Signal Products

Transceiver Modules

iNRCORE's Copperhead Series Transceiver Line Interface modules support a variety of high-speed applications, including IEEE 1394B Firewire, Fiber channel (over copper), Gigabit Ethernet and Digital Video (SMPTE-292M, HDTV). It integrates signal amplifier, received equalizer, line filter, and isolation transformer in a single package. The unique hybrid device buffers, reconditions, and isolates a high-speed data line for high reliability applications at speeds up to 2.125Gbps.

Unique Features

- Enhanced distance & signal integrity with convenient one package solution to replace components on PCB
- Low transmit/receive jitter
- Low power dissipation
- Low EMI emission
- ECL or CML logic interface
- Equalizer provides long distance application
- Transformer isolation provides better transient protection and common mode rejection
- Withstand lightning strike test per DO-160, Level 3, Waveform 3

Product Range

- 133 Mbps (1/8 speed Fiber Channel / ATM)
- 266 Mbps (1/4 speed Fiber Channel)
- 531 Mbps (1/2 speed Fiber Channel)
- 1062 Mbps (Full speed Fiber Channel)
- 1250 Mbps (Gigabit Ethernet)
- 1485 Mbps (SMPTE-292M)
- 2125 Mbps (Dual speed Fiber Channel)
- STP and Twinax (150Ω)
- Unshielded Twisted Pair (100Ω)
- Video and Mini-Coax (75Ω)
- Coax (50Ω)
- A: 5V, B: 3.3V
- H, D, F package available

Applications

- Fiber channel (over copper), IEEE 1394B Firewire, Gigabit Ethernet, Digital Video (SMPTE-292M, HDTV)

Data Isolation Transformers

iNRCORE's Copperhead™ Series Data Isolation Transformers support a variety of data transmission and receiving applications. The data rate ranges from 265 Mbps to 3200 Mbps. These parts integrate single or dual transformer in one compact package.

Unique Features

- High reliability
- Low insertion loss
- Sharp rising edge
- Large data rate range from 1 Mbps to 3.2 Gbps
- Support a variety of high speed applications

Product Range

- 1 Mbps (TTP: Time Triggered Protocol)
- 266 Mbps (1/4 speed Fibre Channel)
- 531 Mbps (1/2 speed Fibre Channel)
- 1062 Mbps (Full speed Fibre Channel)
- 1250 Mbps (Gigabit Ethernet)
- 1485 Mbps (SMPTE-292M)
- 3200 Mbps (1394B Firewire S3200)
- Single and Dual transformers in a single package available

Applications

- TTP (Time Triggered Protocol), Fibre Channel (over copper), IEEE 1394B Firewire, Gigabit Ethernet, Digital Video (SMPTE-292M, HDTV)

Ethernet Transformers

iNRCORE's discrete Ethernet Transformers are ruggedized in transfer molding or pour-filled construction to meet MIL-PRF-21038 environmental requirements. They support various Ethernet protocols, including AFDX (Avionics Full Duplex Switched Ethernet), TTE (Time-Triggered Ethernet), and IEEE 802.3x – including PoE (Power over Ethernet).

Unique Features

- High reliability
- Transfer molded or pour filled construction
- Multiple package and configuration available
- Meet MIL-PRF-21038 environmental requirements
- Highest isolation discreet Ethernet Transformer available on market, 10KVAC insulation
- Custom design, testing and screening upon request

Product Range

- Single / Dual / Quad Port

Applications

- 10Base-T (IEEE 802.3i)
- 100Base-TX (IEEE 802.3u)
- 1000Base-T (IEEE 802.3ab)
- PoE (IEEE 802.3af)
- AFDX (Avionics Full Duplex Switched Ethernet, ARINC 644 p7)
- TTE (Time Triggered Ethernet, SAE AS6802)

MIL-STD-1553 Transformers

iNRCORE's QPL and Non-QPL MIL-STD-1553 transformers are designed, built, and tested to MIL-PRF-21038, and they support all major 1553 transceivers with short stubbed and/or long stubbed communication via a MIL-STD-1553 data bus. iNRCORE has the most complete MIL-STD-1553 transformer line on the market, with various packages, configurations, and product testing levels available.

Unique Features

- Designed, built and tested to MIL-PRF-21038
- Support all major 1553 transceivers
- Support +12V, +5V and +3.3V core voltage
- Impedance >4KΩ from 75kHz to 1MHz over extended temperature range
- Impedance >7.2KΩ available
- MIL-STD-981 versions available upon request

Product Range

- QPL (MIL-PRF-21038) and COTS (Non-QPL)
- Hermetically Sealed version available
- Single Ratio and Dual Ratio in a single package available
- Single interface transformer and dual interface transformer in a single package available
- Low profile and stacked versions available
- Multiple Operating Temperature Ranges: 0℃ to 70℃, -40℃ to +85℃, -55℃ to +125℃
- Through Hole (THT), Flat Pack and Gull-Wing versions available
- Diffe
- rent product levels (Level C, M & T)

MIL-STD-1553 Data Bus Couplers

iNRCORE's MIL-STD-1553 Data Bus Couplers are developed for bench test applications. They integrate MIL-STD-1553 transformers per MIL-PRF-21038/27 and 58.5 Ω non-inductive resistors. iNRCORE's couplers are available in 1, 2, 3 or 4 stubs.

Unique Features

- MIL-STD-1553 compatible
- Impedance >7.2KΩ from 75kHz to 1MHz over extended temperature range
- Termination resistor integrated versions available on request
- MIL-STD-981 versions available upon request

Product Range

- 1, 2, 3, or 4 stubs available
- PCB mount and connectorized modules available

Baluns

iNRCORE's high-frequency baluns are designed for SMPTE-292M and SMPTE-424M/425M applications, as well as standard testing equipment. They transform 50Ω / 75Ω grounded unbalanced signals to 100Ω /150Ω balanced differential signals and vice versa. Discrete surface mounting components and connectorized modules are available.

Unique Features

- Low insertion Loss
- High data rate transmission
- Good impedance match over wide bandwidth

- Support SMPTE-292M application at 1.485 Gbps data rate
- Support SMPTE-424M/425 application at 2.97 Gbps data rate
- Pulse patented technology
- Available for flight application with ruggedized packaging
- Custom packaging and connectors on request

Product Range

- Impedance Ratio:
    - 150Ω : 50Ω, 100Ω : 50Ω, 78Ω : 50Ω, 100Ω : 75Ω, 150Ω : 75Ω
- Discrete surface mounting components and connectorized modules available

Applications

- SMPTE-292M application at 1.485 Gbps data rate, SMPTE-424M/425 application at 2.97 Gbps data rate, Bench test, 150Ω Fibre Channel, 100Ω Gigabit Ethernet

BMS Transformers

iNRCORE's BMS transformers have robust design by using proven "Double Connection" (i.e. spot welding and adding post soldering processes) which resolve the key customer pain point of open failure at wire termination. Key process such as winding, spot welding, soldering, testing and packing are fully automated. iNRCORE offers functional, basic and reinforced insulation in five different packages with or without common mode chokes.

Unique Features

- Full automation of key processes
- Double connection (i.e. spot welding and adding post soldering processes)
- Operating temperature: -40℃ to +125℃
- Support BMS isolation and EMI solutions
- Support Serial Daisy Chain, isoSPI, SPI and other signal isolation
- AEC-Q200 complaint
- Functional, Basic and Reinforced insulation available
- With or without common mode choke available
- Single channel and dual channel available

Product Range

- Number of Channels: 1 & 2
- Insulation: Functional, Basic, Reinforced

Applications

- Electric Vehicle
- Energy Storage Systems (ESS)
- Solar Energy Storage
- Data Center UPS

Delay Lines

iNRCORE offers non-QPL passive delay lines per MIL-PRF-83531 and QPL active delay lines per MIL-PRF-83532. Standard total delay values range from 25nS to 500nS and tap delay values from 5nS to 100nS. SIP, DIP, SMT packages are available.

Unique Features

- Passive Delay Lines designed, built and tested to MIL-PRF-83531
- Active Delay Lines designed, built and tested to MIL-PRF-83532
- Delay value range from 25nS to 500nS
- 50Ω & 100Ω impedance values
- Multiple package (SIP, DIP, SMT) available

Product Range

- Total delay: 25nS to 500nS
- Tap delay: 5nS to 100nS

Applications

- Trimming time delays, Generating system timing, Clock generation and controlling row & column addresses in DRAM's