

Advanced-PS™ Data Hiway System Integrated Common Electronics (ICE)

1. Description

The Integrated Common Electronics Card (ICE) is a single board design that replaces the existing CPU, memory (RAM/ROM), Trend, & both Data Hiway Interface cards for the Hiway devices designated in this document. The ICE supports Data Hiway user requirements for economical continuation of process controls and process interface functions which are crucial for safe and stable process plant operations. The ICE board provides numerous benefits to Data Hiway users:

- By replacing older, limited life technology with today's state of the art technologies, azbil can assure long term manufacture of new spare parts
- Spare parts inventories reduced from 44 different spare parts to 1
- Power consumption reduced by up to 70%
- Reliability improved due to state of the art components and circuit design
- Device robustness improved via enhanced internal diagnostics
- Improved ease of use via multi-segment LED display to indicate the Box Address and the Hiway device personality selected
 - Individual LEDs provide diagnostic and status information
 - Hiway device personality is determined via simple jumper selection and may be changed at any time based on user needs
 - All supported device personalities are included on the ICE board so no additional programming or upload/download is required for use in Hiway common card files

2. General Specifications

The ICE is a single board (PWA) direct replacement of existing Data Hiway Interface, CPU and memory cards in Controller, PIU and DHP card files. ICE is compatible with the following Hiway device types:

- Basic Controller (CB)
- Reserve Controller Director for Basic Controller (RCD)
- Extended Controller (EC)
- Reserve Controller Director for Extended Controller (RECD)
- Multifunction Controller (MC)
- Reserve Controller Director for Multifunction Controller (RMCD)
- Hi-Level Process Interface Units (HLPIU)
- Lo-Level Process Interface Units (LLPIU)
- Lo-Energy Process Interface Units (LEPIU)
- Data Hiway Port (DHP)

Existing circuit boards such as I/O, DEP/DIDEP, Comm. Logic, SBLA etc that are not replaced by the ICE board remain in the card file and are not affected by ICE board operation.

The ICE board model number J-CCE10 is provided for new system orders. The ICE board and associated parts may also be ordered by part number as follows:

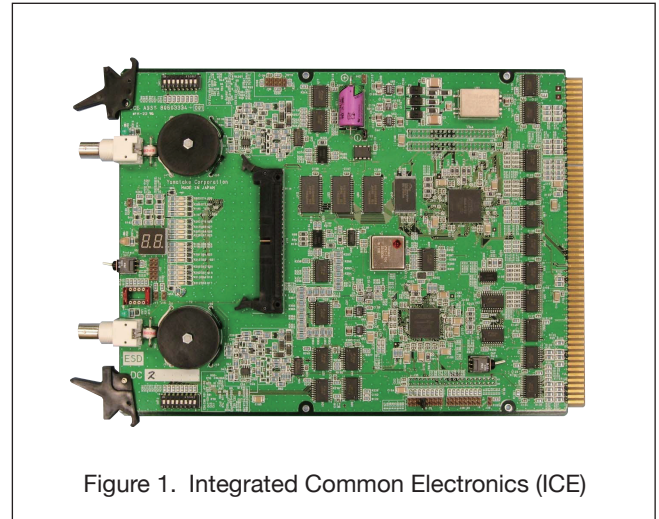


Figure 1. Integrated Common Electronics (ICE)

PART NO.	DESCRIPTION
80603334-003	ICE PWA w/CD and PIU Kit
80603673-001	ICE PIU Backplane Jumper (see notes)
80603735-001	MFC address Adapter (see notes)
82116116-005	Data Hiway 0.5M cables (see notes)
MS2-SYS100-3008	ICE Installation Instructions

Following the proper board replacement process described in the ICE installation instructions simply select the Device (Box) personality and Hiway address via jumper and switch selections on the ICE board. Then replace all boards in the slots listed in the tables shown below with the ICE board and reload/restart the Device.

2.1 Part numbers replaced by ICE per Hiway device (Box) type

Basic Controller and Reserve Basic Controller		
Slot No.	Part No.	Description
2	30750338-005/505	Hiway #2 PWA
3	30731817-006/506	Hiway #1
	51305408-100	UDHI
	51305701-100	UDHI2
4	30735974-002/502	Trend Memory PWA
5	30750218-009/509	1D.2 Memory PWA CB
6	30731832-001/501	Processor PWA CB
	51305390-100	UCPU (CB)
7	30731673-001/501	CORE Mem PWA CB
	30735857-001/501	CMOS Mem PWA CB

Extended Controller and Reserve Extended Controller		
Slot No.	Part No.	Description
2	30750338-004/504	Hiway #2 PWA
3	30731817-006/506	Hiway #1
	51305408-100	UDHI
	51305701-100	UDHI2
4	51304528-100	EDAC Mem PWA
5	30751044-009/509	ROM PWA
6	30731832-002/502	Processor PWA
	51305390-300	UCPU (EC)
7	30731673-002/501	CORE Mem PWA
	30735857-005/505	CMOS Mem PWA

Basic Reserve Controller Director		
Slot No.	Part No.	Description
2	30750338-005/505	Hiway #2 PWA
3	30731817-006/506	Hiway #1
	51305408-100	UDHI
	51305701-100	UDHI2
4	30750218-011/511	Memory PWA RCD-CB
5	30731832-003/503	Processor PWA RCD-CB
	51191556-100	URCD

Extended Reserve Controller Director		
Slot No.	Part No.	Description
2	30750338-005/505	Hiway #2 PWA
3	30731817-006/506	Hiway #1
	51305408-100	UDHI
	51305701-100	UDHI2
4	30750218-007/507	Memory PWA RCD-EC
5	30731832-004/504	Processor PWA RCD-EC
	51191556-100	URCD

Multifunction Controller		
Slot No.	Part No.	Description
2	82408330-001	Hiway #2 PWA
3	4DP7APXDH111	Hiway #1
6	82408217-001	CPU PWA

Multifunction Reserve Controller Director		
Slot No.	Part No.	Description
3	82408330-001	Hiway #2 PWA
4	4DP7APXDH111	Hiway #1
7	82408217-001	CPU PWA

Hi-Level Process Interface Unit		
Slot No.	Part No.	Description
2	4DP7APXDH111	Cable Interface PWA
	4DP7APXDH122	Cable Interface PWA (SOE)
3	4DP7APXDH233	DMA Interface PWA
4		Not Used
5		Not Used
6	4DP7APXPM155	PROM/RAM PWA (R320B)
7	30731832-001/501	CPU PWA
	51306154-100	UPIU CPU PWA

Lo-Energy Process Interface Unit		
Slot No.	Part No.	Description
2	4DP7APXDH111	Cable Interface PWA
3	4DP7APXDH233	DMA Interface PWA (Extended) option
4		Not Used
5	4DP7APXRM111	RAM PWA (R300/ R310)
6	4DP7APXPM233	PROM/RAM PWA (R320)
7	30731832-001/501	CPU PWA
	51306154-100	UPIU CPU PWA

Lo-Level Process Interface Unit		
Slot No.	Part No.	Description
2	4DP7APXDH111	Cable Interface PWA
3	4DP7APXDH233	DMA Interface PWA
4		Not Used
5		Not Used
6	4DP7APXPM333	PROM/RAM PWA
7	30731832-001/501	CPU PWA
	51306154-100	UPIU CPU PWA

Data Hiway Port		
Slot No.	Part No.	Description
2	4DP7APXDH111	Data Hiway Interface PWA
3	4DP7APXDH244	Data Hiway Logic PWA
4	30751044-010/510	ROM PWA
5	30731832-004/504	Processor PWA
	51305734-100	UDHP-CPU PWA
6	30752588-001/501	CMOS RAM PWA
7	30752588-001/501	CMOS RAM PWA

Notes:

- ICE is certified to work with both VREG and UREG voltage regulators. Earlier versions of voltage regulators are not supported due to the high probability of voltage spikes, drop outs and noise.
- 80603673-001 - Backplane jumper required for HLPIU and LLPIU
- 80603735-001 - MFC address cable adapter to connect the address cable in UAC systems
- 82116116-005 - 0.5M cable to connect ICE to the main Data Hiway trunk cable (if required)

2.2 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	0.5
Impact	Acceleration (g)	0	1	5	25
	Impact time (msec)	0	30	30	30
Corrosive Environment		Conformal Coated			
EMI		EN55022 compliant (TBD)			
RFI		EN61000 compliant (TBD)			

2.3 Complied Regulatory Requirements

UL 61010-1

RoHS Directive

Note: ICE complies with all specifications for CE Marking although its approval is not required as a “grand fathered” product.

2.4 Dimension

Fully compatible form factor for all Hiway Common Card Files.