Universal Switching Corporation

CE

Specification Sheet G2D70-001

Solid-State High Performance >400Mbps
Differential ECL Switching Arrays
Series G2D70

September 2006

General

This fully digital (ECL) switching module is offered for applications requiring ultra-high performance, high density signal routing and distribution for digital ECL signals up to 400Mbps. Modules can be factory configured for a maximum of 64 inputs and 64 outputs. The modules provide a full fanout (broadcast) capacity to receive differential ECL inputs and distribute these to any one, many, or all of the differential ECL outputs. Standard ECL levels apply with a 50 ohm I/O environment.

The switching array is of "fixed" size and may not be expanded in the field without additional external equipment. This provides the most cost effective packaging solution. It is available with a varied number of inputs and outputs. Each I/O has a pair of either high performance coaxial SMB or SMA connectors for each input or output channel. Each coaxial connector provides half of the differential data signal. If a "Triax" connector version is desired, the G2D73 modules have this capability.

The wide bandwidth solid-state ECL switch core design provides for high reliability and long life. For "clock and data" applications, it is recommended that two modules be used. One module dedicated to clock signals while the other for the data signals. Doing so provides the best clock/data skew performance and is more efficient switching configuration.

Each input channel is internally terminated in a resistive 50 ohm termination to -2V. Optional outputs circuits are available to suit the application to provide the best possible routing scheme and a minimum of signal reflections. Output circuits are defined by the suffix designation.

The suffix of the model number specifies some unique features or additional performance specifications. This module is designed to be installed into any G2 type mainframe controller. It requires that the mainframe be equipped with the -200 or -D200 type power supply configuration.

Applications

- Airborne surveillance systems
- Digital video routing and distribution
- Flight simulators or situation rooms
- Telemetry and Ground Stations
- Training, conference or security centers

Features

- Compact solid-state switching elements
- High performance buffered configuration
- Wide digital bandwidth
- True non-blocking configuration with full fanout
- Standard ECL signal levels with 50 ohm impedance
- Rugged aluminum shielded enclosure
- Hot-swap module technology
- Embedded control and status CPU
- High reliability and long life

Model G2D70-1608-2xA
8 in, 8 out with SMA connectors

Model G2D70-4824-2xB
24in, 24 out with SMB connectors

Model G2D70-9648-2xB
48in, 48 out with SMB connectors

G2

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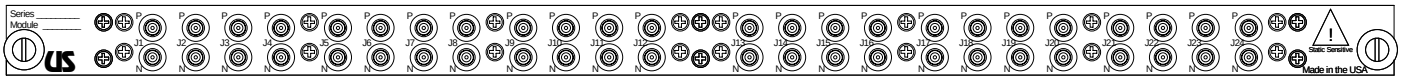
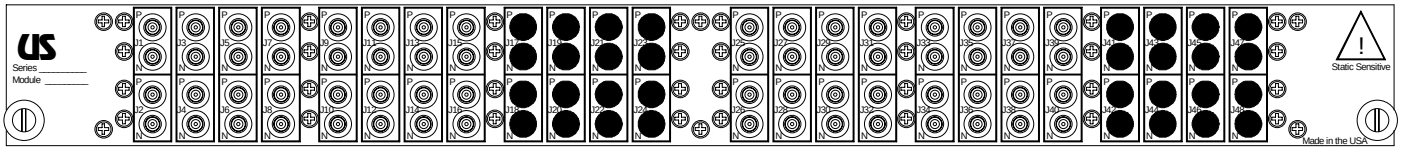
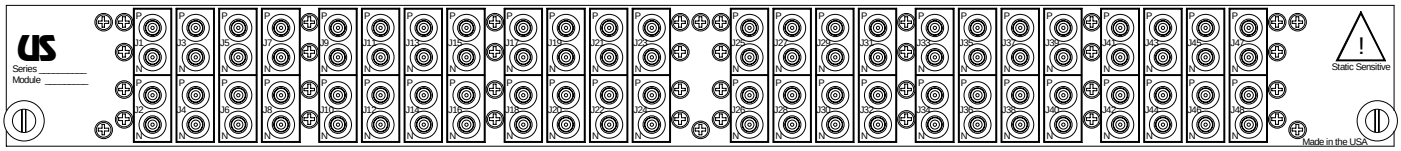
8x16 16x8



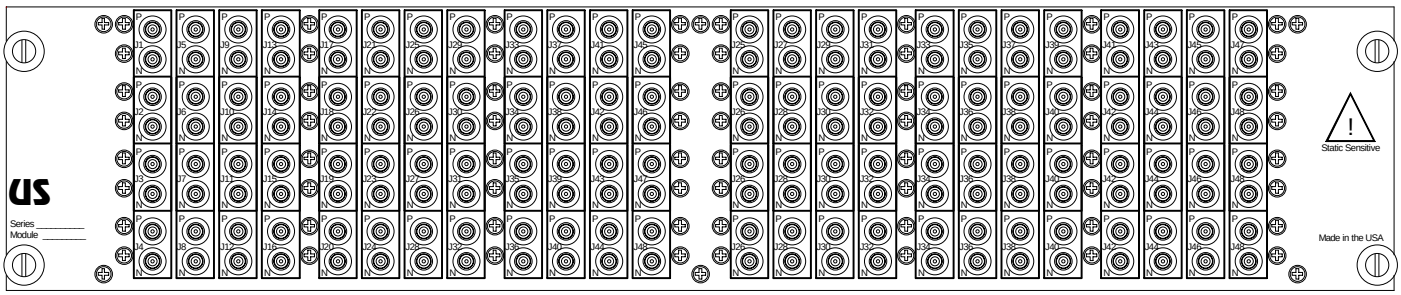
16x16



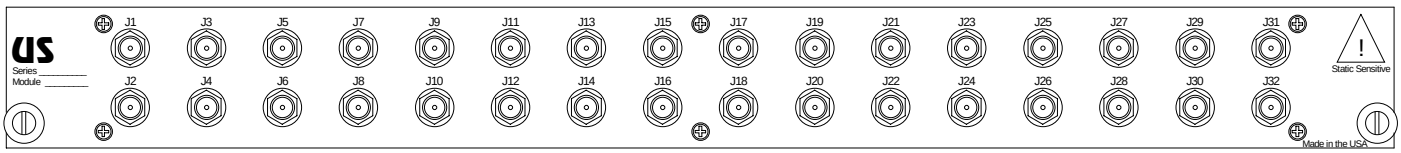
8x40 16x32 24x24 32x16 40x8



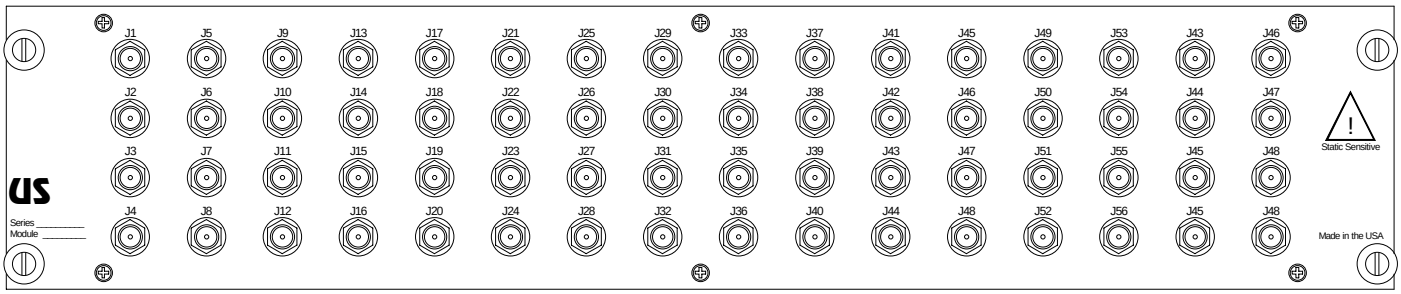
16x80* 32x64* 48x48 64x32* 80x16* * Special Order



8x8



8x24 16x16 24x8



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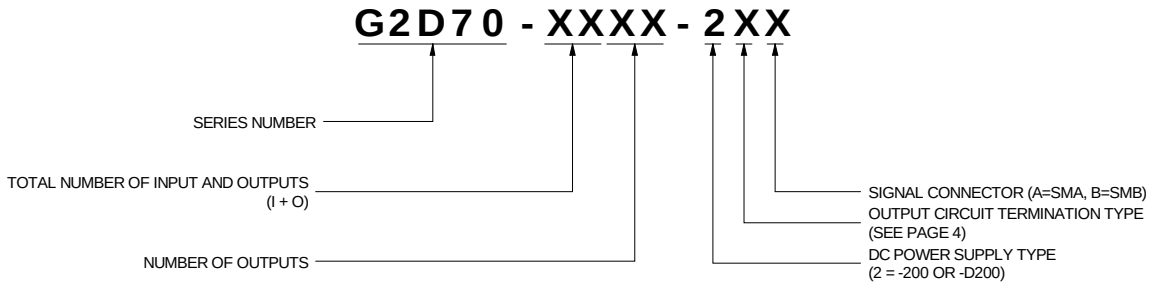
Configurations

Switching array size is specified by the middle four digits. The first two digits of these four specifies the total number of I/O connectors (in+out), while the second two specifies the number of outputs. For any special configurations, other than those listed bellow, please consult the factory. This is a merely a general list of standard sizes (64x64 not shown - contact factory).



SMB Connectors

Model Number	Array Size	Slot Height
G2D70-1608-2xB	8 in x 8 out	2
G2D70-2416-2xB	8 in x 16 out	2
G2D70-3224-2xB	8 in x 24 out	2
G2D70-4032-2xB	8 in x 32 out	2
G2D70-4840-2xB	8 in x 40 out	2
G2D70-5648-2xB	8 in x 48 out	3
G2D70-2408-2xB	16 in x 8 out	2
G2D70-3216-2xB	16 in x 16 out	2
G2D70-4024-2xB	16 in x 24 out	2
G2D70-4832-2xB	16 in x 32 out	2
G2D70-5640-2xB	16 in x 40 out	3
G2D70-6448-2xB	16 in x 48 out	3
G2D70-3208-2xB	24 in x 8 out	2
G2D70-4016-2xB	24 in x 16 out	2
G2D70-4824-2xB	24 in x 24 out	2
G2D70-5632-2xB	24 in x 32 out	3
G2D70-6440-2xB	24 in x 40 out	3
G2D70-7248-2xB	24 in x 48 out	3
G2D70-4008-2xB	32 in x 8 out	2
G2D70-4816-2xB	32 in x 16 out	2
G2D70-5624-2xB	32 in x 24 out	3
G2D70-6432-2xB	32 in x 32 out	3
G2D70-7240-2xB	32 in x 40 out	3
G2D70-8048-2xB	32 in x 48 out	4
G2D70-4808-2xB	40 in x 8 out	2
G2D70-5616-2xB	40 in x 16 out	3
G2D70-6424-2xB	40 in x 24 out	3
G2D70-7232-2xB	40 in x 32 out	3
G2D70-8040-2xB	40 in x 40 out	4
G2D70-8848-2xB	40 in x 48 out	4
G2D70-5608-2xB	48 in x 8 out	3
G2D70-6416-2xB	48 in x 16 out	3
G2D70-7224-2xB	48 in x 24 out	3
G2D70-8032-2xB	48 in x 32 out	4
G2D70-8840-2xB	48 in x 40 out	4
G2D70-9648-2xB	48 in x 48 out	4

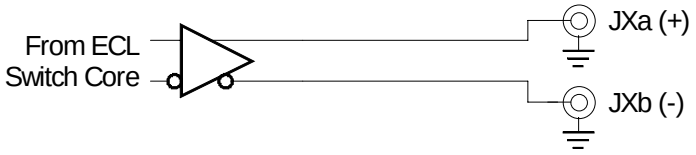
SMA Connectors

Model Number	Array Size	Slot Height
G2D70-1608-2xA	8 in x 8 out	2
G2D70-2416-2xA	8 in x 16 out	3
G2D70-3224-2xA	8 in x 24 out	4
G2D70-4032-2xA	8 in x 32 out	5
G2D70-4840-2xA	8 in x 40 out	6
G2D70-5648-2xA	8 in x 48 out	7
G2D70-2408-2xA	16 in x 8 out	3
G2D70-3216-2xA	16 in x 16 out	4
G2D70-4024-2xA	16 in x 24 out	5
G2D70-4832-2xA	16 in x 32 out	6
G2D70-5640-2xA	16 in x 40 out	7
G2D70-6448-2xA	16 in x 48 out	8
G2D70-3208-2xA	24 in x 8 out	4
G2D70-4016-2xA	24 in x 16 out	5
G2D70-4824-2xA	24 in x 24 out	6
G2D70-5632-2xA	24 in x 32 out	7
G2D70-6440-2xA	24 in x 40 out	8
G2D70-7248-2xA	24 in x 48 out	9
G2D70-4008-2xA	32 in x 8 out	5
G2D70-4816-2xA	32 in x 16 out	6
G2D70-5624-2xA	32 in x 24 out	7
G2D70-6432-2xA	32 in x 32 out	8
G2D70-7240-2xA	32 in x 40 out	9
G2D70-8048-2xA	32 in x 48 out	10
G2D70-4808-2xA	40 in x 8 out	6
G2D70-5616-2xA	40 in x 16 out	7
G2D70-6424-2xA	40 in x 24 out	8
G2D70-7232-2xA	40 in x 32 out	9
G2D70-8040-2xA	40 in x 40 out	10
G2D70-8848-2xA	40 in x 48 out	11
G2D70-5608-2xA	48 in x 8 out	7
G2D70-6416-2xA	48 in x 16 out	8
G2D70-7224-2xA	48 in x 24 out	9
G2D70-8032-2xA	48 in x 32 out	10
G2D70-8840-2xA	48 in x 40 out	11
G2D70-9648-2xA	48 in x 48 out	12

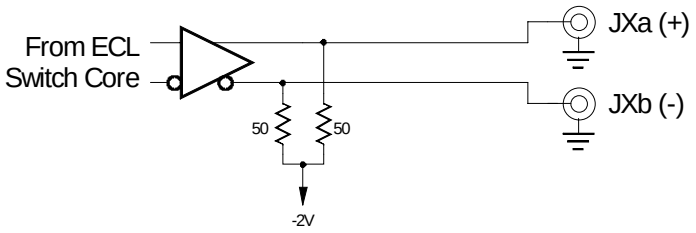
Output Termination Configurations

Below are three different standard output termination configurations. Of the three, the Type 5 is most popular. The "type number" is used in the suffix definition of the model number. See page 3. If you need something special, please contact the factory.

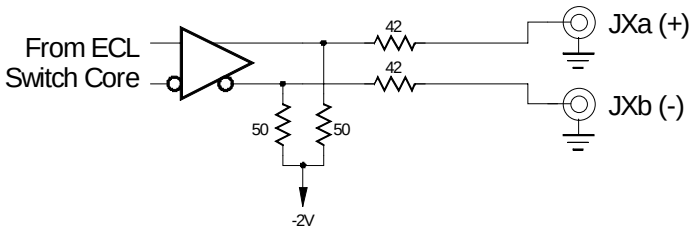
TYPE "0" OUTPUT
NO SOURCE TERMINATION



TYPE "5" OUTPUT
SOURCE TERMINATED



TYPE "1" OUTPUT
SERIES SOURCE TERMINATED



Signal Specifications

Switching elements	Solid-state Differential ECL
Operating mode	Uni-directional, full fanout
Configuration	See list (up to 64x64)
Signal type	Differential digital ECL
Signal connector	High performance SMB (snap) or SMA
Data range	>400Mbps
I/O impedance	50 ohms
Coupling	DC (AC optional)

Universal Switching's policy is one of continuous development, and consequently the company reserves the right to vary from the descriptions and specifications shown in this publication.

General Specifications

Module size	Depends upon array size
Control type	G2 compatible
Sparing	Hot-swappable
Construction	Shielded aluminum case
DC power	-200 or -D200 configuration +5V (digital), +/-5V (analog)
Weight	<1.5lbs (8x8)
Operating temp	0 to +70C
Non-operating temp	-20 to +85C
Humidity	0 to 95% (NC @ +25C)
MTBF	>95,000 hours (per MIL-HDBK-217F, N1 ground benign @ +25C)

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