



NATIONAL HYBRID, INC.

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Mil-Std-1553 Products

Single Channel Hybrid Transceivers

Features/Applications:

- Available for +15V, +12V, and +5V Only Applications
- Very Low Standby Power
- Low Thermal Resistance
- Very Low Dynamic Offset
- Short Circuit Proof
- Superior Noise Performance
- Screened to Mil-PRF-38534

Description:

The NHI family of single transceivers are available in 1.275" x .780", 24 pin plug-in and flatpack packages.

The receiver converts the 1553 bus bi-phase data to complementary RX and RX_L TTL digital outputs for use by the manchester decoder. The device provides a receiver enable strobe input to control the outputs of the received data. Devices are available with receiver outputs normally HIGH or LOW during standby mode for compatibility with industry standard decoders.

The transmitter will output bi-phase manchester to the coupling transformer when the TX and TX_L inputs are driven by complementary TTL digital data. The device provides a transmitter inhibit input TXINH to disable the transmitter.

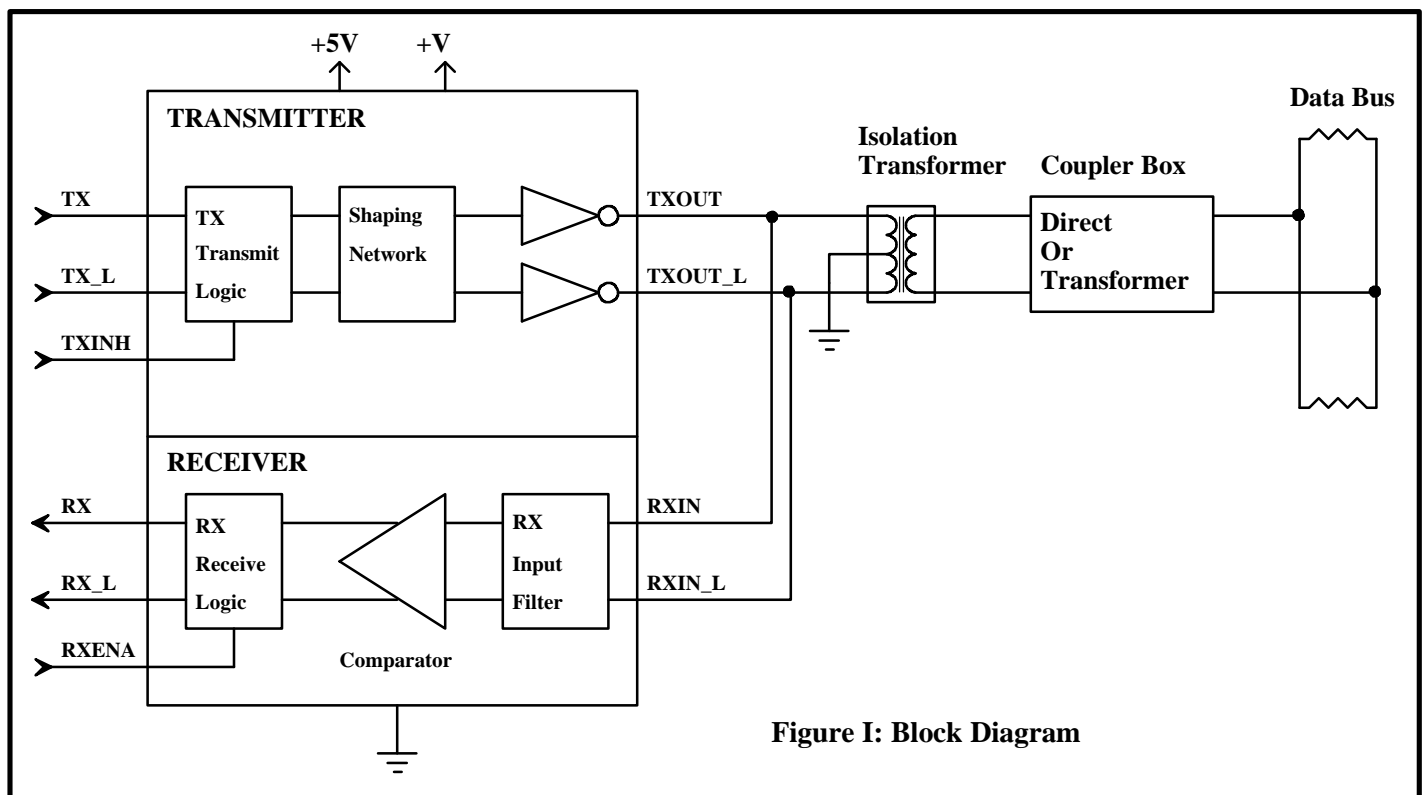


Figure I: Block Diagram

Single Channel Transceivers

Transformer Requirements:

The NHI-15XX series of single channel transceivers require a transformer in order to couple to the Mil-Std-1553 Bus.

The turns ratios required for both Direct and Transformer Coupling for each device type, and the corresponding Technitrol part numbers Q1553-X are outlined in the table below.

The center tap on the transceiver side of the isolation transformer must be grounded.

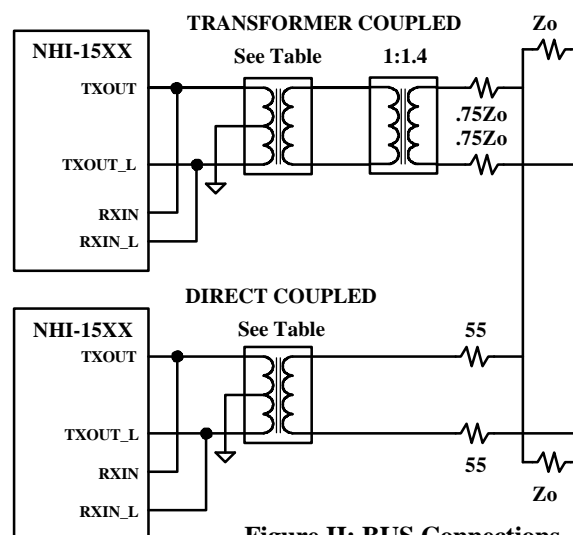


Figure II: BUS Connections

Device	Power Supply +V	Transformer Turns Ratio Direct	Transformer Turns Ratio Stub	Technitrol Part Number	DESC SMD
NHI-1508	+15V	1.40:1.00	2.00:1.00	Q1553-2	
NHI-1509	+15V	1.40:1.00	2.00:1.00	Q1553-2	5962-8604906
NHI-1510	+15V	1.40:1.00	2.00:1.00	Q1553-2	
NHI-1531	+12V	1.25:1.00	1.66:1.00	Q1553-3	5962-9082905
NHI-1534	+5V Only	1.00:2.12	1.00:1.50	Q1553-5	
NHI-1535	+5V Only	1.00:2.12	1.00:1.50	Q1553-5	
NHI-1545	+12V	1.25:1.00	1.66:1.00	Q1553-3	5962-9082906

Single Channel Transceivers

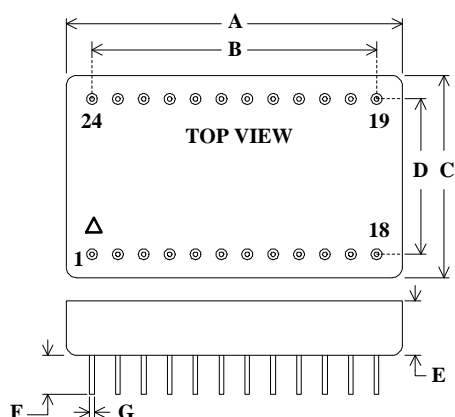
+5V Only Device Pin Functions

Pin#	Function	Pin#	Function
1	TXOUT	24	NC
2	TXOUT_L	23	TX_L
3	GND	22	TX
4	NC	21	TXINH
5	NC	20	+5V
6	NC	19	NC
7	RX	18	GND
8	RXENA	17	NC
9	GND	16	RXIN_L
10	RX_L	15	RXIN
11	NC	14	NC
12	NC	13	NC

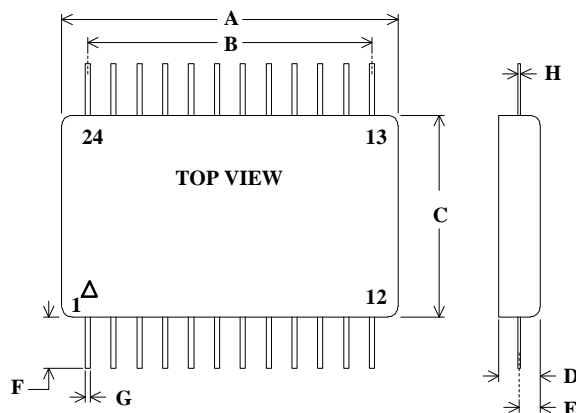
+15V & +12V Device Pin Functions

Pin#	Function	Pin#	Function
1	TXOUT	24	NC
2	TXOUT_L	23	TX_L
3	GND	22	TX
4	NC	21	TXINH
5	NC	20	+5V
6	NC <u>\1</u>	19	NC
7	RX	18	GND
8	RXENA	17	NC
9	GND	16	RXIN_L
10	RX_L	15	RXIN
11	NC	14	NC
12	NC	13	+V

\1 Control voltage input TXVOC for NHI-1508 variable transmitter output transceiver.



24 Pin Plug-In Package Detail



24 Pin Flatpack Package Detail

24 Pin Plug-In Dimensions

DIM	TYP (inches)	TOL (+/- inches)
A	1.270 "	0.010 "
B	11 EQ SP @	0.100 = 1.700 "
C	0.770 "	0.010 "
D	0.600 "	0.010 "
E	0.215 "	MAX
F	0.175 "	MIN
G	0.018 " DIA.	0.002 "

24 Pin Flatpack Dimensions

DIM	TYP (inches)	TOL (+/- inches)
A	1.275 "	0.010 "
B	11 EQ SP @	0.100 = 1.100 "
C	0.775 "	0.010 "
D	0.175 "	MAX
E	0.072 "	0.010 "
F	0.500 "	MIN
G	0.015 "	0.003 "
H	0.010 "	0.002 "

Single Channel Transceivers

Ordering Information:

NHI-1508 FP / 883

Reliability Grade

883 = Fully Compliant with Mil-Std-883

M = Military, -55 to +125 °C

Blank = Industrial, -40 to +85 °C

Package Style

Blank = Plug-In

FP = Flatpack

Decoder Compatibility

08 = +15V, Variable Output, RX & RX_L, Standby = Logic 0

09 = +15V, RX & RX_L, Standby = Logic 0

10 = +15V, RX & RX_L, Standby = Logic 1

31 = +12V, RX & RX_L, Standby = Logic 0

34 = +5V, RX & RX_L, Standby = Logic 0

35 = +5V, RX & RX_L, Standby = Logic 1

45 = +12V, RX & RX_L, Standby = Logic 1

See QML-38534 for NHI's Manufacturer Qualification Under Mil-PRF-38534