Catalog



DE8200

MIL-STD-1553 Bus Couplers

Box Type

DEICO

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BUS COUPLER
STUB PORTS
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BUS

1. Description

The MIL-STD-1553 communication bus electrically connects multiple devices to facilitate reliable communication in various platforms, including both military and civil applications.

These bus configurations are built using various components such as cables, bus couplers, terminating resistors and connectors. In a data bus structure, bus couplers play a role in providing shielding, isolation resistance and transformer interfaces for connection points known as stubs. In this respect, bus couplers are the commercial off-the-shelf (COTS) solutions for easier and more reliable wiring.

DEICO bus couplers are designed to provide an economical solution for both platform and professional benchtop test systems. The product offers users the opportunity to have MIL-STD-1553 bus networks through fast delivery options at a fraction of the cost.

2. Ordering Guide

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Product Code

Product Type

1	PCB type
2	Box type

Termination Type

0	No termination
1	Right side termination (RTRM)
2	Left side termination (LTRM)
3	Double termination (DTRM)

Stub Count

1	1 stub (for box type)
2	2 stubs (for box type)
3	3 stubs (for box & PCB type)
4	4 stubs (for box & PCB type)
5	5 stubs (for box & PCB type)
6	6 stubs (for box type)
7	7 stubs (for box type)
8	8 stubs (for box type)

Eg: **DE8238** - Box Type Bus Coupler - Double Termination - 8 Stubs

3. Configuration Options

Table 1: Box Type Bus Couplers with 1 Stub

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8201	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8211	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8221	1:1.41	59 Ohms ±1% 1W	Left side terminated

Table 2: Box Type Bus Couplers with 2 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8202	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8212	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8222	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8232	1:1.41	59 Ohms ±1% 1W	Dual terminated

Table 3: Box Type Bus Couplers with 3 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8203	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8213	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8223	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8233	1:1.41	59 Ohms ±1% 1W	Dual terminated

Table 4: Box Type Bus Couplers with 4 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8204	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8214	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8224	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8234	1:1.41	59 Ohms ±1% 1W	Dual terminated

Table 5: Box Type Bus Couplers with 5 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8205	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8215	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8225	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8235	1:1.41	59 Ohms ±1% 1W	Dual terminated

Table 6: Box Type Bus Couplers with 6 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8206	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8216	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8226	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8236	1:1.41	59 Ohms ±1% 1W	Dual terminated

Table 7: Box Type Bus Couplers with 7 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8207	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8217	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8227	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8237	1:1.41	59 Ohms ±1% 1W	Dual terminated

Table 8: Box Type Bus Couplers with 8 Stubs

Product Code	Transformer Ratio	Stub Resistor Value	Termination Type
DE8208	1:1.41	59 Ohms ±1% 1W	Non-terminated
DE8218	1:1.41	59 Ohms ±1% 1W	Right side terminated
DE8228	1:1.41	59 Ohms ±1% 1W	Left side terminated
DE8238	1:1.41	59 Ohms ±1% 1W	Dual terminated

4. Specifications

Table 9: Electrical Specifications

Common Mode Rejection	-45.0 dB Max @1.0 MHz
Droop	20% max (250 kHz)
Overshoot & Ringing	±1.0 V peak (250 kHz square wave with 100 ns)
Stub Voltage	1.0 V to 14.0 V P-P, line to line, signal voltage, transformer coupling
Input Impedance Of Bus	3000 Ω min (75 kHz – 1.0 MHz), stub with open circuit

Table 10: Mechanical Specifications

Enclosure Material	Aluminum, 2 mm thick
Mounting Plate Material	Aluminum, 2 mm thick
Bottom Part	White chromate
Body	Black paint
Connectors	BJ770
Recommended Mating Connector	PL75
Recommended Stub Termination	DE8608
Recommended Bus Termination	DE8607

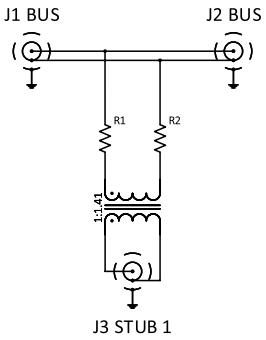
Table 11: Environmental Specifications

High Temperature Operating	MIL-STD-810G_CHG-1 Method 501.6 Procedure II, +125 °C
Low Temperature Operating	MIL-STD-810G_CHG-1 Method 502.6 Procedure II, -55 °C
High Temperature Storage	MIL-STD-810G_CHG-1 Method 501.6 Procedure I, +125 °C
Low Temperature Storage	MIL-STD-810G_CHG-1 Method 502.6 Procedure I, -55 °C
Vibration	MIL-STD-810G_CHG-1 Method 514.7 Procedure I - Category 12, 15 Hz to 2000 Hz, (performance: W0=0.040 and A=0.02, duration: half hour/axis), (endurance: W0=0.053 and A=0.02, duration: 1 hour/axis)
Shock	MIL-STD-810G_CHG-1 Method 516.7 Procedure V (40 g, 11 ms, terminal peak sawtooth, number of shocks: 12, two in each direction of three axes)
Rain	MIL-STD-810G Method 506.5 Procedure I

DE8201

MIL-STD-1553 Bus Coupler

Box Type, 1 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R2) in series with transformer winding on bus side	Not terminated

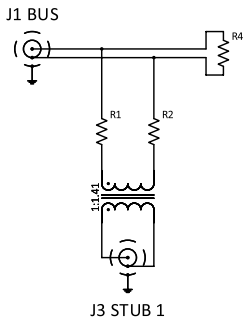




DE8211

MIL-STD-1553 Bus Coupler

Box Type, 1 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R2) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R4) bus termination

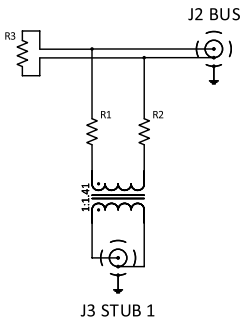




DE8221

MIL-STD-1553 Bus Coupler

Box Type, 1 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R2) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R3) bus termination

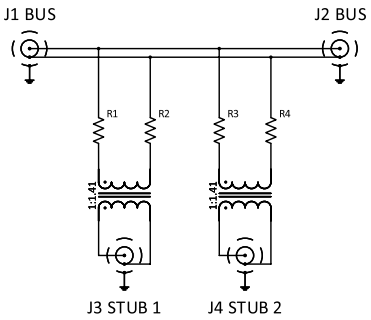




DE8202

MIL-STD-1553 Bus Coupler

Box Type, 2 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R4) in series with transformer winding on bus side	Not terminated

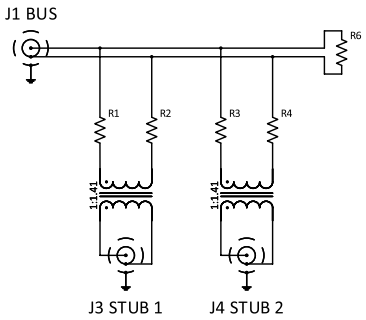




DE8212

MIL-STD-1553 Bus Coupler

Box Type, 2 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R4) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R6) bus termination

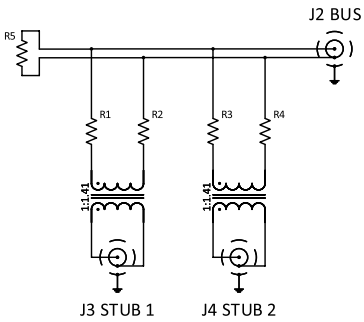




DE8222

MIL-STD-1553 Bus Coupler

Box Type, 2 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R4) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R5) bus termination

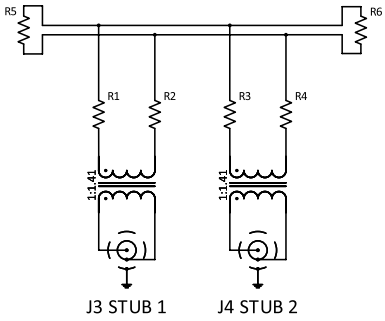




DE8232

MIL-STD-1553 Bus Coupler

Box Type, 2 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R4) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R5, R6) bus termination

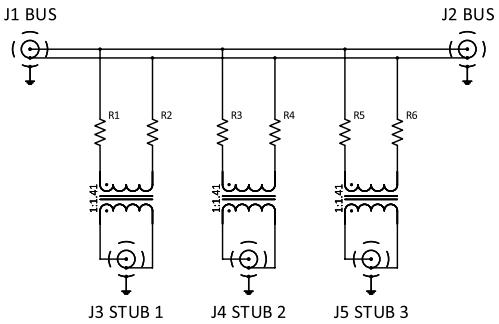




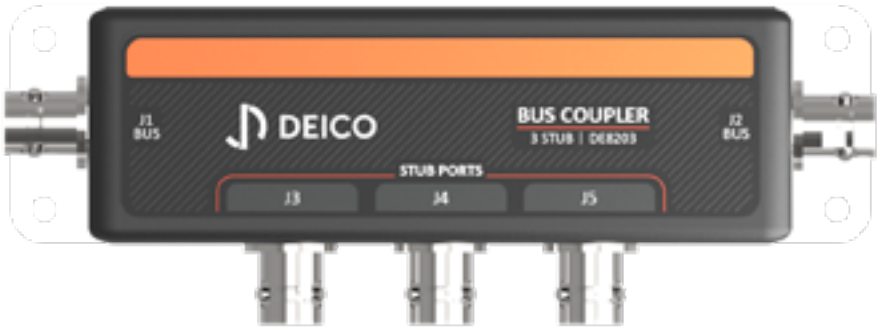
DE8203

MIL-STD-1553 Bus Coupler

Box Type, 3 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R6) in series with transformer winding on bus side	Not terminated

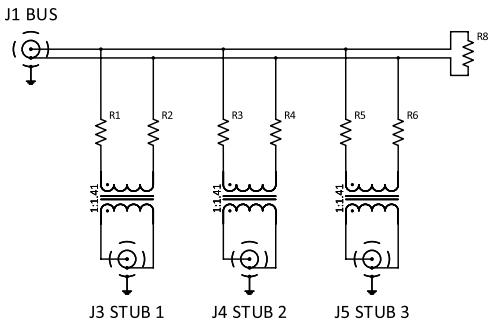




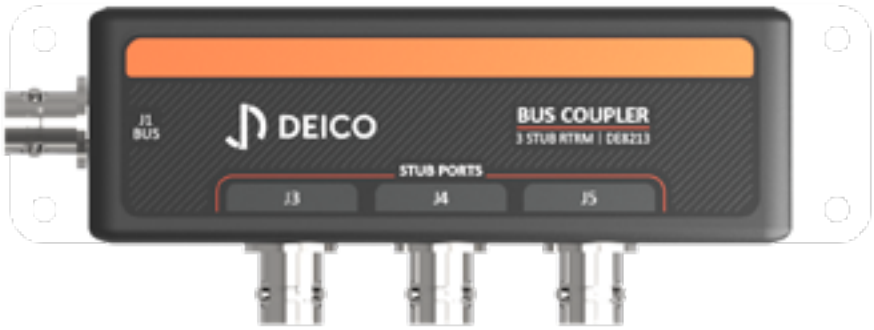
DE8213

MIL-STD-1553 Bus Coupler

Box Type, 3 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R6) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R8) bus termination

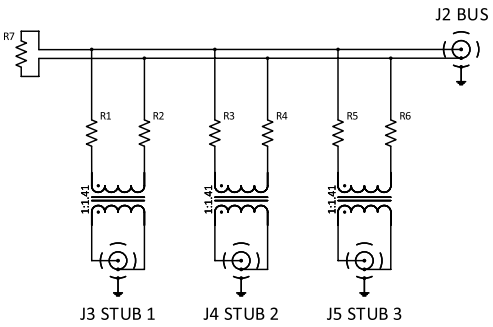




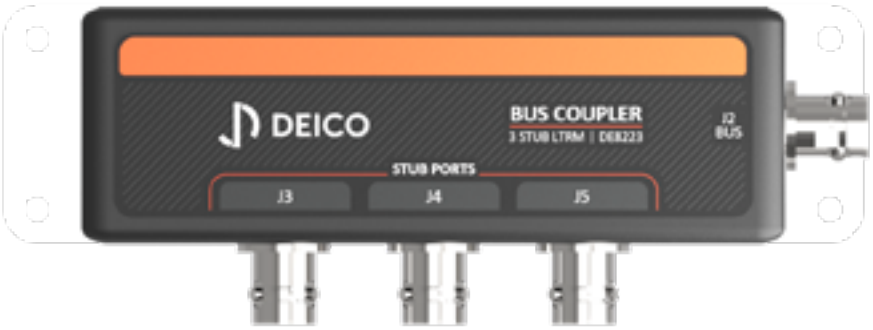
DE8223

MIL-STD-1553 Bus Coupler

Box Type, 3 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R6) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R7) bus termination

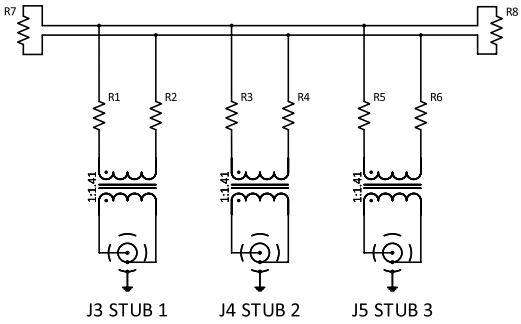




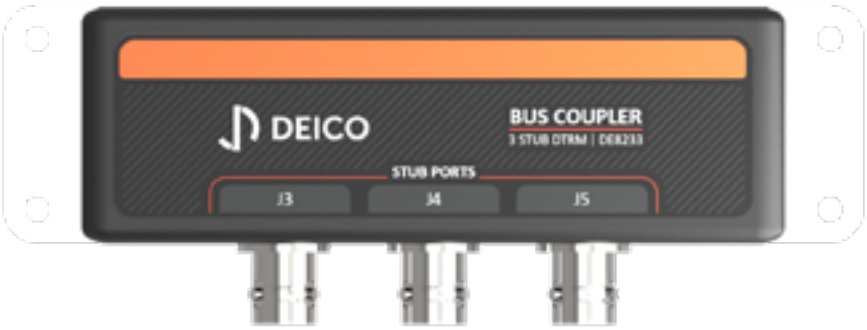
DE8233

MIL-STD-1553 Bus Coupler

Box Type, 3 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R6) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R7, R8) bus termination

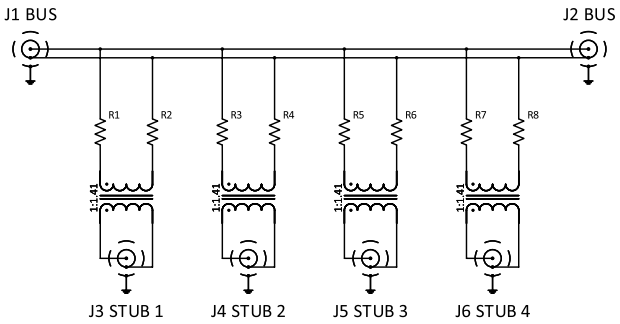




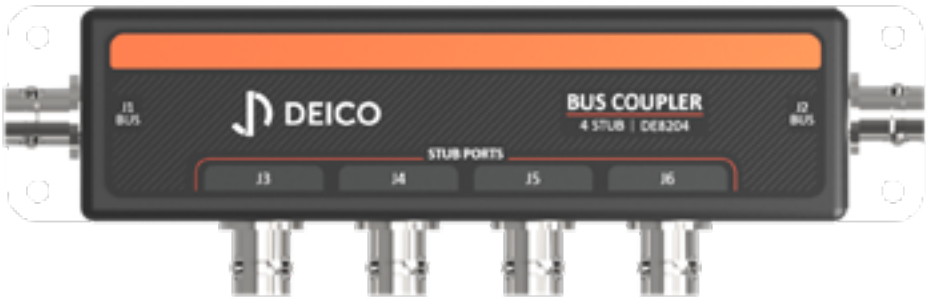
DE8204

MIL-STD-1553 Bus Coupler

Box Type, 4 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R8) in series with transformer winding on bus side	Not terminated

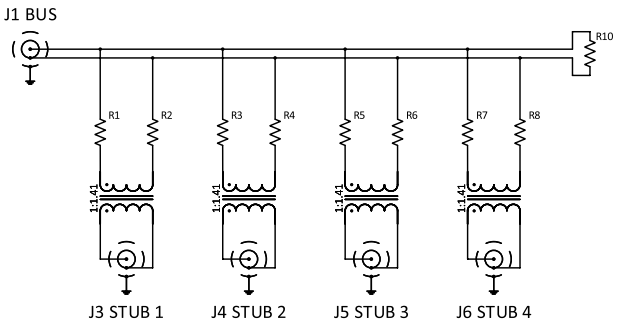




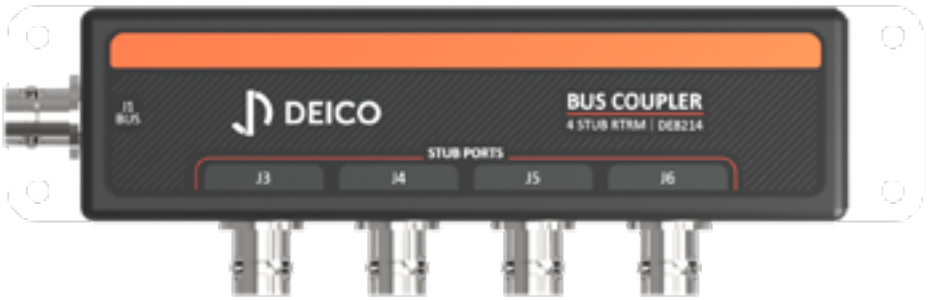
DE8214

MIL-STD-1553 Bus Coupler

Box Type, 4 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R8) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R10) bus termination

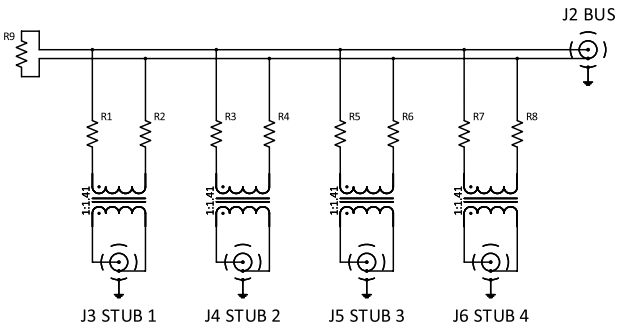




DE8224

MIL-STD-1553 Bus Coupler

Box Type, 4 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R8) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R9) bus termination

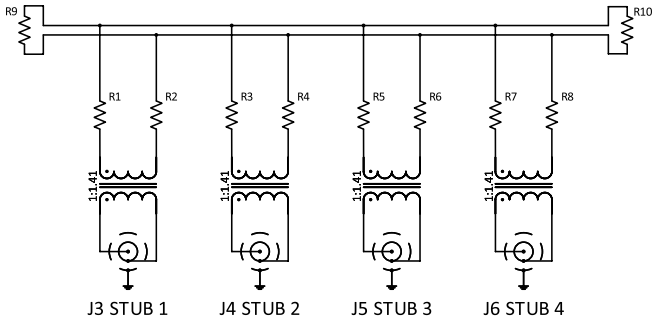




DE8234

MIL-STD-1553 Bus Coupler

Box Type, 4 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R8) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R9, R10) bus termination

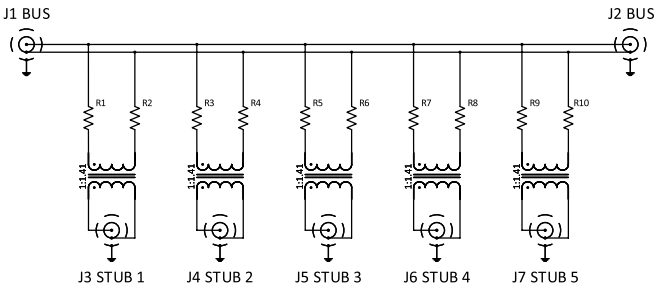




DE8205

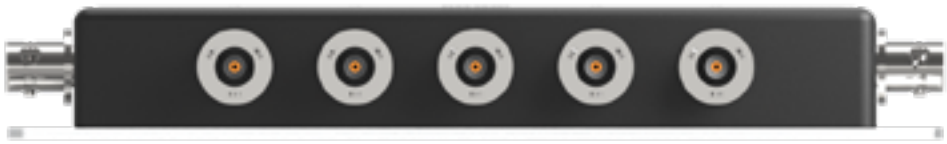
MIL-STD-1553 Bus Coupler

Box Type, 5 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R10) in series with transformer winding on bus side	Not terminated

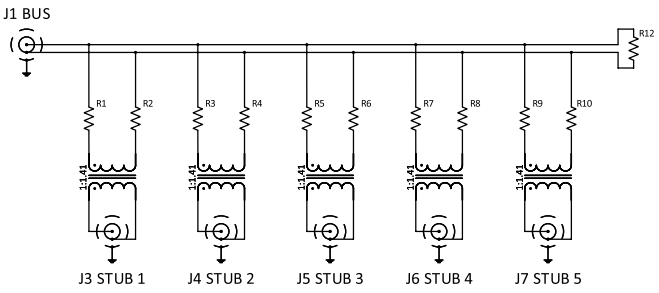




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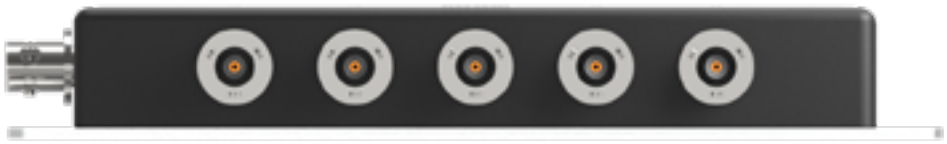
MIL-STD-1553 Bus Coupler

Box Type, 5 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R10) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R12) bus termination

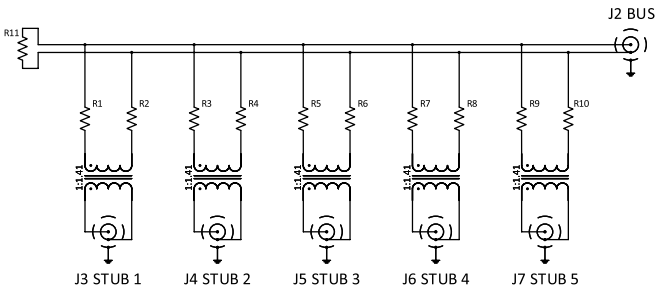




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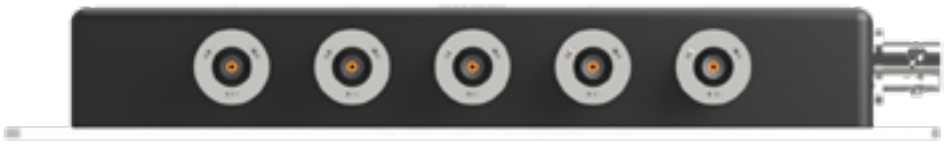
MIL-STD-1553 Bus Coupler

Box Type, 5 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
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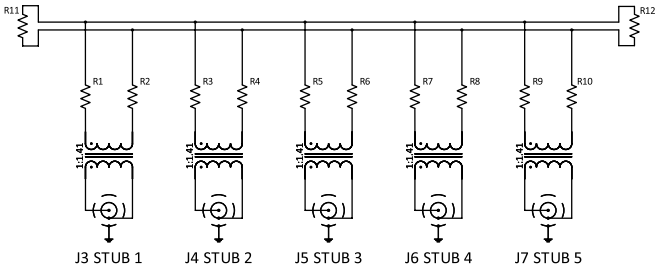




DE8235

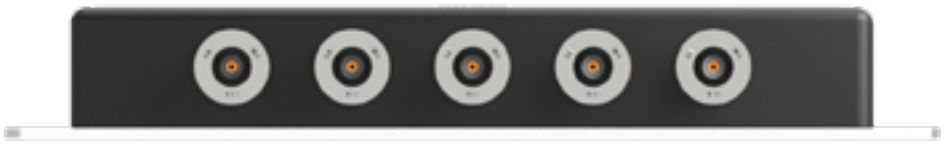
MIL-STD-1553 Bus Coupler

Box Type, 5 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
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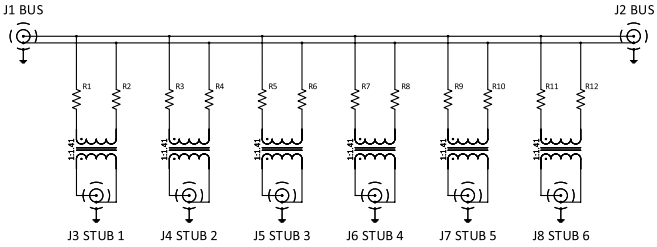




DE8206

MIL-STD-1553 Bus Coupler

Box Type, 6 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R12) in series with transformer winding on bus side	Not terminated

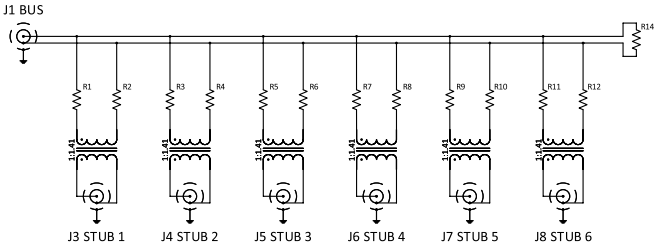




DE8216

MIL-STD-1553 Bus Coupler

Box Type, 6 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R12) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R14) bus termination

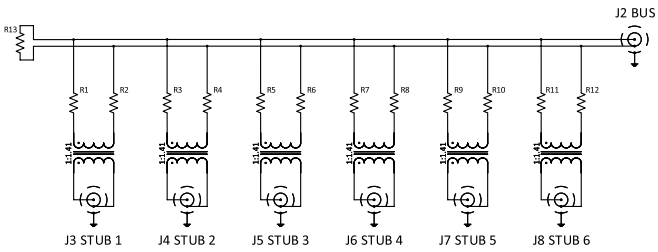




DE8226

MIL-STD-1553 Bus Coupler

Box Type, 6 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R12) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R13) bus termination

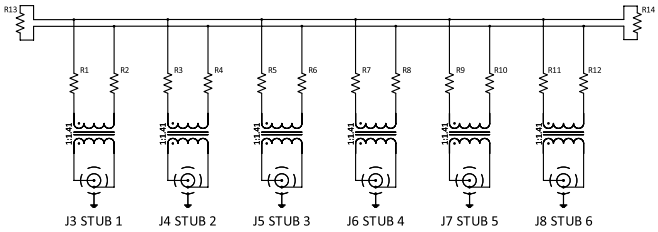




DE8236

MIL-STD-1553 Bus Coupler

Box Type, 6 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R12) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R13, R14) bus termination

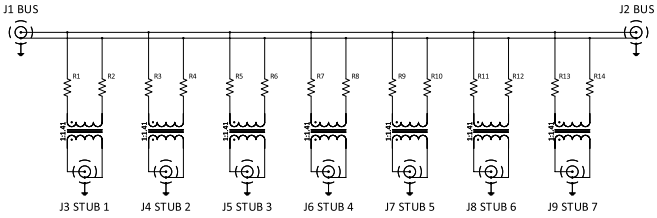




DE8207

MIL-STD-1553 Bus Coupler

Box Type, 7 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R14) in series with transformer winding on bus side	Not terminated

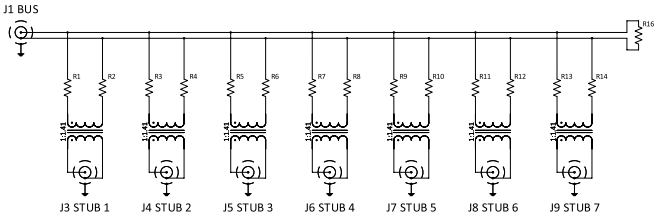




DE8217

MIL-STD-1553 Bus Coupler

Box Type, 7 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R14) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R16) bus termination

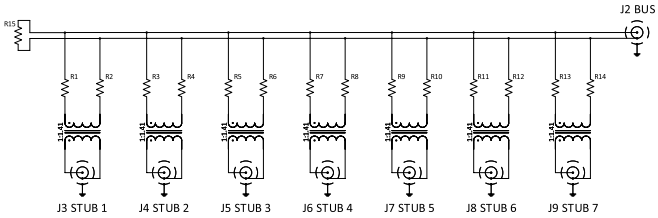




DE8227

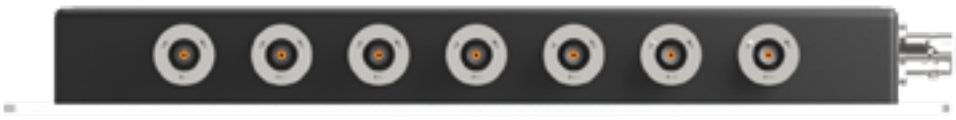
MIL-STD-1553 Bus Coupler

Box Type, 7 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R14) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R15) bus termination

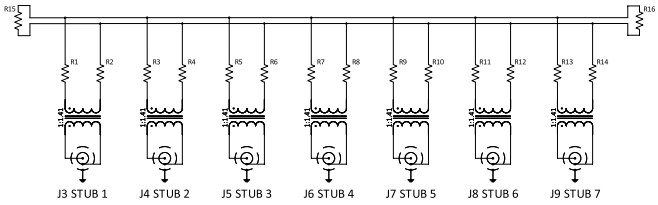




DE8237

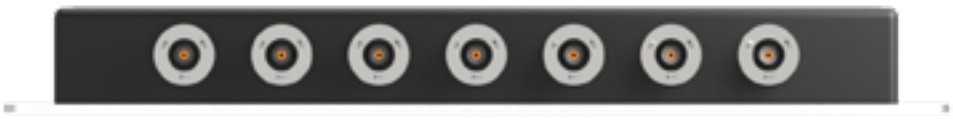
MIL-STD-1553 Bus Coupler

Box Type, 7 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R14) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R15, R16) bus termination

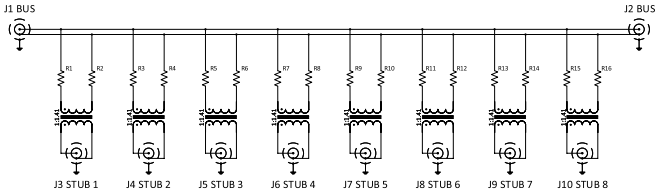




DE8208

MIL-STD-1553 Bus Coupler

Box Type, 8 Stub



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R16) in series with transformer winding on bus side	Not terminated

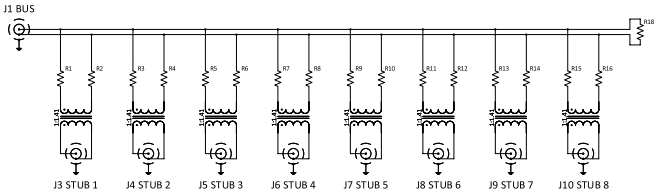




DE8218

MIL-STD-1553 Bus Coupler

Box Type, 8 Stub, RTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R16) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R18) bus termination

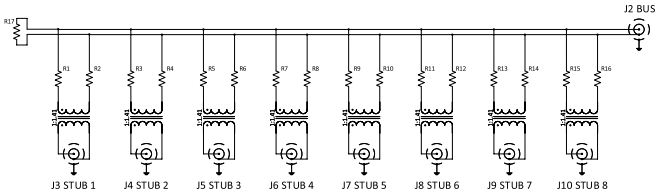




DE8228

MIL-STD-1553 Bus Coupler

Box Type, 8 Stub, LTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R16) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R17) bus termination

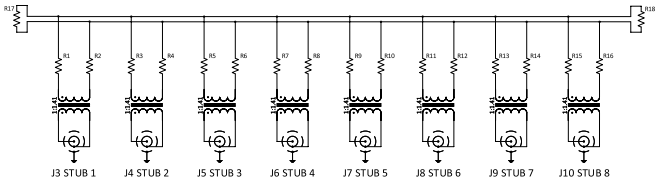




DE8238

MIL-STD-1553 Bus Coupler

Box Type, 8 Stub, DTRM



Characteristic Impedance	Fault Protection	Termination Resistor Value
Z_0=78 Ohms	59 Ohms ±1% 1 W (R1-R16) in series with transformer winding on bus side	78.7 Ohms ±1% 2 W (R17, R18) bus termination





5. Recommended Accessories

The following accessories are available separately and are recommended for use with box type bus couplers.

Table 8: Recommended Accessories Table

Product Image	Product Code	Description
	**DE8701**	Connector, TRB, male, 500 MHz M17/176-00002 compatible, free hanging (in-line) solder
	**DE8702**	Connector, TRB, male, 500 MHz M17/176-00002 compatible, free hanging (in-line) solder, bend relief
	**DE8801**	Twinax cable, 24 AWG, 77 Ω shielded PFA cable, blue
	**DE8501**	RFI dust cap
	**DE8502**	RFI dust cap, 3 Inch, chained
	**DE8503**	RFI dust cap, 6 Inch, chained
	**DE8601**	Connector, male, 3000 Ω TRB stub termination
	**DE8602**	Connector, male, 3000 Ω TRB stub termination, 3 Inch, chained
	**DE8603**	Connector, male, 3000 Ω TRB stub termination, 6 Inch, chained
	**DE8604**	Connector, male, 78 Ω TRB bus termination
	**DE8605**	Connector, male, 78 Ω TRB bus termination, 3 Inch, chained
	**DE8606**	Connector, male, 78 Ω TRB bus termination, 6 Inch, chained
	**DE8607**	Connector, male, 2 W, 78 Ω TRB bus termination, 3 Inch, chained
	**DE8608**	Connector, male, 2 W, 3000 Ω TRB stub termination, 3 Inch, chained
	-	Custom Cable Assembly