

Advanced-PS™ Data Hiway System

Integrated Hiway Evaluation and Analysis Tool

1. Description

Integrated Hiway Evaluation and Analysis Tool (hereinafter IHEAT) is a hardware and software solution used to evaluate the health and performance of Data Hiway systems. The IHEAT consists of two key components:

- A suite of software analysis tools
- A Data Hiway Interface Module that interfaces the Data Hiway network to the software analysis tools via USB

The functions of the IHEAT can be broken into two main categories:

- Regulator/Power Supply health checks
- Data Hiway communication monitoring and error detection/capture

2. Benefits

The IHEAT provides the information necessary to return Data Hiway systems to their original performance, robustness and reliability.

IHEAT is designed to not transmit any signals onto the Data Hiway but only monitor Data Hiway transactions for diagnostic purposes. Therefore, no disturbance occurs on the Data Hiway network during operation.

3. Two Modes of Operation

The IHEAT can check the health of Bulk Power Supplies and Voltage Regulators:

- The IHEAT checks the output voltage and ripple of the supplies/regulators
- The voltage and ripple values are captured and logged to a file

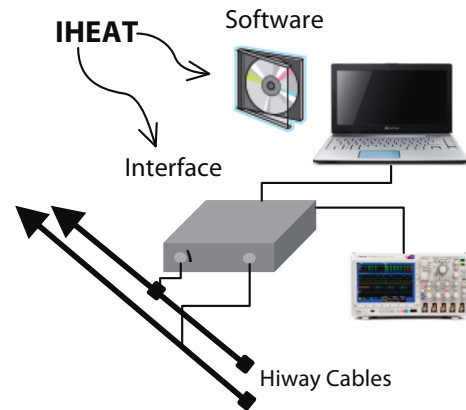
IHEAT client software also enables site service personnel to diagnose Data Hiway networks by detecting Hiway communication errors or evaluating signal levels sent from each Hiway Box.

The IHEAT has multiple tools to analyze Data Hiway communications:

- The ability to capture all Data Hiway traffic to a file
- Report the amount of Hiway traffic
- Report all Data Hiway communication errors even if a retry was successful
- Count and report the number of errors on each cable
- Report the number and type of errors per Box
- Log all errors to a file
- Report/Log the signal amplitude of the data on the Data Hiway coax
- Locate bad Data Hiway Coax cables without the requirement for a Time-Domain Reflectometer (TDR)

4. Communications Error Reporting

The IHEAT detects, counts and logs the following communication errors into a file:



- No Response
- BCH Error (multiple cyclic random error-correcting codes)
- Cable Echo Error
- Illegal Response
- No Response for Security Word
- Receive Error

5. IHEAT Oscilloscope Trigger

The IHEAT also has the ability to trigger an external Digital Storage Oscilloscope (user supplied) and provide raw or buffered data based on these events:

- No Response
- BCH Error
- Cable Echo Error
- Illegal Response
- No Response for Security Word
- Receive Error
- Source Address

6. Connection Method

The IHEAT Hiway Interface Module is connected to an end point of each Data Hiway branch segment. A pair of 2 meter Hiway cables is recommended to be added via a pair of Tee connectors at the end point of the Data Hiway segment.

IHEAT software is loaded onto a user supplied laptop or tablet computer then connected via USB cable to the Hiway Interface Module following the onscreen instructions.

User supplied oscilloscopes may be connected to the Hiway Interface Module via standard oscilloscope signal cables.

7. Services

Azbil can provide a variety of services to facilitate the installation, setup and ongoing monitoring of your Data Hiway network. Once the error files are collected, Azbil can analyze the data onsite or remotely. Recommendations can be provided for network improvement and error remediation.

8. System Components

The IHEAT Data Hiway monitoring package (Model No. J-HEAT0) consists of the following items:

Table.1 IHEAT Package (Model No.J-HEAT0)

Item	Quantity	Reference Number
IHEAT box	1	J-HTA10
50 cm USB Cable-mini B	1	J80603956001
IHEAT Install Media	1	J80603953001
Scope Probe	1	J80603957001
AC adapter	1	J80603963001

9. Additional Items

Table.2 User Supplied

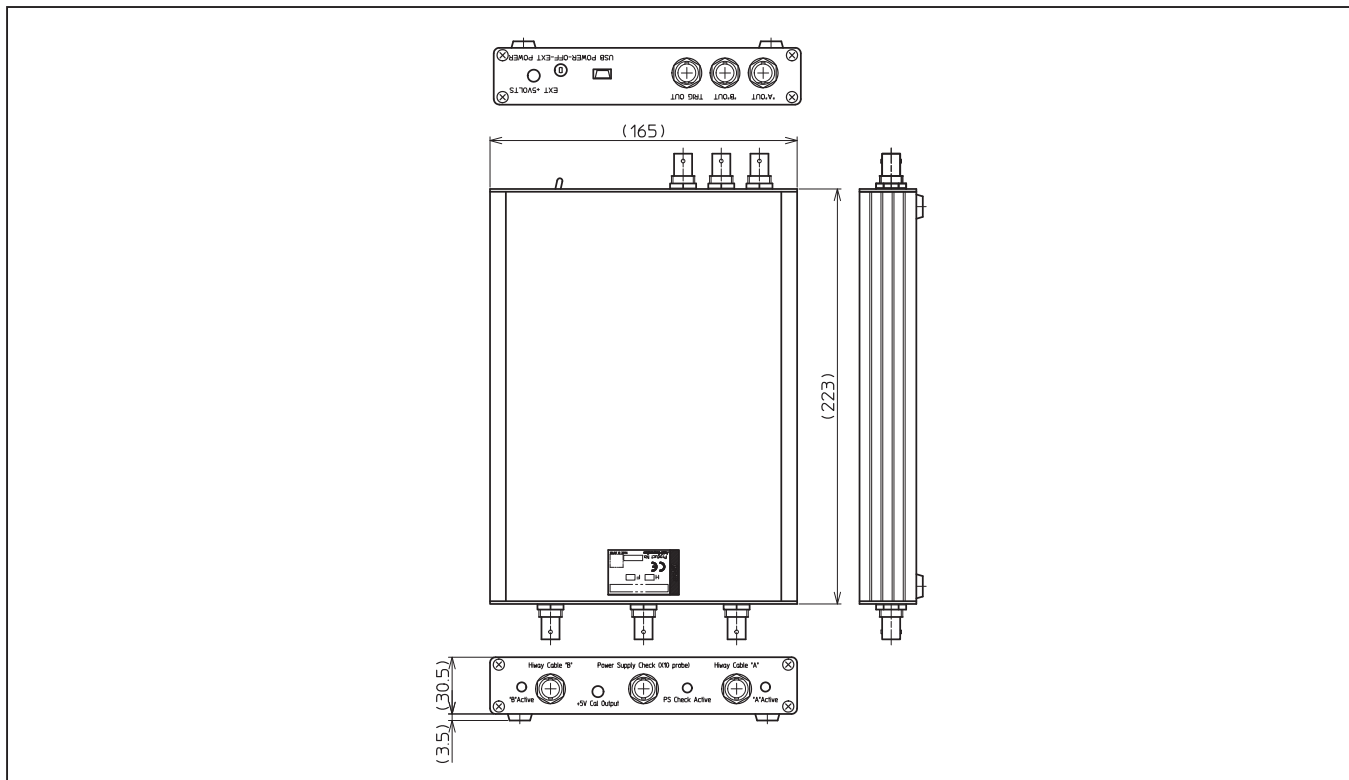
Main Item	Item	Specifications
Laptop or Table Computer	OS	Windows XP Windows 7
	CPU	Core i5 Processor
	Memory	2 G Byte
	Hard Disk Space	8 G Byte
	Interface	USB 2.0 Port
Data Hiway Cables	Two 2 m cables with tees and terminators (if required)	
Digital Storage Oscilloscope	Hardware or software based	
Oscilloscope Cables	Signal	Quant. (2)
	Trigger	Quant. (1)

10. Environmental Conditions

Table.3 Environmental Conditions

Item		Specification			
		Reference Condition	Operating Condition	Operating Limit	Transportation & Storage Condition
Ambient Temperature	Range (deg c)	25±2	0 to +40	0 to +50	-40 to +70
	Change Rate (deg c/min)	0	0.25	1	5
Relative Humidity	(%RH)	45±5	10 to 90 %	5 to 90 %	5 to 95 %
Vibration	Frequency	0	0 to 60	0 to 60	0 to 60
	Acceleration	0	0.1	0.2	0.5
	Amplitude mmp-p	0	0.75	0.75	-
Impact	Acceleration (g)	0	1	5	25
	Impact time (msec)	0	30	30	30
Corrosive Environment	Conformal Coated				
EMI	EN55011 compliant				
RFI	EN61000 compliant				

11. Dimensions



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Specifications are subject to change without notice.

The logo for Azbil Corporation, featuring the word "azbil" in a bold, lowercase, sans-serif font.

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