GPI-6

GENERAL PURPOSE INPUTS INTERFACE

INSTRUCTION MANUAL

GPI-6 General Purpose Inputs Interface Instruction Manual
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Vitec Group Communications LLC
850 Marina Village Parkway
Alameda, CA 94501
U.S.A.

Vitec Group Communications Ltd
7400 Beach Drive
Cambridge Research Park
Cambrideshire
United Kingdom
CB25 9TP

Vitec Group Communications
Room 1806, Hua Bin Building
No. 8 Yong An Dong Li
Jian Guo Men Wai Ave
Chao Yang District
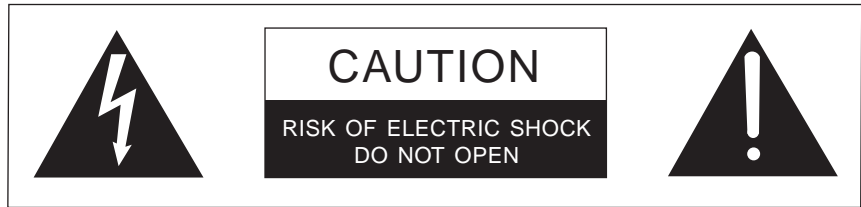Beijing, P.R. China 100022

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

Please read and follow these instructions before operating a GPI-6 general purpose inputs interface. Keep these instructions for future reference.

Please read and follow these instructions before operating a GPI-6 general purpose inputs interface.

(1) **WARNING**: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

(2) Do not use the apparatus near water.

(3) Clean only with a dry cloth.

(4) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Install the GPI-6 interface according to the directions in the Installation Chapter of this manual.

(5) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not place naked flame sources such as candles on or near the matrix.

(6) Do not defeat the safety purpose of the polarized plug or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

(7) Protect power leads from being walked on or pinched particularly at plugs, at convenience receptacles, and at the point where they exit from the apparatus.

Note: A "convenience receptacle" is an extra AC power outlet located on the back of a piece of equipment, intended to allow you to power other equipment.

(8) Only use attachments/accessories specified by the manufacturer.

(9) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

(10) Unplug the apparatus during lightning storms or when unused for long periods of time.

(11) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Please familiarize yourself with the safety symbols in Figure 1. When you see these symbols on a GPI-6 general purpose inputs interface module, they warn you of the potential danger of electric shock if the module is used improperly. They also refer you to important operating and maintenance instructions in the manual.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

This symbol alerts you to the presence of uninsulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.

This symbol informs you that important operating and maintenance instructions are included in the literature accompanying this product.

Figure 1: Safety Symbols

OPERATION

INTRODUCTION

This chapter describes the GPI-6 general-purpose inputs interface. System operators can use this chapter once the Eclipse system has been correctly installed and the input controls have been assigned with the Eclipse Configuration System programming software.

DESCRIPTION

The GPI-6 provides six general-purpose logic inputs into the matrix, allowing external sources to trigger routing changes and other events through the matrix system. Like the RLY-6, this interface is also connected through the separate RJ-45 accessory data connector on the matrix frame.

The GPI-6 provides six general-purpose logic inputs.

Multiple GPI-6 interfaces can be daisy-chained to provide connection of up to 60 inputs to the matrix. RLY-6 and GPI-6 modules can be mixed together up to the total limit of 60 items. Five RLY-6 and five GPI-6 modules would provide 30 relays and 30 inputs for a total of 60 ins and outs.

For Eclipse systems if both GPI-6 and RLY-6 interfaces are used the GPI-6 interfaces are required to be placed first in the daisy chain. This restriction does not apply to Matrix Plus 3 systems.

All of the RLY-6 and GPI-6 interfaces in the system are daisy-chained from the GPI/RLY connection. The matrix system will automatically identify both the type and "addresses" of every relay output or logic input.

- *You can "daisy-chain" GPI-6 and RLY-6 units to provide more inputs and outputs to the matrix.*

The GPI-6 provides the following functions:

1. Senses six independent sets of logic inputs which can activate functions in the matrix frame as defined by the configuration program.
2. DC isolation between the external device(s) and the system.
3. An LED indicator for each input that lights when the input is active.

Each GPI-6 interface input will sense a voltage between 5 to 45 volts of either polarity. Over this voltage range the maximum signal current drawn by the card will be 7 mA.

The LED indicators for each input actually indicate what the matrix system has read from the inputs so that these indicators show that the interface is really working.

A TEST pushbutton switch is provided for each input to allow local activation of the software function associated with the input.

The front panel of the GPI-6 has six green LEDs to indicate the presence of an input signal on a given channel. A seventh yellow LED indicates that the module is communicating with the matrix. There is also a TEST pushbutton switch for each input to allow local activation of the software function in the matrix that the input is controlling.

OPERATION

Once the GPI-6 is installed and configured there are no controls for day-to-day operation. Activation of each individual input is indicated by LEDs.

The TEST switches for each input can be used to test the software function associated with the input.

The yellow LED should be 'on' all of the time indicating that the frame is communicating with the module.

CONFIGURATION

You configure the inputs with the Eclipse Configuration System (ECS) programming software. Refer to the *Eclipse Configuration System Manual* for more information.

2 INSTALLATION

INTRODUCTION

This chapter describes the installation of the GPI-6 general purpose inputs interface and wiring to the external devices. The GPI-6 occupies one slot in an interface frame. Connections are made to the matrix and other modules via an 8-pin RJ-45 connector, and to the external devices via two DB-9M connectors. There are no adjustment controls for the GPI-6.

INSTALLATION

To install the GPI-6 interface module in the IMF-3 or IMF-102 interface frame, select a slot to install the interface in.

1. Remove the blank plates from the front and rear of the slot in which an interface module will be installed.
2. Install the interface module in the appropriate slot. Advance the front half the interface module along the guides in the front part of the slot until it connects to the midplane connector. Advance the rear half of the interface module along the guides in the rear part of the slot, until it connects with the midplane connector.
3. Install the provided screws on the front and rear panels of the interface module you have just installed, to secure the interface in place in the frame.

The rest of the installation consists of connecting the GPI-6 unit to the matrix and to either the control input or to the 'daisy-chain' output of another RLY-6 or GPI-6 unit.

WIRING

The following sections describe connecting a GPI-6 module to the matrix and external devices.

TO MATRIX

To connect the GPI-6 to the matrix, plug one end of a RJ-45 cable into the GPI-RLY INTERFACE connector on the back of the matrix. Plug the other end into the top RJ-45 (CH. A MATRIX) connector for the GPI-6.

To connect an additional GPI-6 interface, plug one end of a short RJ-45 cable into the lower RJ-45 (CH. B MATRIX) for the first GPI-6. Then, plug the other end into the top RJ-45 (CH. A MATRIX) connector additional GPI-6. Additional GPI-6 interfaces are added in the same way, using "daisy-chain" wiring. If there are multiple GPI-6 interfaces, the inputs in the first interface are numbered 1 to 6 for GPI 1; in the

second interface 1 to 6 for GPI 2, etc. GPI interface 0 is the internal Matrix GPI interface.

For Eclipse systems if both GPI-6 and RLY-6 interfaces are used the GPI-6 interfaces are required to be placed first in the daisy chain. This restriction does not apply to Matrix Plus 3 systems where interfaces can be mixed in this 'daisy-chained' scheme.

The maximum combined length of all the RJ-45 cables should not exceed 20 feet (6 meters). Figure 2-1 shows an example of "daisy-chain" wiring.
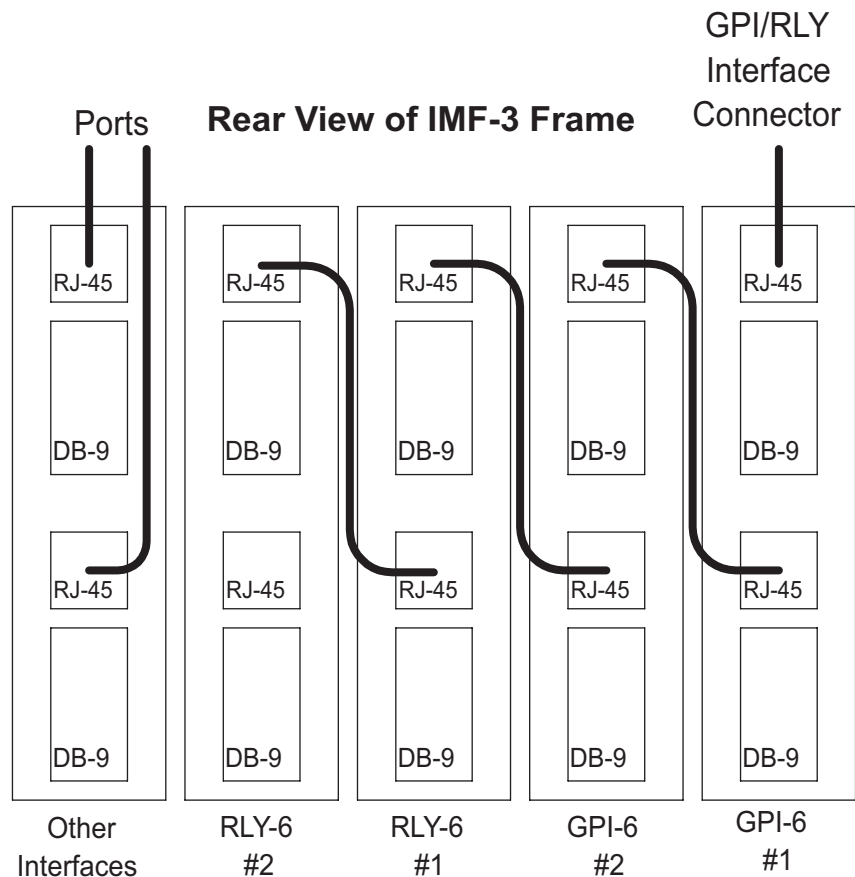

Figure 2-1: "Daisy-Chaining" GPI-6 and RLY-6 Interfaces

TO EXTERNAL DEVICE

To connect external devices to the GPI-6 interface, use the two DB-9M connectors on the rear cable assembly panel for the interface. Figure 2-2 shows the pin assignment of these connectors as viewed from the frame side of the connector.

If a DB-9F is plugged into the connector labeled CH. A I/O, inputs 1-3 are available on that connector. The connector labeled CH.A I/O has

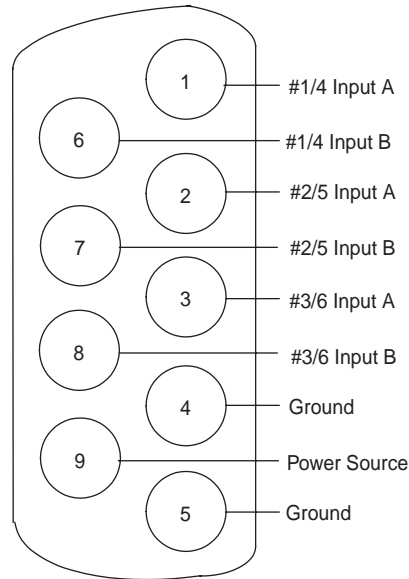inputs 4-6. In Figure 2-2 the labels on the pins apply to either connector.

Figure 2-2: GPI-6 Interface DB-9M Connector Pinout

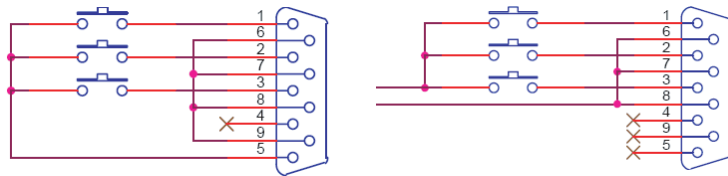*Figure 2-3: GPI-6 Application Examples*

The two illustrations in Figure 2-3 show how to connect switches or contacts using the power source provided by the GPI-6 module or powering switches from external sources. Each input can be wired to be isolated from each other as a further variation.

CONFIGURATION

To define an input function, use the Configuration Program, as described in its manual.

3 SPECIFICATIONS

Input

Type	Opto-Isolated current limited
Quantity	6
Voltage Range	5 - 45 volts DC
Input Current	4 - 7 mA
DC Isolation	10 mega-ohms

Module Power Supply Requirements

Voltage Required	8 – 10 volts DC
Current Required	<20 mA

Connectors

Input Connections	2 ea. DB-9M
Matrix Connection	2 ea. RJ-45 ea.

Indicators and Controls

LED Indicators	6 Green (1 each per input)
	1 Yellow (Frame Data)
Pushbutton Switches	6 (1 Test Pushbutton per input)

Wiring Requirements

Maximum line lengths for connection to Matrix Frame
Matrix Frame to Interface Frame shall be less than 15 feet (5 meters)
Maximum line length between interface frame inputs 6 inches (15 cm)

Operating Environment

Temperature	0 and 70° C (32 -150° F)

Package Dimensions

Height	5 1/16" (129 mm)
Width	1 3/8" (35 mm)
Depth	9 5/32" (233 mm)
Weight	.35 LBS (.15 kg)

Notice About Specifications

While Vitec Group Communications makes every attempt to maintain the accuracy of the information contained in its product manuals, that information is subject to change without notice. Performance specifications included in this manual are design-center specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary.

LIMITED WARRANTY

Vitec Group Communications (VGC) warrants that at the time of purchase, the equipment supplied complies with any specification in the order confirmation when used under normal conditions, and is free from defects in workmanship and materials during the warranty period.

During the warranty period VGC, or any service company authorized by VGC, will in a commercially reasonable time remedy defects in materials, design, and workmanship free of charge by repairing, or should VGC in its discretion deem it necessary, replacing the product in accordance with this limited warranty. In no event will VGC be responsible for incidental, consequential, or special loss or damage, however caused.

WARRANTY PERIOD

Return Material Authorization (RMA) numbers are required for all returns.

Both warranty and non-warranty repairs are available.

The product may consist of several parts, each covered by a different warranty period. The warranty periods are:

• Cables, accessories, components, and consumable items have a limited warranty of 90 days.

• Headsets, handsets, microphones, and spare parts have a limited warranty of one year.

• UHF wireless IFB products have a limited warranty of one year.

• UHF wireless intercom systems have a limited warranty of three years.

• All other Clear-Com and Drake brand systems and products, including beltpacks, have a limited warranty of two years.

The warranty starts at the time of the product's original purchase. The warranty start date for contracts which include installation and commissioning will commence from the earlier of date of the Site Acceptance Test or three months from purchase.

TECHNICAL SUPPORT

To ensure complete and timely support to its customers, VGC's User Support Center is staffed by qualified technical personnel. Telephone and email technical support is offered worldwide by the User Support Center.

The User Support Center is available to VGC's customers during the full course of their warranty period.

Instructions for reaching VGC's User Support Centers are given below.

Telephone for Europe, Middle East and Africa: +49 40 6688 4040 or +44 1223 815000

Telephone for the Americas and Asia: +1 510 337 6600

Email: vitec.support@AVC.de

Once the standard warranty period has expired, the User Support Center will continue to provide telephone support if you have purchased an Extended Warranty.

For latest contact information please refer to the Service and Support section at www.clearcom.com.

WARRANTY REPAIRS AND RETURNS

Before returning equipment for repair, contact a User Support Center to obtain a Return Material Authorization (RMA). VGC representatives will give you instructions and addresses for returning your equipment. You must ship the equipment at your expense, and the support center will return the equipment at VGC's expense.

For out-of-box failures, use the following contact information:

Europe, Middle East and Africa

Tel: +44 1223 815000 Email: customerservicesEMEA@vitecgroup.com

North America, Canada, Mexico, Caribbean & US Military

Tel: +1 510 337 6600 Email: customerservicesUS@vitecgroup.com

Asia Pacific & South America

Tel: +1 510 337 6600 Email: customerservicesAPAC@vitecgroup.com

VGC has the right to inspect the equipment and/or installation or relevant packaging.

For latest contact information please refer to the Service and Support section at www.clearcom.com.

NON-WARRANTY REPAIRS AND RETURNS

For items not under warranty, you must obtain an RMA by contacting the User Support Center. VGC representatives will give you instructions and addresses for returning your equipment.

You must pay all charges to have the equipment shipped to the support center and returned to you, in addition to the costs of the repair.

EXTENDED WARRANTY

You can purchase an extended warranty at the time of purchase or at any time during the first two years of ownership of the product. The purchase of an extended warranty extends to five years the warranty of any product offered with a standard two-year warranty. The total warranty period will not extend beyond five years.

Note: VGC does not offer warranty extensions on UHF wireless intercom systems, or on any product with a 1-year or 90-day warranty.

LIABILITY

THE FOREGOING WARRANTY IS VGC'S SOLE AND EXCLUSIVE WARRANTY. THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OTHER REQUIRED IMPLIED WARRANTY SHALL EXPIRE AT THE END OF THE WARRANTY PERIOD. THERE ARE NO OTHER WARRANTIES (INCLUDING WITHOUT LIMITATION WARRANTIES FOR CONSUMABLES AND OTHER SUPPLIES) OF ANY NATURE WHATSOEVER, WHETHER ARISING IN CONTRACT, TORT, NEGLIGENCE OF ANY DEGREE, STRICT LIABILITY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS OR ANY PART THEREOF DELIVERED HEREUNDER, OR FOR ANY DAMAGES AND/OR LOSSES (INCLUDING LOSS OF USE, REVENUE, AND/OR PROFITS). SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR THE LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN ANY EVENT, TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, VGC'S LIABILITY TO CUSTOMER HEREUNDER SHALL NOT UNDER ANY CIRCUMSTANCES EXCEED THE COST OF REPAIRING OR REPLACING ANY PART(S) FOUND TO BE DEFECTIVE WITHIN THE WARRANTY PERIOD AS AFORESAID.

This warranty does not cover any damage to a product resulting from cause other than part defect and malfunction. The VGC warranty does not cover any defect, malfunction, or failure caused beyond the control of VGC, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the manual, defective or improperly associated equipment, attempts at modification and repair not approved by VGC, and shipping damage. Products with their serial numbers removed or defaced are not covered by this warranty.

This warranty does not include defects arising from installation (when not performed by VGC), lightning, power outages and fluctuations, air conditioning failure, improper integration with non-approved components, defects or failures of customer furnished components resulting in damage to VGC provided product.

This limited warranty is not transferable and cannot be enforced by anyone other than the original consumer purchaser.

This warranty gives you specific legal rights and you may have other rights which vary from country to country.