NVE CORPORATION

Sensor and Isolator NEWS

February 2024

Electrifying News From NVE

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New Evaluation Boards

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40 Mbps, 125 °C Isolated Transceiver Evaluation Board

Four-Channel Wide-Body 7 kV Isolator Evaluation Board

Four-Channel QSOP Isolator Eval Board

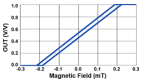
Four-Channel Narrow-Body Isolator Evaluation Board

Passive-Input Isolator Evaluation Board

More New Products »

Ultrasensitive Magnetometer Evaluation Board

The new **ALT021-10E-EVB02** is a small printed circuit board assembly that allows you to evaluate NVE's ultrasensitive **ALT021-10E TMR sensor** magnetometer with a 5x amplifier.



Key eval board **features** include:
- Remarkable 2.5 V/V/mT typ. sensitivity
- Miniature 13 x 8 mm PCB size
- Bipolar magnetic response
- Single-ended output
- 0.9 to 7 V supply voltage
- 1.1 to 1.6 mA current draw

This video showcases the remarkable sensitivity of the ALT021-10E using the new evaluation board:

Download Eval Board Manual »

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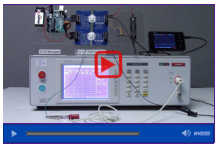
7 kV Isolators

Best-in-Class Isolation Voltage
IL700V-Series isolators have been upgraded to a remarkable 7 kVrms (9.9 kVpk), making them the toughest isolators available.

We demonstrate that the parts withstand 7 kV for one minute, and unlike most tests, we show the isolators keep operating throughout the test:



A Full Range of Configurations
All three standard four-channel IL700V-Series isolator configurations are **in stock** for immediate delivery, with two- and five-channel versions coming soon:

Model	Isolator Channel Config.	Isolation	Max. Op. Temp.	Availability
IL715VE	4/0	7 kV	125 °C	Stock
IL716VE	2/2			
IL717VE	3/1			

IL715VE Isolator Evaluation Boards »

Download Datasheet »

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125 °C Isolated RS-485 Transceivers

T-Series: Very cool isolators

New "T-Series" isolated transceiver versions are rated to 125 °C. These devices provide exceptional performance combined with unsurpassed ruggedness

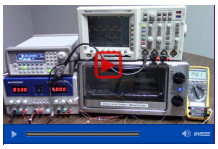
The World's Fastest Isolated Transceivers
IL3685-family isolators are rated at 4 Mbps, which is ideal for various general applications. IL3685 isolators boast a best-in-class 40 Mbps data rate with corresponding fastest available propagation delay and pulse skew.

Model (click for details)	Speed	Additional Features	Max. Operating Temp.	Package
IL3085TE	4 Mbps	General Purpose	125 °C	0.3" SOIC16
IL3685TE	40 Mbps	Thermal shutdown; fractional load; Hot-plug capable; Rigorous PROFIBUS		

Extreme Environments
The new IL3085TE and IL3685TE isolators are designed for extreme environments with their extended temperature range and 15 kV bus ESD. The IL3685 also has thermal shutdown protection to allow reliable high-speed, high-temperature operation.

Gold-Standard Certifications
NVE isolators are certified to the rigorous new IEC 60747-17 (VDE 0884-17):2021-10 standard. Many other isolators claim conformance to obsolete editions.

Demonstration
We demonstrated the ruggedness of the IL3685TE with a toaster oven torture test. These parts keep working when conventional parts are "toast":



IL3685TE Isolator Evaluation Board »

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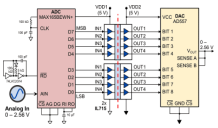
Application Corner

Isolated Parallel A-to-D-to-A Conversion

NVE isolators are ideal for isolating parallel data convertors such as ADCs and DACs. Isolation prevents ground loops and enhances safety.

This reference design is for high-speed, asynchronous analog-to-analog isolation with just a few chips, no microprocessor, and no software:



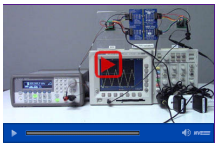
Isolated Parallel A-to-D-to-A Conversion. (click to enlarge)

An eight-bit A-to-D convertor measures the voltage, the data are isolated by a pair of four-channel isolators, then converted back to analog by a D-to-A convertor.

The circuit uses a simple astable oscillator as a sampling clock, with an ADC sampling rate more than 100 kS/s.

Since the **IL715** isolators have rail-to-rail outputs, an inexpensive R/2R network can replace the DAC in some applications.

This video shows the circuit and some variations in operation:



IL715 QSOP Evaluation Boards »

More Isolator Reference Designs »

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