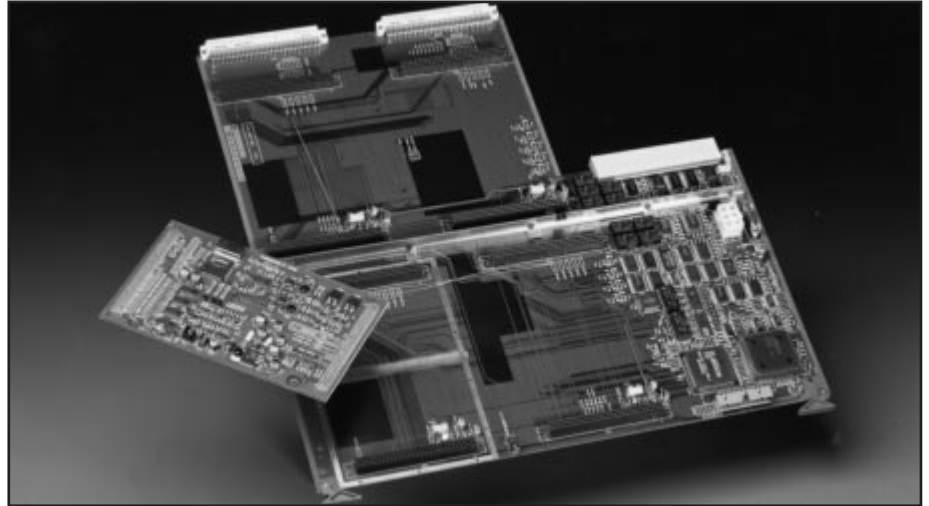




4200 series GPIO Card

A card designed to interface dedicated and custom functionality to the test system



- Allows custom circuitry to be interfaced with 4200 series
- Interface rack mounted
- Eight 50 Ω lines from interface to custom circuitry
- Runtime control

Introduction

In the Test environment, there is often the requirement to use special custom circuitry to achieve success in testing a particular application.

The General Purpose Input/Output (GPIO) card provides the facility to add any custom circuitry into the 4200 series tester, allowing greater scope for test capabilities.

The card is located in the standard testpoint slots in the interface rack. The card includes backplane interface circuitry as standard and a prototyping area with connectors to allow for the addition of up to four plug-in daughter boards.

Eight 50 Ω high quality connections are provided from the daughter board connectors to the interface. This gives the facility to provide high quality signals to the unit under test.

The GPIO card also supports the Generator/Detector card (QMUX), used with the Q-TEST II facility. This card is of single-euro size and can be plugged onto the GPIO card.

Daughter Board Connections

It is possible to include up to either four single-euro size daughter boards with limited functionality or two double-euro size daughter boards with full functionality, including signals provided for runtime

control. The positions on the card for these daughter boards can be seen in Fig 1.

The single-euro size boards will have 8-bit data available with 6 address bits. The double-euro size boards will have 16 bit data available and 19 address bits allowing a 1 MByte address space. Signals for runtime control are provided for the double-euro size.

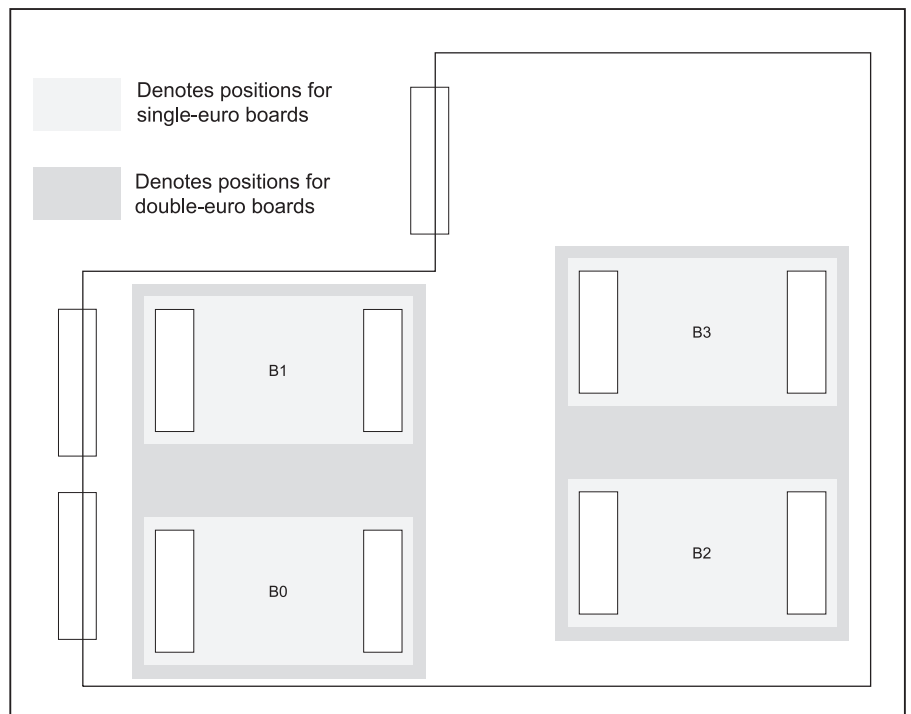
Eight 96 way sockets are provided with

signals connected to allow read/write access to the daughter boards. Spare connections are also available for user signals.

These connectors also include a JTAG Boundary Scan port and a five-wire port used for the programming of ISP devices.

Q-TEST II Support

The new Q-TEST II facility requires a generator/detector card (the QMUX card),



4200 series

to allow for the interfacing to Q-TEST II probes. The QMUX card can be used standalone in a test fixture, or it can be plugged into the GPIO card.

The obvious advantage of using the QMUX card on the GPIO card is that it becomes an integral part of the test system and hence can be used for all fixtures without the need for extra circuitry in each test fixture (other than the probes themselves). Used standalone, the QMUX card is fitted into each individual fixture.

When the QMUX card is used on the GPIO card, it supports a maximum of 10 Q-TEST II probes as oppose to 16 when used standalone. However, since the QMUX card is of single euro-card size it is possible to fit 4 QMUX cards per GPIO card. This then allows a maximum of 40 Q-TEST II probes per GPIO card.

Software Control

To provide support for the GPIO card within the MTL test environment, new software modules have been included. These modules provide all the control signals necessary to control the GPIO card and any daughter board modules fitted.

The new modules provide all the controls needed for read/write activities and also includes facilities to enable any runtime activity which is available if the double-euro size cards are used.

New software modules have been included into MTL to provide control for the custom circuitry. This provides all control for the read/write activities required to the plug-in daughter boards.

Specification

GPIO Board

Power Consumption

	Typ	Max
+24 V	10 mA	20 mA
+5 V	150 mA	1 A
-15 V	10 mA	20 mA

Power Rating (Max. Current)

+24 V	5 A
+5 V	10 A
-15 V	5 A

NB. +5 V rail separately fused at 3.5 V to each daughter board.

Electromagnetic Compatibility

The General Purpose Input/Output card complies with the following:

EMC:	EN55011:1991 Class A
	EN50082-1:1992
	EN60555-2:1987

and therefore conforms with the protection requirements of Council Directive 89/336/EEC relating to electromagnetic compatibility.

Environmental Conditions

The following apply to the General Purpose Input/Output card:

Operating:

Temperature	10 to 35°C
Humidity	25% to 75% rh, non-condensing at 30°C

Storage and Transport:

Temperature	-40 to +70°C
Humidity	up to 93% rh, non-condensing at 36°C max



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