SPECIFICATIONS

TRC-8543

CAN HS/FD or LS/FT Transceiver Cable

The following specifications are typical for the range -40 °C to 70 °C unless otherwise noted.

High-Speed/Flexible Data-Rate CAN Characteristics

Transceiver	NXP TJA1043T
Max certified baud rate	5 Mbps[1]
Input voltage limits CAN_H, CAN_L bus lines	-27 VDC to +40 VDC
Output voltage limit CAN_H, CAN_L bus lines	5 VDC
MTBF	Contact NI for Bellcore MTBF specifications at other temperatures or MIL-HDBK-217F specifications.

Low-Speed/Fault-Tolerant CAN Characteristics

Transceiver	NXP TJA1055T
Max baud rate	125 Kbps
CAN_H, CAN_L bus lines voltage	-27 VDC to +40 VDC
CAN Supply voltage range (V_{SUP})	+9 VDC to +30 VDC
MTBF	Contact NI for Bellcore MTBF specifications at other temperatures or for MIL-HDBK-217F specifications.

[1] The NXP TJA1043 transceiver is CiA certified for baud rates up to 5 Mb/s in the CAN FD fast phase, while speeds up to 8 Mb/s are possible experimentally. NI-XNET provides a warning when a transceiver is used at higher baud rates than it is certified for. As new CiA-certified transceivers with higher baud rates are released, NI will continue to update the hardware with newer revisions.

Power Requirements

Thermal dissipation (at 70 °C)	700 mW max (Low-Speed/Fault-Tolerant fault condition); 550 mW max (High-Speed active mode); 440 mW typical (High-Speed active mode); 333 mW typical (Low-Speed/Fault-Tolerant active mode)
Power consumption from TRC-8543 host	550 mW max (High-Speed active mode); 440 mW typical (High-Speed active mode); 310 mW max (Low-Speed/Fault-Tolerant active mode); 245 mW typical (Low-Speed/Fault-Tolerant active mode)
Power consumption from V_{SUP}	320 mW max (Low-Speed/Fault-Tolerant fault condition); 90 mW typical (Low-Speed/Fault-Tolerant active mode)

Note Power on V_{SUP} is required for Low-Speed/Fault-Tolerant CAN operation.

Physical Characteristics

To clean the TRC-8543, wipe it with a dry towel.

Weight	70 g (2.5 oz)
Length	447 mm to 462 mm (17.6 in. to 18.2 in.)
D-Sub connector jackscrew maximum torque	0.56 N · m (5.0 lb · in.)

Safety

Maximum Voltage[2]

Connect only the voltages that are within these limits.

Port-to-COM	-27 VDC to +40 VDC max, Measurement Category I

Measurement Category I is for measurement performed on circuits not directly connected to the electrical distribution system referred to as MAINS voltage. MAINS is a hazardous live electrical supply system that powers equipment. This category is for measurements of voltages from specially protected secondary circuits. Such voltage measurements include signal levels,

[2] The maximum voltage that can be applied or output without creating a safety hazard.

special equipment, limited-energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.

Caution Do not connect to signals or use for measurements within Measurement Categories II, III, or IV.

Note Measurement Categories CAT I and CAT O (Other) are equivalent. These test and measurement circuits are not intended for direct connection to the MAINs building installations of Measurement Categories CAT II, CAT III, and CAT IV.

Isolation Voltage

Port-to-earth ground	
Continuous	60 VDC, Measurement Category I

Note The TRC-8543 COM signals are not connected to the host port ground.

Safety and Hazardous Locations Standards

This product is designed to meet the requirements of the following electrical equipment safety standards for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA 61010-1
- EN 60079-0:2012, EN 60079-15:2010
- IEC 60079-0: Ed 6, IEC 60079-15; Ed 4
- UL 60079-0; Ed 6, UL 60079-15; Ed 4
- CSA 60079-0:2011, CSA 60079-15:2012

Note For UL and other safety certifications, refer to the product label or the *Online Product Certification* section.

Hazardous Locations

U.S. (UL)	Class I, Division 2, Groups A, B, C, D, T4; Class I, Zone 2, AEx nA IIC T4
Canada (C-UL)	Class I, Division 2, Groups A, B, C, D, T4; Class I, Zone 2, Ex nA IIC T4
Europe (DEMKO)	Ex nA IIC T4 Gc

Environmental

Refer to the manual for the host you are using for more information about meeting these specifications.

Operating temperature[3] (IEC 60068-2-1, IEC 60068-2-2)	-40 °C to 70 °C
Storage temperature[2] (IEC 60068-2-1, IEC 60068-2-2)	-40 °C to 85 °C
Ingress protection	IP40
Operating humidity (IEC 60068-2-56)	10% RH to 90% RH, noncondensing
Storage humidity (IEC 60068-2-56)	5% RH to 95% RH, noncondensing
Pollution Degree (IEC 60664)	2
Maximum altitude	5,000 m

Indoor use only.

Shock and Vibration

To meet these specifications, you must securely mount your TRC-8543 and ensure all cables and connectors have proper strain relief.

Operating vibration	
Random (IEC 60068-2-64)	5 g_{rms}, 10 Hz to 500 Hz
Sinusoidal (IEC 60068-2-6)	5 g, 10 Hz to 500 Hz
Operating shock (IEC 60068-2-27)	30 g, 11 ms half sine; 50 g, 3 ms half sine; 18 shocks at 6 orientations

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Industrial immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- EN 55022 (CISPR 22): Class A emissions

[3] Similar to other standard PVC cables, this product's cable becomes less ductile at low temperatures. Preroute and secure the cable while flexible to avoid premature failure.

- EN 55024 (CISPR 24): Immunity
- AS/NZS CISPR 11: Group 1, Class A emissions
- AS/NZS CISPR 22: Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia and New Zealand (per CISPR 11) Class A equipment is intended for use only in heavy-industrial locations.

Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.

Note For EMC declarations and certifications, and additional information, refer to the *Online Product Certification* section.

CE Compliance CE

This product meets the essential requirements of applicable European Directives, as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)
- 2014/34/EU; Potentially Explosive Atmospheres (ATEX)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit *ni.com/certification*, search by model number or product line, and click the appropriate link in the Certification column.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at *ni.com/environment*. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Waste Electrical and Electronic Equipment (WEEE)

EU Customers At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit *ni.com/environment/weee*.

电子信息产品污染控制管理办法（中国 RoHS）

中国客户 National Instruments 符合中国电子信息产品中限制使用某些有害物质指令(RoHS)。关于 National Instruments 中国 RoHS 合规性信息，请登录 `ni.com/environment/rohs_china`。(For information about China RoHS compliance, go to `ni.com/environment/rohs_china`.)

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