

SPECIFICATIONS

Number of Channels:	Two.										
Type Outputs:	TTL active high and active low; VXibus TTLTRG; bipolar analog (each channel).										
Bipolar Outputs:	Programmable level - ± 17.4 volts (± 8.7 into 50 ohms). Transition time - < 70 nsec, 10% to 90% points, typical										
TTL Outputs:	Drive capability, 3.2 mA source, 24 mA sink current.										
Number of Sequential Output Durations:	1 to 1600 per channel.										
Number of Repeat Times:	1 to 63, or continuous.										
Time Period of Each Output Duration:	Programmable, 1 to 999,999 times the resolution range selected for each channel:										
<table><tr><th>Resolution Range</th><th>Time Period Duration</th></tr><tr><td>100 ns</td><td>100 nanoseconds to 99.9999 milliseconds.</td></tr><tr><td>1 μs</td><td>1 microsecond to 0.999999 seconds.</td></tr><tr><td>10 μs</td><td>10 microseconds to 9.99999 seconds.</td></tr><tr><td>100 μs</td><td>100 microseconds to 99.9999 seconds.</td></tr></table>		Resolution Range	Time Period Duration	100 ns	100 nanoseconds to 99.9999 milliseconds.	1 μ s	1 microsecond to 0.999999 seconds.	10 μ s	10 microseconds to 9.99999 seconds.	100 μ s	100 microseconds to 99.9999 seconds.
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Programmable Resolution of Each Output Duration:	Internal 10 MHz Clock: Four programmable resolution ranges: 100-nanosecond, 1 μ sec, 10 μ sec, and 100 μ sec resolution. External Clock: 1/f, 10/f, 100/f, 1000/f f = external clock input frequency.										
Significant Digits (Time Period Programming):	6 decimal digits (20 bit resolution).										
Trigger Modes:											
Non-retriggerable Mode:	Single trigger for total number of output cycles without interruption.										
Retriggerable Mode:	Each trigger restarts output from first output duration.										

Trigger Capability:	
Programmable:	Trigger under program control or trigger with external trigger input from multiple sources.
Sources (programmable):	Internal: Software initiated. External: Front panel connector. Any of 8 VXibus TTLTRG lines. VXibus TRIGGER command.
External Trigger Input:	Input (Front Panel or VXibus TTLTRG): Trigger occurs on TTL transition from high to low.
VXibus TTLTRG Selection:	Front Panel Loading: 1 TTL load equivalent with 10K pullup. Programmable, TTLTRG 0 through 7, synchronous trigger protocol.
Trigger Delay:	From receipt of trigger to start of output: 315 ns - 0 ns + 100 ns for all resolution ranges.
Breakpoint Capability:	1 to 1600 programmable breakpoints for each channel. Available in either Retriggerable or Non-Retriggerable modes.
Programmed By:	ASCII characters.
On-Card Memory:	3200 24 bit words (1600 words/channel).
Clock Source:	Internal: VXibus slot 0 10 MHz ECL clock. External: front panel connector.
External Clock Input:	
Type Input:	TTL.
Range:	1 kHz to 10 MHz.
Loading:	1.25 TTL load equivalents.
External Clock Outputs:	
Type:	TTL, 15 mA source, 64 mA sink current.
Frequency:	10 MHz.
TTL Outputs:	
Channel A and B Pulse/Pattern Outputs:	TTL active high and TTL active low.
Channel A and B Transmission In Progress Outputs:	TTL active high and TTL active low.

Drive Capability:	TTL, 5 mA source, 32 mA sink current.
Pulse/Pattern Output Sense:	BNC output, TTL high when active; VXIbus TTLTRG output, TTL low when active; DB25S TTL active high output, TTL high when active; DB25S TTL active low output, TTL low when active.
Transmission In Progress Output Sense:	TTL active high output, TTL high for transmission in progress; TTL active low output, TTL low for transmission in progress.
Bipolar Analog Outputs:	Levels (50 ohm load): Inactive level - $\pm 8.7V$ dc. Active level - $\pm 8.7V$ dc. Levels (high impedance load): Inactive level - $\pm 17.4V$ dc. Active level - $\pm 17.4V$ dc. Minimum load: 50 ohms. Resolution: 100 mV with 50 ohm load; 200 mV with high impedance. DC accuracy: 3% of full scale range. 10-90% rise/fall time: less than 60 nanoseconds.
Power-Up Conditions:	When power is applied, the module will go to the following known states: Channel A: Selected. Resolution: 100 nanosecond, both channels. Mode: Retriggerable, both channels. External Trigger: Disabled, both channels. External Trigger Source: Front panel, both channels. VXIbus TTLTRG Pulse/Pattern output: not programmed. Interrupt Capability: Disabled, both channels. Pulse/Pattern Memory Contents: Undefined. Channel A & B Repeat Count: Undefined. LEDs: Extinguished, except for Power LED. Pulse/Pattern Outputs: Inactive. Transmission In Progress Outputs: Transmission not in progress. Bipolar Outputs: 0V dc for both Active and Inactive levels.
VXIbus Data Rate:	Data/Commands. 1.8 Mbytes per second, fast handshake mode. Throughput will be affected by system controller and system controller/VXIbus interface.
Handshake Types:	Normal Mode Word Serial transfer or Fast Handshake Word Serial mode.
Logical Address:	Switch selectable, 1 through 254.

VXIbus Compatibility:	Fully compatible with the VXIbus Specification for message-based instruments with the Halt Switch in the ON position.
VXI Device Type:	VXI message based instrument, VXIbus Revision 1.2.
VXI Protocol:	Word serial.
VXI Card Size:	C size, one slot wide.
Module-Specific Commands:	All module-specific commands and data are sent via the VXIbus Byte Available command. All module-specific commands are made up of ASCII characters. Module-specific data may be in either ASCII or binary format.
VMEbus Interface:	Data transfer bus (DTB) slave - A16, D16 only.
Interrupt Level:	Switch selectable, levels 1 (highest priority) through 7 (lowest).
Interrupt Acknowledge:	D16, lower 8 bits returned are the logical address of the module. Upper 8 bits contain the VXIbus protocol event code.
VXIbus Fast Handshake:	Active for internal clock and for recommended external clock switch settings for external clock.
VXIbus Commands Supported:	<p>All VXIbus commands are accepted (e.g. DTACK* will be returned). The following commands have effect on this module; all other commands will cause an Unrecognized Command Event:</p> <p> BYTE AVAILABLE (with or without END bit set) BYTE REQUEST BEGIN NORMAL OPERATION CLEAR IDENTIFY COMMANDER READ PROTOCOL TRIGGER </p>
VXIbus Protocol Events Supported:	<p>VXIbus events are returned via VME interrupts. The following events are supported and returned to the 73A-270 Module's commander:</p> <p> UNRECOGNIZED VXIbus COMMAND REQUEST TRUE (In IEEE-488 systems such as the 73A-IBX, this interrupt will cause a Service Request (SRQ) to be generated on the IEEE-488 bus.) </p>
VXIbus Registers:	<p>ID Device Type</p>

Status
Control
Protocol
Response
Data Low
See Appendix A for definition of register contents.

Power Requirements: All required dc power is provided by the Power Supply in the VXIbus card cage.

Voltage: +5 Volt Supply: 4.75V dc to 5.25V dc.
+24 Volt Supply: +23.2V dc to +25.2V dc.
-24 Volt Supply: -23.2V dc to -25.2V dc.
-5.2 Volt Supply: -4.95V dc to -5.45V dc
-2.0 Volt Supply: -1.9V dc to -2.1V dc

Current (Peak Module, I_{PM}): +5 volt supply: 3.3 A
+24 volt supply: 120 mA *
-24 volt supply: 100 mA *
-5.2 volt supply: 35 mA
-2.0 volt supply: 26 mA

Current (Dynamic Module, I_{DM}): +5 volt supply: 150 mA ptp @ 23 MHz
+24 volt supply: 185 mA ptp @ 23 MHz *
-24 volt supply: 245 mA ptp @ 17 MHz *
-5.2 volt supply: 435 mA ptp @ 23 MHz
-2.0 volt supply: 435 mA ptp @ 22 MHz

* +24V dc tested with $\pm 7V$ dc 1 MHz bipolar output into 50 Ohms on both channels.

Cooling: Provided by the fan in the VXIbus card cage. Less than 10°C temperature rise with 1.76 liters/sec of air at a pressure drop of 0.099 mm of H₂O.

Fuses: Replacement fuses: +5V: Littlefuse P/N 273004,
-5.2V, -2V: Littlefuse P/N 273002,
 $\pm 24V$: Littlefuse P/N 273001,

Temperature: -10°C to +65°C, operating (assumes ambient temperature of 55° and airflow to assure less than 10°C temperature rise).
-40°C to +85°C, storage.

Humidity: Less than 95% R.H., noncondensing.

VXIbus Radiated Emissions: Complies with VXIbus Specification.

VXIbus Conducted Emissions: Complies with VXIbus Specification.

Dimensions, Shipping:	<p>When ordered with a CDS card cage, this module will be installed and secured in one of the instrument module slots (slots 1 - 12).</p> <p>When ordered alone, the module's shipping dimensions are:</p> <p style="padding-left: 40px;">406 mm x 305 mm x 102 mm. (16 in x 12 in x 4 in).</p>
Weight:	1.4 kg. (3.1 lbs).
Weight, Shipping:	<p>When ordered with a CDS card cage, this module will be installed and secured in one of the instrument module slots (slots 1-12).</p> <p>When ordered alone, the shipping weight is:</p> <p style="padding-left: 40px;">1.9 kg. (4.3 lbs).</p>
Mounting Position:	Any orientation.
Mounting Location:	Installs in an instrument module slot (slots 1-12) of a C or D size VXIbus card cage. (Refer to D size card cage manual for information on required adapters.)
Front Panel Signal Connectors:	<p>Six BNC jacks:</p> <ul style="list-style-type: none"> Pulse/pattern outputs, TTL; Pulse/pattern outputs, bipolar; External trigger inputs. <p>One DB-25S connector:</p> <ul style="list-style-type: none"> Pulse/pattern outputs, TTL active high and active low; Pulse/pattern outputs, bipolar; External trigger inputs; Transmission in progress outputs, TTL active high and active low; External clock input and output.
Recommended Cable:	(for DB-25S connector) 73A-734 Data Cable or 73A-782P Hooded Connector.
Equipment Supplied:	1 - 73A-270 Arbitrary Pulse/Pattern Generator Module.