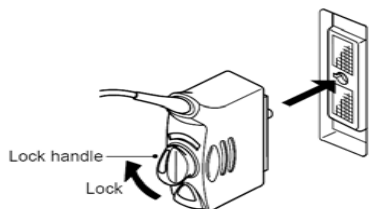




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ULT-2000 Series

Ultrasound Transducer Electrical Leakage Testers

Ultrasound Transducer Adapter Cross Reference

BC Part # (New) (Old) (JPC #)	Dale Technology Equivalent	Fluke Biomedical Equivalent	Manufacturer	Transducer Compatibility * (See notes below)	Ultrasound Platform	Connector Key	Connector Description
ULT-PA-10 BC20-42111 7331PA10	600/MP	2392591	Siemens/Acuson	V5M (TEE), V7M (TEE), EV8-C4, etc. ⁽¹⁾	Sequoia	E	Micro-pinless (PC board)
ULT-PA-11 BC20-42110 7331PA11	N/A (Not Available)	2540999	SonoSite	ICT7-4, ITC8-5, C60, etc. ^(1,2)	180/180+, Titan	D	Micro-pinless (PC board)
ULT-PA-12 ⁽¹²⁾ BC20-42112 7331PA12	600/260 ⁽¹²⁾	2392578 ⁽¹²⁾	Siemens	6.5EV13, EC9-4, etc.		A	260-pin ITT Cannon ZIF
ULT-PA-13 BC20-42113 7331PA13	600/156 ⁽¹⁴⁾	2392430 ⁽¹⁴⁾	Siemens/Acuson	Acuson/Siemens 156-pin and V510B Transducers, and ATL UM4, UM9 and ATL 5MHz Bi Plane ⁽⁶⁾	128XP	C	156-pin ITT Cannon ZIF
ULT-PA-14 ⁽¹²⁾ BC20-42114 7331PA14	600/210 ⁽¹²⁾	2392482 ⁽¹²⁾	Philips/ATL	HP/Agilent/Philips 21311A, 21369A, 21378A, 21381A Transducers	Philips/HP 4500, Sonos 5500/7500	A	260-pin ITT Cannon ZIF
ULT-PA-15 ⁽¹²⁾ BC20-42115 7331PA15	600/205 ⁽¹²⁾	2231602 ⁽¹²⁾	GE	GE LogiQ (for use with GE LogiQ and GE P9603AU Transducers), 6T (TEE), 9T (TEE), E8C, etc. ⁽⁸⁾ <small>(Similar to ULT-PA-16 except that this adapter has a deep "throat" or shroud 1.80"L x 4.7"D x 1.22"D)</small>	LOGIQ	A	260-pin ITT Cannon ZIF
ULT-PA-16 ⁽¹²⁾ BC20-42116 7331PA16	600/204 ⁽¹²⁾	2392475 ⁽¹²⁾	GE	GE LogiQ (for use with GE LogiQ Transducers 3, 5, 7, 9 and GE Vivid Transducers 3, 5, 7, 6T, 9T) ⁽⁸⁾ <small>(Similar to ULT-PA-15 except this adapter lacks the deep "throat" or shroud of the ULT-PA-15) This is the most common configuration of the two similar adapters.</small>	LOGIQ, Vivid & GE P9603AU	A	260-pin ITT Cannon ZIF
ULT-PA-17 ⁽¹²⁾ BC20-42117 7331PA17	N/A (Not Available)	2649837 ⁽¹²⁾	Philips/ATL	Philips iE33 and iU22 diagnostic ultrasound TEE transducers - S7-2 (TEE), S7-3t (TEE), S3-1, C8-4v, C9- 5, etc. ⁽³⁾ with belled housing	iE33/iU22	A	260-pin ITT Cannon ZIF

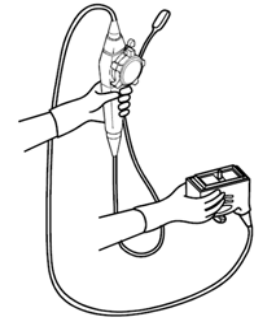
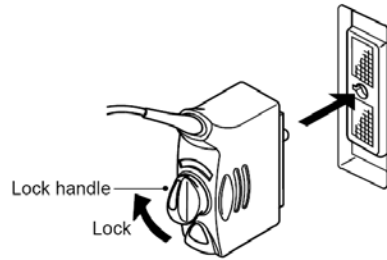
ULT-PA-18 BC20-42118 7331PA18	600/211	2392494	Philips/HP	HP/Agilent/Philips (no center post on transducer connector) 21202A, 21364A, 21365A, 21366A, 21367A Transducers	TBD	F	Micro-pinless (PC board)
ULT-PA-19 BC20-42119 7331PA19	N/A (Not Available)	N/A (Not Available)	Philips	All Philips CX50 Laptop System based transducers ⁽¹⁰⁾	CX50 Platform	G	260-pin Tyco Electronics Mini Connector
ULT-PA-20 BC20-42120 7331PA20	600/213 ⁽¹⁴⁾	2392516 ⁽¹⁴⁾	Acuson/Toshiba	Acuson/Toshiba (for use with Acuson/Siemens XP, Aspen, Capasee, 3-Needle Guide C3 Transducers; ATL 3.5 DFT Transducers; Toshiba PSF-37HT and F Series Transducers) ⁽⁶⁾	Toshiba PVF Series, 2B701-753E, etc.	C	156-pin ZIF
ULT-PA-21 ⁽¹²⁾ BC20-42121 7331PA21	600/216 ⁽¹²⁾	2392540 ⁽¹²⁾	Hitachi	HI VISION 900, 5500, 6500, 8500, EUB-2000, EUB-525, EUB-405 Plus ⁽⁴⁾	EUP-ES52M, EUP-Series Probes in general	A	260-pin ITT Cannon ZIF
ULT-PA-22 ⁽¹²⁾ N/A 7331PA22	600/216A ⁽¹²⁾	3083161 ⁽¹²⁾	Ultraschallkopf - Aloka	UST-934N/9395, UST-945BP/945BP, ASU-32-3-M, ASU-32-WSJ, UST-556/5512, UST-5514DTU ⁽⁴⁾	SSD-620, SSD-650	A	260-pin ITT Cannon ZIF
ULT-PA-23 (N/A) TBD	600/206	2231616	ALL	ALL Transducers ⁽⁷⁾	All Platforms	ALL	ALL Configurations
ULT-PA-24 ⁽¹²⁾ (N/A) TBD	600/218 ⁽¹²⁾	2392557 ⁽¹²⁾	Philips/ATL	L7-4 and similar 260-pin transducers with belled housing ⁽⁵⁾	TBD	A	260-pin ITT Cannon ZIF
ULT-PA-25 (N/A) TBD	N/A (Not Available)	N/A (Not Available)	GE	GE LogiqBook Probes - GE VIVID I 6T, 9T, etc. Probes ⁽¹⁰⁾	Vivid	G	260-pin Tyco Electronics Mini Connector
ULT-PA-26 (N/A) TBD	600/360 ⁽¹³⁾	2231811 ⁽¹³⁾	Acuson	For use with Acuson/Siemens 360-pin Transducers	Antares	B	360-pin ITT Canon ZIF
ULT-PA-27 (N/A) TBD	600/202	2392453	GE	GE YMS/RT (for use with GE YMS/RT Transducers)	TBD	TBD	TDB
ULT-PA-28 (N/A) TBD	600/203	2392466	GE	GE/CGR (for use with GE/CGR Radius and GE SONO Transducers)	TBD	TBD	TBD
ULT-PA-29 (N/A) TBD	N/A (Not Available)	N/A (Not Available)	Zonare	Zonare Medical Systems (all transducers) ⁽⁹⁾	All Zonare Platforms	H	168-pin Proprietary Custom Connector

Transducer & Adapter Notes

- (1) All transducers in this series are of the “micro-pinless” design and have a flat face that is essentially a PC board rather than an ITT Cannon style multi-pin connector.
- (2) All Sonosite transducers have the same type of “micro-pinless” connector.
- (3) Transducers that fit this adapter have a distinctive bell-shaped connector housing. There are two plastic tabs along the long axis of the 260-pin ITT Cannon ZIF connector, one on each side of the connector and offset from each other. The adapter itself has a composite center mounting post connector that is not electrically connected to the conductive pin surface. There are also two metal tabs at the extreme end of the connector that facilitate electrical connection with the metal belled housing of the transducer. The conductive pads of the adapter are spring loaded and have movement capability from the center of the adapter outward to match the 260-pin ZIF transducer connector pin bank movement.
- (4) Transducer adapters ULT-PA-21 & ULT-PA-22 are physically the same.
- (5) These transducers have a belled shaped housing very similar to the transducers that fit the ULT-PA-17 adapter, but do not have the plastic tabs along the long axis of the 260-pin ZIP ITT Cannon connector. The ULT-PA-17 adapter has a metal center mounting post sleeve that is electrically connected to the conductive pin surface. Transducer adapters ULT-PA-17 and ULT-PA-24 are very similar but are not interchangeable for testing purposes.
- (6) Transducer adapters ULT-PA-13 and ULT-PA-20 are similar with the exception that the ULT-PA-13 has an outer “frame” that encloses the transducer electrical connector. The ULT-PA-20 does not have this feature. Also, the seating depth of these two adapters is slightly different (top surface of center mounting post sleeve vs: the conductive surface of the test pads).
- (7) This Universal Conductive Surface Probe is intended to work with all transducer types by all manufacturers for fast and efficient spot checking of transducers. The probe is used in place of a specific transducer adapter and is placed in contact with various pins, electrical connector housing, the center mounting post, etc. on the transducer electrical connector.
- (8) The ULT-PA-15 and ULT-PA-16 adapters are functionally identical. The ULT-PA-15 has a deep “throat” or shroud 1.80”L x 4.7”D x 1.22”D while the ULT-PA-14 has a lower profile. The ULT-PA-16 is the more common of the two adapters
- (9) All Zonare Medical Systems transducers utilize this same type of proprietary custom 168-pin electrical connector.
- (10) GE LogiqBook Laptop type system transducers and Philips CX50 Laptop type system transducers utilize the same type of Tyco Electronics miniaturized 260-pin electrical connector.
- (11) A “N/A” in the “Dale Technology Equivalent” or “Fluke Biomedical Equivalent” columns above indicates that a transducer adapter for this manufacturer / type of transducer is not commercially available from this manufacturer.
- (12) The BC Biomedical transducer adapter for this type of transducer utilizes an actual ITT Cannon 260-pin electrical connector, much like the actual connector in the ultrasound machine by this manufacturer. Competitive brand adapters utilize a simple conductive rubber pad as the electrical/mechanical mating surface for the pins in the transducer. The utilization of the ITT Cannon connector allows electrical contact with the pins of the BC Biomedical adapter without any side torque force being placed upon the pins beyond the normal levels achieved when the ultrasound transducer is actually connected to the ultrasound machine. Adapters with simple rubber conductive pads tend to subject the pins of the transducer electrical connector to excessive side torque and may actually bend or weaken individual pins within the connector. Damage of this type has been reported by several ultrasound device manufacturers. Ultrasound machine manufacturers do not recommend using these types of adapters for this reason. Any damage caused to transducer electrical connector pins by such applied excessive side torque is subject to exclusion of the manufacturer’s standard warranty for the transducer.
- (13) The BC Biomedical transducer adapter for this type of transducer utilizes an actual ITT Cannon 360-pin electrical connector, much like the actual connector in the ultrasound machine by this manufacturer. Competitive brand adapters utilize a simple conductive rubber pad as the electrical/mechanical mating surface for the pins in the transducer. The utilization of the ITT Cannon connector allows electrical contact with the pins of the BC Biomedical adapter without any side torque force being placed upon the pins beyond the normal levels achieved when the ultrasound transducer is actually connected to the ultrasound machine. Adapters with simple rubber conductive pads tend to subject the pins of the transducer electrical connector to excessive side torque and may actually bend or weaken individual pins within the connector. Damage of this type has been reported by several ultrasound device manufacturers. Ultrasound machine manufacturers do not recommend using these types of adapters for this reason. Any damage caused to transducer electrical connector pins by such applied excessive side torque is subject to exclusion of the manufacturer’s standard warranty for the transducer.
- (14) The BC Biomedical transducer adapter for this type of transducer utilizes an actual ITT Cannon 156-pin electrical connector, much like the actual connector in the ultrasound machine by this manufacturer. Competitive brand adapters utilize a simple conductive rubber pad as the electrical/mechanical mating surface for the pins in the transducer. The utilization of the ITT Cannon connector allows electrical contact with the pins of the BC Biomedical adapter without any side torque force being placed upon the pins

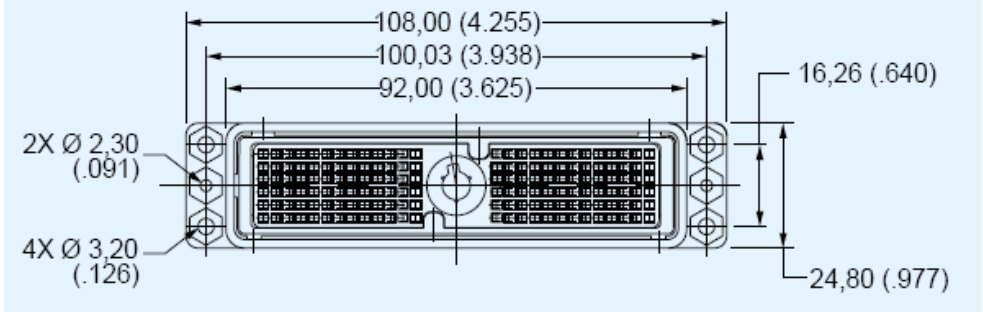
beyond the normal levels achieved when the ultrasound transducer is actually connected to the ultrasound machine. Adapters with simple rubber conductive pads tend to subject the pins of the transducer electrical connector to excessive side torque and may actually bend or weaken individual pins within the connector. Damage of this type has been reported by several ultrasound device manufacturers. Ultrasound machine manufacturers do not recommend using these types of adapters for this reason. Any damage caused to transducer electrical connector pins by such applied excessive side torque is subject to exclusion of the manufacturer's standard warranty for the transducer

Transducer Electrical Connector Key

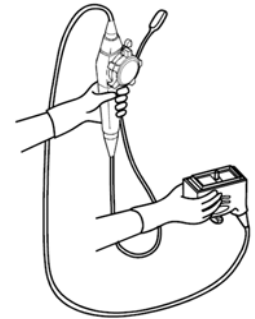
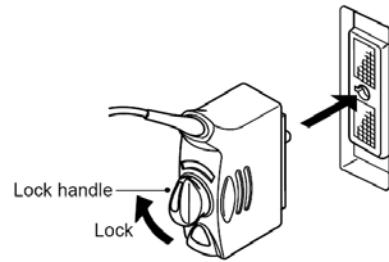


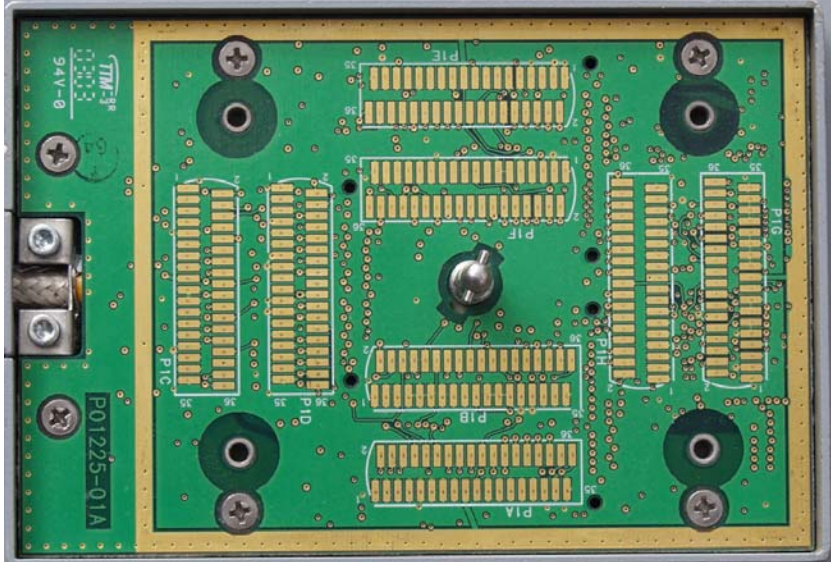
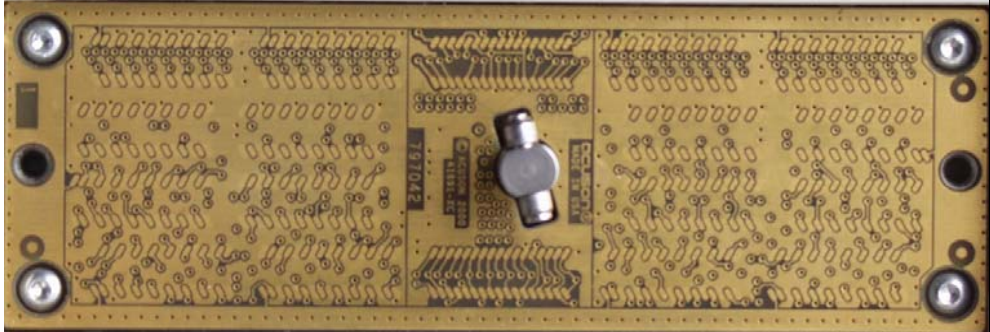
Connector Key	Description of Transducer Electrical Connector	Transducer Electrical Connector Diagram
<p>A</p>	<p>ITT Cannon DL/DLM5-260 ZIF Connector (260 pins total in two banks of 10 x 13 pins)¹ (See page 252 of ITT Cannon Reference Document)</p>	<p>108,00 (4.255) 100,03 (3.938) 26,00 (1.024) 35,00 (1.378) 4X Ø 3,20 (.126)</p>
<p>B</p>	<p>ITT Cannon DLM-360 ZIF Connector (360 pins total in two banks of 12 x 15 pins)¹ (See page 253 of ITT Cannon Reference Document)</p>	<p>125,00 (4.921) 115,00 (4.528) 29,00 (1.142) 42,60 (1.677) 4X Ø 3,20 (.126)</p>

¹ Refer to ITT Cannon DL/DLD/DLM reference document PDF named "ittCannonCSG_247-254.pdf". Download this document at this link: http://www.pei-genesis.com/pdfs/ittCannon/csg/ittCannonCSG_247-254.pdf. You can also view the ITT Cannon connector reference PDF at the link http://www.ittcannon.com/uploadedFiles/Product_PDFs/DL_DLM_Catalog.pdf.

<p>C</p>	<p>ITT Cannon DLD1-156 ZIF Connector (156 pins total in two banks of 6 x 13 pins)¹ (See page 250 of ITT Cannon Reference Document)</p>	 <p>Technical drawing of the ITT Cannon DLD1-156 ZIF Connector showing dimensions in millimeters and inches:</p> <ul style="list-style-type: none"> Overall length: 108,00 (4.255) Length to center of connector: 100,03 (3.938) Length to end of connector: 92,00 (3.625) Pin diameter: 2X Ø 2,30 (.091) Mounting hole diameter: 4X Ø 3,20 (.126) Height of connector: 16,26 (.640) Height of mounting holes: 24,80 (.977)
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Transducer Electrical Connector Key



<p>D</p>	<p>PC Circuit Board Blank (Micro-pinless design)² This configuration is specific to Sonosite and is common to all Sonosite transducers.</p>	
<p>E</p>	<p>PC Circuit Board Blank (Micro-pinless design)³ This configuration is specific to certain Siemens Medical Solutions transducers.</p>	

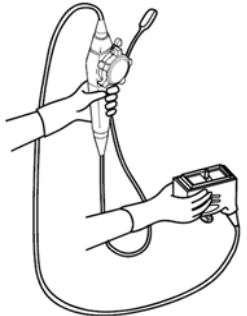
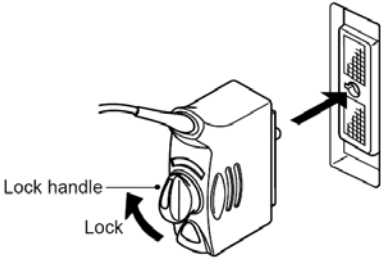
² All SonoSite transducers have this same type of electrical connector. There are no pins in this style of connector. It is a simple PC board surface.

³ There are no pins in this style of connector. It is a simple PC board surface.

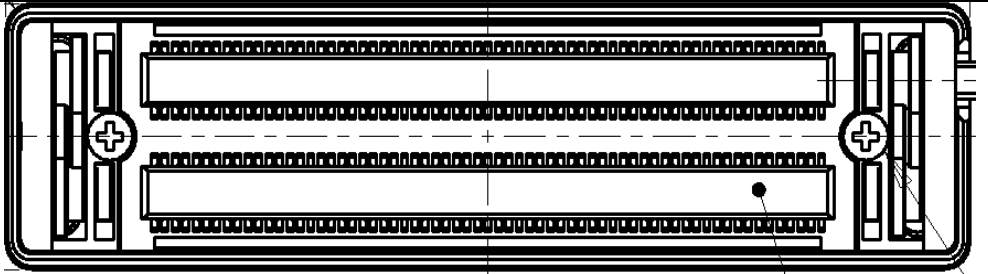
F Six banks of 24 pins each – only 5 banks are populated with pins
 120 total pins in connector
 No Center Mounting Post
 This configuration is specific to certain Philips/Agilent/HP transducers.

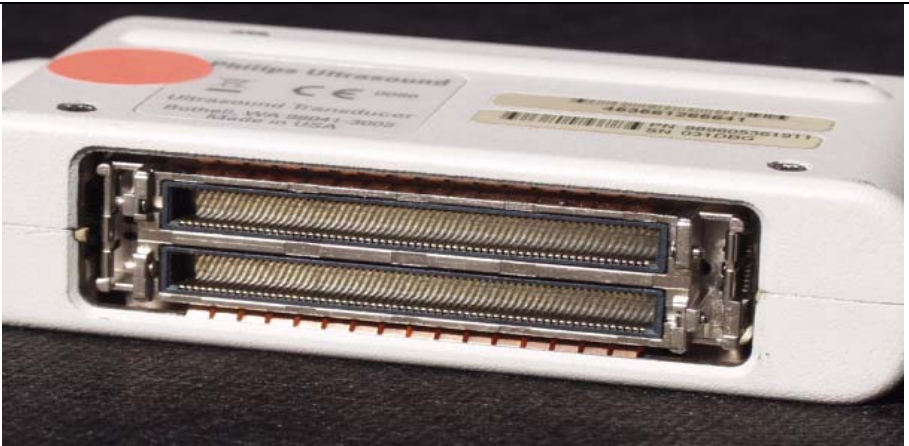
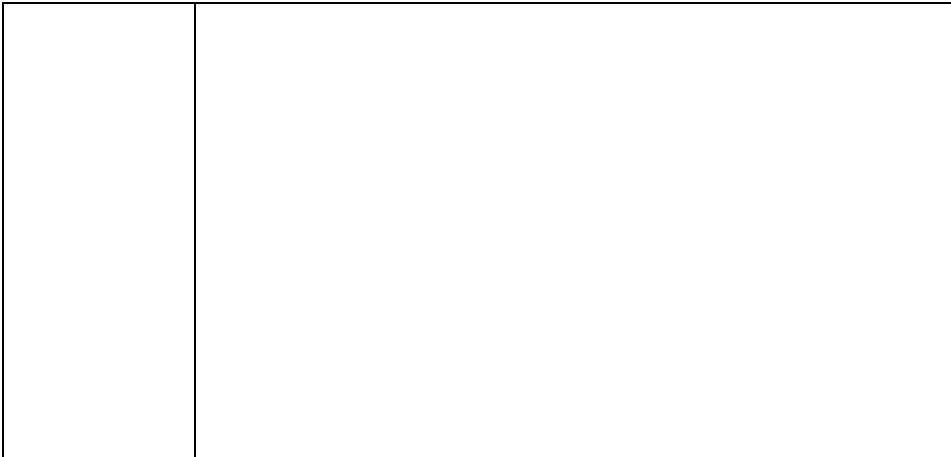


Transducer Electrical Connector Key



G Four rows of pins in two separate banks totaling 260 pins in a miniaturized connector. This Tyco Electronics miniaturized connector is specific to Laptop type ultrasound systems as available from GE (LogiqBook platform) and Philips Medical (CX50 platform). A Philips Medical CX50 platform transducer connector is shown to the right.





H

Four banks of pins, 21 pins per side of each bank, 42 pins per bank, 168 total pins in the connector. This proprietary custom connector is specific to Zonare Medical Systems and is common to all Zonare Medical Systems transducers. The mating connector on the ultrasound machine is a flat PC board surface.

