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IPBE3

IP Module
Bus Extender Board
(Type 3)

Document No. B-T-MU-IPBE3###-A-0-A2

FOREWORD

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CE

Please note: As a component part of another system, this product has no intrinsic function and is therefore not subject to the European Union CE EMC directive 89/336/EEC.

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1. 0 INTRODUCTION

1.1 Purpose

This is a reference manual for the SYSTRAN IP Module Bus Extender (IPBE3) board, part number BHAS-IPBE3.

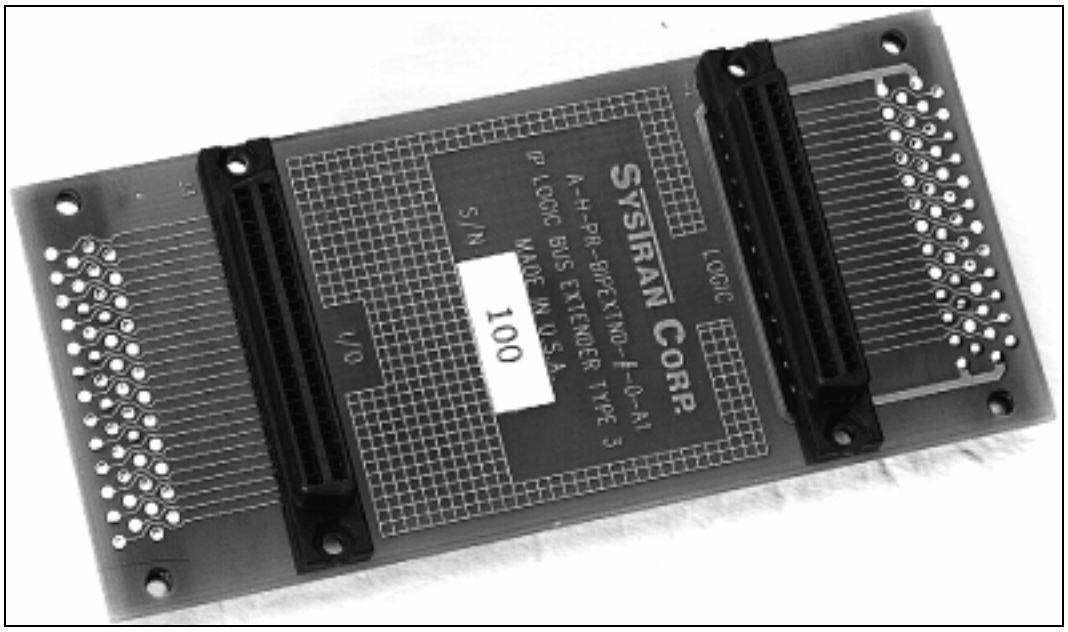


Figure 1-1 IPBE3 Board

1.2 Scope

This reference manual covers the physical description and usage of the IPBE3. The reader should have a systems level understanding of general computer processing, memory and hardware operation, and a systems understanding of the IP Module Logic Bus and I/O connector interfaces.

1.3 Overview

The SYSTRAN IP Module Extender Type 3 (IPBE3) board (part number BHAS-IPBE3) is the same size as a singlewide IP Module card with two extra connectors on the back of the board to extend the IP Module Logic Bus and I/O connectors. The IPBE3 can be used stand-alone with two 18- or 24-inch 50-pin ribbon cables, or in conjunction with other SYSTRAN IP Module products like the Logic Bus Extender board Type 1 and 2 Toolkits, to form a user-friendly IP Module system integration package.

The IPBE3 is used to extend an IP Module off any carrier board for testing and system integration activies, and is virtually transparent between the IP Module Carrier and IP Module card. The use of the IPBE3 requires one additional host system slot adjacent to the IP Module carrier, and no additional power from the backplane or motherboard. The

IPBE3 was designed in accordance with the *ANSI/VITA 4-1995 American National Standard for IP Modules,* but the IPBE3 itself is not an IP Module board.

1.4 Features

- Mechanical Interface: Singlewide IP Module
- Electrical Interface: Singlewide IP Module Extension
- IP Module Transfer Types: Monitors Memory, I/O, ID, and Interrupt

ACCESSORIES:

- IP Module Bus Extender Cable
  - 18-inch length (BHAS-IPBEC18)*
  - 24-inch length (BHAS-IPBEC24)*

* SYSTRAN part/order numbers

1.5 Related Publications

- *IP Module Logic Bus Extender Board User Manual* published by SYSTRAN Corp.
  (Doc number: B-T-MU-IPLBE)
- *IP Module Logic Bus Breakout Board User Manual* published by SYSTRAN Corp.
  (Doc number: B-T-MU-IPLBB)
- *IP Module Logic Bus Monitor Board User Manual* (for HP 1650/16500 series)
  (Doc number: B-T-MU-IPLBMHP)

1.6 Technical Support

Technical documentation provided with the product discusses the technology, its performance characteristics, and some typical applications. It includes tutorial material, with comprehensive support information, designed to answer any technical questions that might arise concerning the use of this product. SYSTRAN also publishes and distributes technical briefs and application notes that cover a wide assortment of topics. The applications selected are derived from real scenarios, but do not cover all possible circumstances.

Direct any programming questions, any concerns about the functional-fit of this product for your particular application, or any questions not answered satisfactorily by this document, to the factory at **(937)252-5601**, or send an E-Mail message to **support@systran.com** for additional assistance.

1.7 Reliability

SYSTRAN Corporate policy is to provide the highest-quality products in support of customer's needs. In addition to the physical product, the company provides documentation, sales and marketing support, hardware and software technical support, and timely product delivery. The SYSTRAN commitment to quality begins with product concept, and continues after receipt of the purchased product.

An integral part of SYSTRAN quality and reliability goals is customer feedback. Customers are encouraged to contact the factory with any questions or suggestions regarding unique quality requirements, or to obtain additional information about our programs. SYSTRAN's commitment to customers includes, but is not limited to:

- Professional and quick response to customer problems utilizing SYSTRAN's extensive resources.
- Incorporation of established procedures for product design, test, and production operations, with documented milestones. Procedures are constantly reviewed and improved, ensuring the highest possible quality.

SYSTRAN provides products and services that meet or exceed the best expectations of our customers.

- All products are tested using an Automatic Test Equipment system, with samplings for all product types taken through extended testing scenarios that include stress testing for voltage and temperature ranges beyond specifications.
- All products receive a predictive reliability rating based upon a calculated MTBF utilizing the MIL-HDBK-217F. Field failures are continuously logged and evaluated for potential failure modes and trends.
- Other environmental parameters are guaranteed by design, and not tested.
- Design reliability is ensured by methodology (top-down CAE design, VHDL, synthesis, extensive all-cases simulation, ALPHA build and test, and BETA testing if required) with full concurrent engineering practices throughout.

1.8 Ordering Process

To order SYSTRAN products or for additional product information, call (937) 252-5601 or send an e-mail message to **info@systran.com**.

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2. 0 HARDWARE INSTALLATION

2.1 Unpack the IPBE3

The IPBE3 shipping package will contain the following:

Table 2-1 IPBE3 Shipping Package Contents

Qty	Description
1	IPBE3 Printed Circuit Assembly

2.2 Visually Inspect the IPBE3

Examine the IPBE3 to determine if any damage occurred during shipping.

2.3 IPBE3 Installation



NOTE: Although the IPBE3 is not an ESD sensitive product, acceptable ESD practices should be used during the assembly and installation to protect the IP boards and carrier boards.

The IPBE3 installation requires the following tools:

Table 2-2 IPBE3 Installation Tools

	Qty	Description
	1	ESD Static Control Kit/Ground Strap/Etc.
Optional	1	Standard Flat Head Screwdriver

Figure 2-1 shows the layout of the IPBE3.

Figure 2-2 is a diagram of how the Type 1 IPBE3 is installed on an IP Module carrier.

Table 2-3 on page 2-5 shows the pin assignments for the IP Logic Bus connector. The signals on the left side of the connector are of the original IP Module signal nomenclature, and the signals on the right are those used by SYSTRAN Corp. Refer to the IP Carrier board user's manual for more information.

Refering to the appropriate figures, perform the following steps.

1. Turn off all power to the host system.
2. Remove the target IP Module carrier and move it to the ESD controlled area where the installation of the IPBE3 can be made.
3. Remove the IPBE3 from the shipping package and place it on the ESD bench.
4. Install the two ribbon cables on the IP Module to be extended and then carefully install the other end of the cables to the IPBE3's connectors, making sure the logic bus and the I/O connectors line up.
5. Install the IPBE3, with the IP Module board connected to it, onto the carrier board by applying adequate and equal pressure to the IPBE3 board at both ends.
6. Lay the extended IP Module on an adequate ESD work area.

This completes the installation of the IPBE3 to the carrier board.

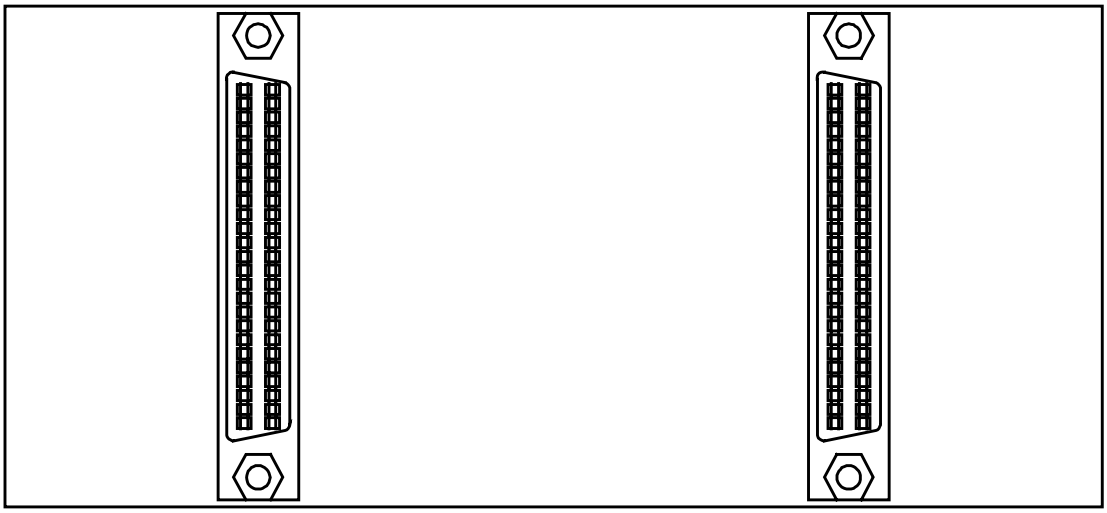


Figure 2-1 IPBE3 Connection

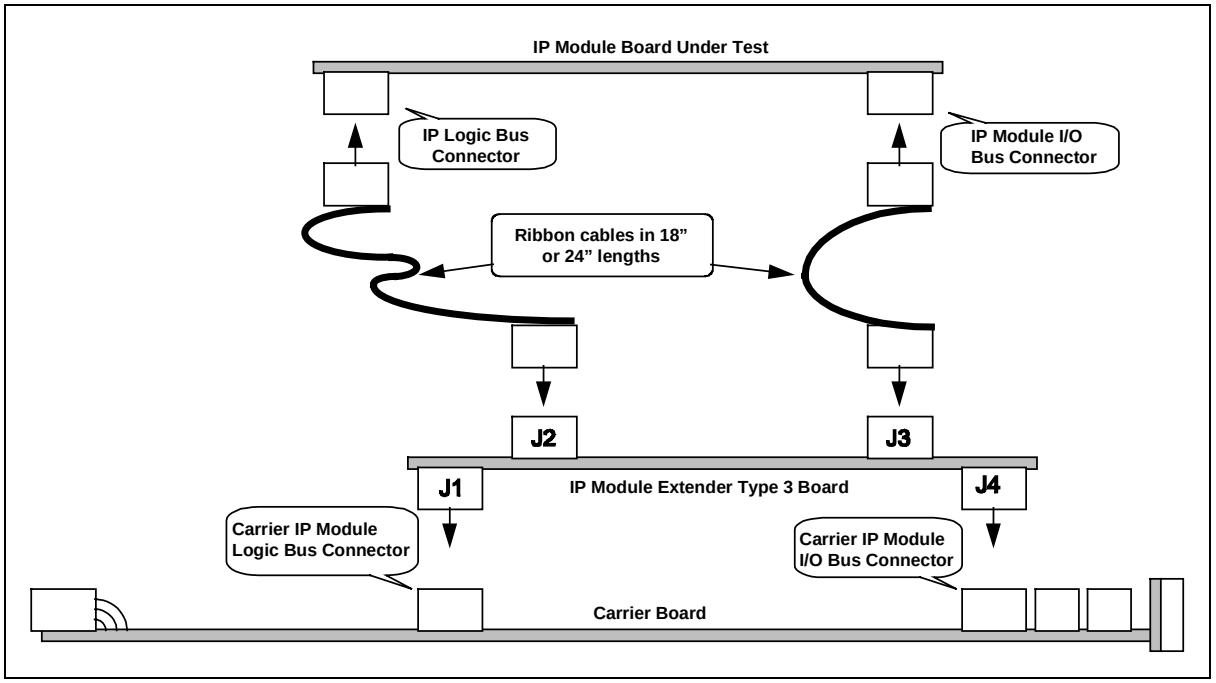


Figure 2-2 IPBE3 Assembly Diagram on an IP Carrier Board

Table 2-3 IP Module Logic Bus Pin Assignments

Original IP Module Signals Names	IP Module Logic Bus Pin #	SYSTRAN Signal Names
GND	50	GND
reserved	49	RESERVED1
Ack*	48	N_ACK
A6	47	IPA6
Strobe*	46	N_STROBE
A5	45	IPA5
IntReq1*	44	N_INTREQ1
A4	43	IPA4
IntReq0*	42	N_INTREQ0
A3	41	IPA3
Error*	40	N_ERROR
A2	39	IPA2
DMAEnd*	38	N_DMAEND
A1	37	IPA1
reserved	36	RESERVED2
IOSel*	35	N_IOSEL
DMAck0*	34	N_DMACK0
IntSel*	33	N_INTSEL
DMAReq1*	32	N_DMAREQ1
MemSel*	31	N_MEMSEL
DMAReq0*	30	N_DMAREQ0
IDSel*	29	N_IDSEL
R/W*	28	IPR_N_W
+5V	27	+5VDC
GND	26	GND
GND	25	GND
+5V	24	+5VDC
+12V	23	+12VDC
-12V	22	-12VDC
BS1*	21	N_BS1
BS0*	20	N_BS0
D15	19	IPD15
D14	18	IPD14
D13	17	IPD13
D12	16	IPD12
D11	15	IPD11
D10	14	IPD10
D9	13	IPD9
D8	12	IPD8
D7	11	IPD7
D6	10	IPD6
D5	9	IPD5
D4	8	IPD4
D3	7	IPD3
D2	6	IPD2
D2	5	IPD1
D0	4	IPD0
Reset*	3	N_RESET
CLK	2	ICLK
GND	1	GND

3. 0 USING THE IPBE3

3.1 Purpose

This section describes the use of the IPBE3 in a debugging/troubleshooting or systems-integration environment.

3.2 IPBE3 Usage

IP Module manufacturers or companies using IP Modules in their systems can use the IPBE3 to debug/troubleshoot an IP Module under test by allowing easy access to the component side of the IP Module.

3.3 IP Module Product Development and Upgrades

For companies developing or upgrading new IP Module products, using the IPBE3 will significantly shorten the design-to-production cycle. The IPBE3 gives IP Module users the ability to quickly and easily test IP Module prototyping through alpha and beta board testing.

3.4 IP Module Systems Integration

For systems-integration companies using IP Modules, the IPBE3 provides a simple method of isolating a failed IP Module board in the system.

The IPBE3 schematic is included in Figure 3-1.

3.5 IPBE3 IP Module Signal Specifications

The IPBE3 is virtually transparent between the IP Module and carrier, thus having negligible affects on the IP Module Logic Bus signals. This makes the IPBE3 a very effective and non-intrusive troubleshooting aid in IP Module integration.

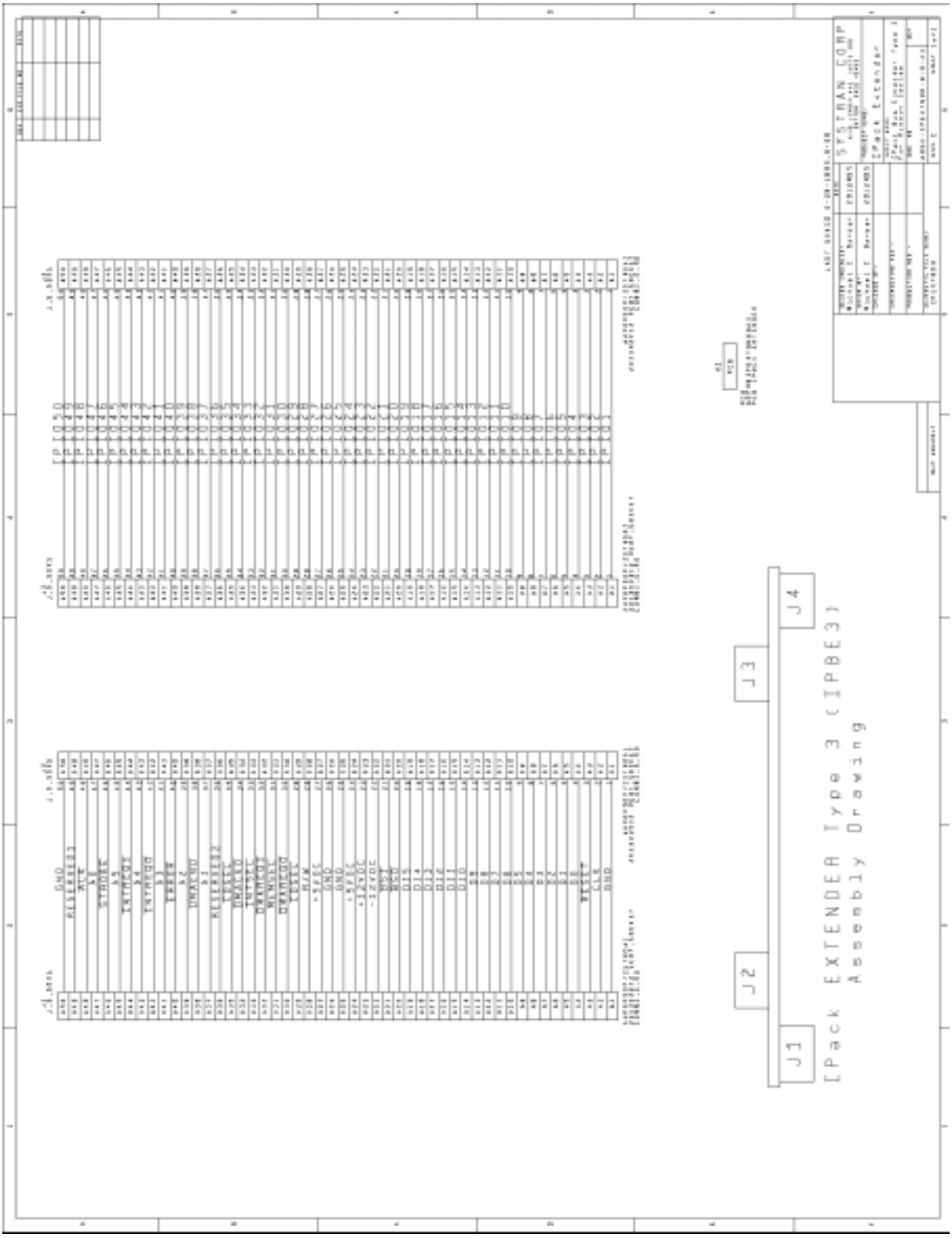


Figure 3-1 IPBE3 Schematic

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