



Component Continuity Test Worksheet

Customer Name: _____

Date: _____

This test reveals several important things about the grounding strategy best suited for your system. This must be completed to safely order and install an ALTAIRA grounding system. You will need an Ohm Meter set at the most sensitive setting. Before testing continuity through your chassis, please cross the leads and record the reading. This will set your baseline. More than a 1 ohm variance from that baseline reading during testing will result in an unusable ground connection.

Component	A	B	C	ANALOG GROUND TAIL CONNECTORS			DIGITAL GROUND TAIL CONNECTORS		
	Does this component have a dedicated Ground terminal? <i>(lug, screw, etc)</i>	Does this component have a ground pin in the IEC inlet?	Measurement: Inlet Ground Pin to Chassis Screw test <1 ohm = YES	Measurement: Inlet Ground Pin to unused RCA and XLR <1 ohm = YES >1 ohm = NO			Measurement: Inlet Ground Pin to BNC, S/PDIF, AES/EBU, Ethernet and USB <1 ohm = YES >1 ohm = NO		
	NO (continue) <input type="checkbox"/> YES <input type="checkbox"/> ↓ Use Ground Terminal	YES (continue) <input type="checkbox"/> NO <input type="checkbox"/> ↓ DO NOT Ground Component	NO (continue) <input type="checkbox"/> YES <input type="checkbox"/> ↓ Use Chassis Screw	YES <input type="checkbox"/> RCA NO <input type="checkbox"/> YES <input type="checkbox"/> XLR-M NO <input type="checkbox"/> YES <input type="checkbox"/> XLR-F NO <input type="checkbox"/>	YES <input type="checkbox"/> BNC NO <input type="checkbox"/> YES <input type="checkbox"/> S/PDIF NO <input type="checkbox"/> YES <input type="checkbox"/> AES/EBU NO <input type="checkbox"/> YES <input type="checkbox"/> Ethernet NO <input type="checkbox"/> YES <input type="checkbox"/> USB-A NO <input type="checkbox"/> YES <input type="checkbox"/> USB-B NO <input type="checkbox"/>				
	NO (continue) <input type="checkbox"/> YES <input type="checkbox"/> ↓ Use Ground Terminal	YES (continue) <input type="checkbox"/> NO <input type="checkbox"/> ↓ DO NOT Ground Component	NO (continue) <input type="checkbox"/> YES <input type="checkbox"/> ↓ Use Chassis Screw	YES <input type="checkbox"/> RCA NO <input type="checkbox"/> YES <input type="checkbox"/> XLR-M NO <input type="checkbox"/> YES <input type="checkbox"/> XLR-F NO <input type="checkbox"/>	YES <input type="checkbox"/> BNC NO <input type="checkbox"/> YES <input type="checkbox"/> S/PDIF NO <input type="checkbox"/> YES <input type="checkbox"/> AES/EBU NO <input type="checkbox"/> YES <input type="checkbox"/> Ethernet NO <input type="checkbox"/> YES <input type="checkbox"/> USB-A NO <input type="checkbox"/> YES <input type="checkbox"/> USB-B NO <input type="checkbox"/>				
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This decision matrix needs to be applied to each component in the system.

Ideally, every component in the system should be connected to an ALTAIRA grounding hub. If every component manufacturer put a dedicated chassis ground terminal on the product, this would be simple. You would simply connect a CGC ground cable from the Altaira to the component's ground terminal. This would effectively make a low impedance connection from the ALTAIRA to the component's chassis.







Unfortunately, many audio components and most computer or digital devices do not have chassis ground terminals. Therefore, alternate methods of connection may be necessary. The *Component Continuity Tests* allows you to determine the best method to connect each component to an ALTAIRA.

There are basically three possible methods. The first method is the aforementioned dedicated chassis ground terminal. If a component has a terminal then there is no need to do any of the Continuity Tests.

The second method is to locate a chassis screw on the component that has continuity to the component's electrical ground. An ohm meter is used to measure the resistance from the IEC inlet's ground pin and selected chassis screws. If a screw measures less than 1 ohm in resistance, then this screw can be used to connect one end of the grounding cable by using a very small, thin spade that slips under the screw.

The third and last method should be used if method one and two are not possible or impractical. Many signal connectors such as an RCA or XLR connector have a direct electrical connection to the component's chassis. An ohm meter is used to measure from the AC inlet ground pin to the signal connector's ground pin or barrel. If the reading is less than 1 ohm, that means you can use an unused connector as a chassis ground connection for that specific component.

Notes: Only test and loosen chassis screws that are around the perimeter of the chassis case. DO NOT loosed any screws that are inside the perimeter of the bottom or base plate. DO NOT loosen any screws that may hold internal parts in place.

COLUMN A	COLUMN B	COLUMN C	ANALOG & DIGITAL CONNECTORS
Does this component have a dedicated Ground terminal? <i>(lug, screw, etc)</i>	Does this component have a ground pin in the IEC inlet?	Use the ohm meter. Measure from AC inlet ground pin to various chassis screws that hold the bottom or back plate on.	Use ohm meter. Test between the AC inlet ground pin and each of the signal connector's ground pin or barrel.
RESULT YES:  This means that no further tests are required. ACTION: Simply connect a CGC ground cable to the component's ground terminal.	RESULT YES:  This means that the component can be tested with an ohm meter to determine if there is continuity between the AC inlet ground pin and the chassis. ACTION: Proceed to the next step.	RESULT YES:  Less than 1 ohm indicates a physical connection between the AC ground and the component's chassis. Select one of the chassis screws that has the lowest reading. ACTION: Use a CGC ground cable with the small STIS spade (4-6 mm). Slightly loosen the selected screw and slip the spade under the screw and tighten (finger-tight). Be sure to retest with the ohm meter to ensure that the reading between the AC ground pin and the ground wire is less than 1 ohm.	RESULT: Less than 1 ohm means this connector MAY be used as a "chassis ground" connection. If the reading is greater than 1 ohm, the connector cannot be used to connect a ground cable. Note: Shunyata Research makes adapters called Ground Tails specifically designed to connect to various connector types: RCA, XLR, BNC, USB, Ethernet.
RESULT NO:  Further tests are needed to determine the best method to connect this component. ACTION: Continue to the next step.	RESULT NO:  If a manufacturer chose to use an AC inlet that has NO ground pin, that means that they DO NOT want the component grounded to the AC earth ground system. ACTION: DO NOT ground this specific component.	RESULT NO:  The reading is above 1 ohm. This screw cannot be used as a ground connection point. ACTION: Proceed to the next test.	