

Field Alert #067 Proper Board Handling

This Field Alert details the proper installation and handling instructions for AltiGen Telephony Boards. It also serves as a reminder that AltiGen Telephony boards, like all electronic boards and components, are fragile and require care in handling and installation, and are susceptible to Electro Static Discharge (ESD).

AltiServ Office Systems Reliability vs. Field installed boards AltiGen's Flagship product line of turnkey AltiServ Systems experienced a remarkably low failure rate of less than seven tenths of one percent (.0069 %) on the boards shipped in the AltiServ Office systems. AltiGen has documented that subsequent AltiGen telephony boards that are field installed into the same AltiServ Office Systems by authorized reseller technicians experience measurably higher failure rates. This is an indication that proper board handling in the install/configuration stage can improve the reliability of your installations.

Proper Handling

To ensure proper operation and long life, AltiGen's system boards must be handled in a delicate matter. Please keep the following in mind during installation and handling.

Always wear an ESD wrist and/or foot strap while handling boards.

Do not handle any board without proper ESD protection in place

Some boards have very sensitive ceramics that contain imbedded traces. These traces are very close to the edge of the component and are easily chipped if they are hit against a hard object.

Do not touch any component or the solder side of a board – (Handle boards only by the edges).

Do not stack the boards on top of each other.

Do not take boards out of the supplied box and ESD protective bag until ready for installation and always return the defective boards to AltiGen Repair Services in their ESD protective bag(s).

Do not touch gold PCI/ISA connection fingers on boards.

Do not install a board into a slot that will cause the board to be bent during installation or operation.

Never connect the power supply connector to a Triton Analog Station Board after the server has been powered on.

Never install a board while the server power is on.

Do not ship boards in a system unless boards are properly secured.

Servers must be Grounded - Always follow proper System Grounding Procedures

Board Installation and MVIP testing

Always install boards and attach MVIP and power cables prior to powering server on. Failure to do so will result in damage to the board. When removing or connecting the MVIP cable, do so with a slow vertical motion. Be careful to make sure pins in the MVIP connector on the board line up with the sockets on the MVIP cable. Failure to do so may result in pins being bent or pushed down toward the bottom of the MVIP connector on the board. The MVIP test will detect these errors.

Electro Static Discharge (ESD)

Electro Static Discharge is an unbalanced electrical charge at rest (Static Electricity). Typically, it is created by insulator surfaces rubbing together or pulling apart. One surface gains electrons, while the other surface loses electrons. This results in an unbalanced electrical condition known as static charge. When a static charge moves from one surface to another, it becomes ESD. ESD is a miniature lightning bolt of charge that moves between two surfaces that have different potentials. It can occur only when the voltage differential between the two surfaces is sufficiently high to break down the dielectric strength of the medium separating the two surfaces. When a static charge moves, it becomes a current that damages or destroys gate oxide, metallization, and junctions. ESD can occur in any one of four ways: a charged body can touch an component, a charged component can touch a grounded surface, a charged machine can touch an component, or an electrostatic field can induce a voltage across a dielectric sufficient to break it down.

Please use the following steps as a basic safety precaution to guard against ESD.

Because ESD can occur only when different potentials are involved, the best way to avoid ESD damage is to keep AltiGen's boards at the same potential as their surroundings. The logical reference potential is ESD ground. So, the first and most important rule in avoiding ESD damage is to keep AltiGen's boards and everything that comes in close proximity to them at ESD ground potential. Four supplementary rules support this first rule:

- Any person handling AltiGen's boards must be grounded either with a wrist strap or ESD protective footwear, used in conjunction with a conductive or static-dissipative floor or floor mat.
- The work surface where devices are placed for handling, processing, testing, etc., must be made of static-dissipative material and be grounded to ESD ground.

- When Altigen's boards are being stored, transferred between operations or workstations, or shipped, they must be maintained in a Faraday-shield container whose inside surface is static dissipative (Static bags).

Packaging for Shipment and Storage Altigen Telephony boards are packaged and shipped individually in fully closed static-shielding bags. The pink anti-static foam should be used only as cushioning material; it is not static-dissipative and cannot discharge the boards. Always save and use the original packaging materials (pink foam and cardboard box) to transport the boards. Altigen Telephony boards are protected by their anti-static bags and must remain in that packaging until removed by a properly grounded technician.

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