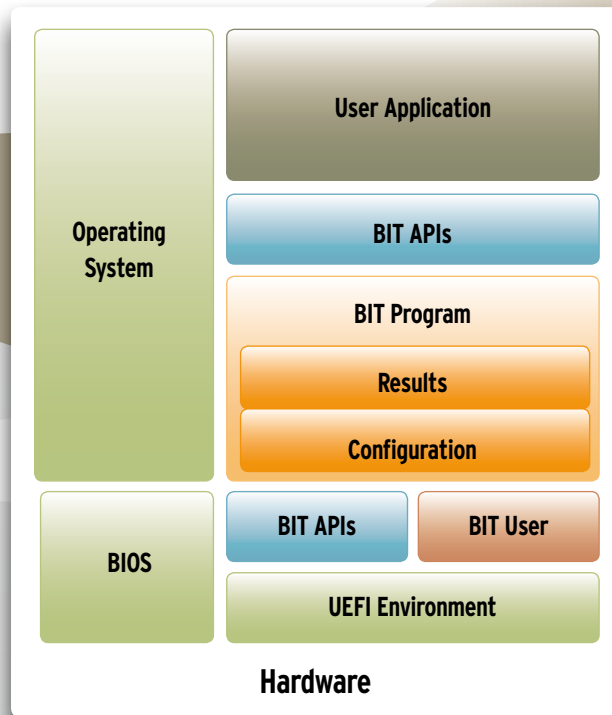


PBIT

Power-On Built-In Test Solution for ONYX



► For Power Up test coverage and problem solving on ONYX SWaP-C rugged computers

PBIT is an acronym for Power-on-Built In Test. Its main purpose is to test the computer platform prior launching the main software to assess its proper behavior and health status*. According to the results, a system can decide to cancel the normal operation and enter a planned alternate mode, or stop all activity and report a fault. Available on our SWaP-C ONYX ready to application platform, ECRIN provides an extensive framework for highly configurable Built-In Test with comprehensive results.

ECRIN PBIT is featured on ONYX series deploying embedded and ruggedized Military (ground vehicles, robots), Aerospace (UVSs, UAVs, UCAVs, military and civilian manned aircrafts), Navy (shipboards, submarines, UUVs) and Transportation systems or any other robots in harsh environment requiring rock-solid reliability and dependability.

PBIT features

ECRIN PBIT (Power-On BIT) is executed at cold start of the computer. Performed at BIOS level, under UEFI environment, ECRIN PBIT is OS independent and allows intrusive test execution. ECRIN PBIT can run automatically or in an interactive mode under UEFI thanks the Graphical User-friendly Interface (GUI). PBIT supports 3 different execution modes to cope with your execution environment:

Test Profile	Run Time	Coverage of testable components
Fast	15s	75%
Normal	60s	85%
Exhaustive	150s	95%



Configurability

Fully customizable through the UEFI GUI, the three test profiles can be tuned by selecting each component to be tested. Thanks to this configurability, the system's boot time can be tailored to your needs by choosing the more adapted tests sequence to your specifications.

PBIT Graphical User's Interface allows you to determine which component is critical and should lead to a computer stop or only to a warning message in case of failure.

PBIT is executed under UEFI environment, thus results are available at UEFI GUI and customer application levels.

Ecrin Built In Test Configuration				
Ecrin Built-In Test Execution mode				
ID	Component Name	Fast	Normal	Exhaustive Critical
ram	4 Gb of DDR3	FALSE	TRUE	TRUE FALSE
eth	Ethernet 825741	TRUE	FALSE	FALSE TRUE
corei7_d0:f0	Integrated Memory Controller	TRUE	FALSE	FALSE TRUE
corei7_d2:f0	Integrated Graphics Display	TRUE	FALSE	FALSE TRUE
corei7_d1:f0	PCIe device	TRUE	FALSE	FALSE FALSE
corei7_d1:f1	PCIe device	TRUE	FALSE	FALSE FALSE
corei7_d1:f2	PCIe device	TRUE	FALSE	FALSE FALSE
pch_d30:f0	PCI-to-PCI bridge	TRUE	FALSE	FALSE FALSE
pch_d31:f0	LPC Interface Bridge	TRUE	FALSE	FALSE FALSE
pch_d31:f2	First SATA Controller	TRUE	FALSE	FALSE FALSE
pch_d29:f0	First EHCI Controller	TRUE	FALSE	FALSE FALSE
pch_d31:f5	Second SATA Controller	TRUE	FALSE	FALSE FALSE
pch_d26:f0	Second EHCI Controller	TRUE	FALSE	FALSE FALSE
pch_d27:f0	Intel HD Audio Controller	TRUE	FALSE	FALSE FALSE
pch_d31:f3	SMbus Controller	TRUE	FALSE	FALSE FALSE
pca9535	PCA9535	TRUE	FALSE	FALSE FALSE
adt7490	ADT7490	TRUE	FALSE	FALSE FALSE
pch_d28:f0	1st PCIe	TRUE	FALSE	FALSE FALSE

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PBIT specifications

Component	Test type	Test Mode activation (default value)		
		Fast	Normal	Exhaustive
RAM Memory	Size	●	●	●
	Timing	●	●	●
	March C test		●	●
	Conventional test	●		
	ECC test	●	●	●
Ethernet	Presence Test	●	●	●
	ID Test	●	●	●
	Functional mode		●	●
	Loopback		●	●
Serial link	Presence Test	●	●	●
	ID Test	●	●	●
	Functional mode		●	●
	Loopback		●	●
BIOS	Integrity checking	●	●	●
PCI/PCIe bridges	HW configuration	●	●	●
	Presence Test	●	●	●
GPIO	GPIO Read/Write	●	●	●
Core I7	Memory access modes	●	●	●
	Cache	●	●	●
	Instruction set	●	●	●
Sata controllers	Presence Test	●	●	●
Thermal sensors	Dies Temperature	●	●	●
	Boards Temperature	●	●	●

*behavior and health status: Packaging failure, solder cracking, corrosion, semi-conductor failure, capacitor leakage, PCB electrical leak detection

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