Test the GPU's memory interface
8c030000	5	Class039	√		Test the DMA engine and memory interface
8c030000	29	AppTest	√		AGP stress test
8c030000	7	Class04a	√		Test the GPU's acceleration circuitry to render clipped and unclipped rectangles
8c030000	10	Class05f	√		Test the GPU's BLIT circuitry
8c030000	21	Class07a	√		Test the GPU's overlay video circuitry with support for dual head devices
8c030000	15	Class077	√		Test GPU's image filtering acceleration circuitry
8c030000	48	Class089	√		Test GPU's scaled image from memory functionality
8c030000	16	glr_hwtest	√		Test the 3-D graphics engine by issuing random graphics operations through OpenGL driver.
MLB.VSP					
8a060000	1	VSP TB Suite	√	1.0.0	VSP test bench suite for each VEO in VSP
USBPort					
98000000	1	USB 1.1 Speed Verification Test	√	1.0.1	Test the transfer speed for USBPort.
MLB.PMU					
8a020000	1	Sleep Test	√	1.0.1	Sleep test
MLB.POST					
	1	POST Results	√		
GenZ tests					
FireWirePort					
	1	GENZ Switch FW relay for Port #1	√		
	2	GENZ Switch FW relay for Port #2	√		
	4	Disconnect FW Ports	√		
PCI.GMAC					
	2	Ethernet Connect to Server	√		
	3	Ethernet Connect to Controller	√		