<u>**AltiGen KB**</u>

General Board Troubleshooting

Introduction:

While most board related issues can be avoided simply by following the Quick Install Guide when installing new boards, you may occasionally need to troubleshoot bus or board related issues in the field. This document covers checking for proper board installation (termination, board IDs, CT-Bus, board order), and how to use software tools (CT-Bus Test Tool and the AltiGen Board Test Tool) to identify issues with Triton, Quantum and MAX Expansion boards. Common symptoms of improper board configuration include: Duplicate or missing boards in the AltiAdmin Board View, crosstalk, static/noise and CT-Bus test failures.

Board type specific troubleshooting guides:

T1/PRI Troubleshooting Guide

Extension Board Troubleshooting Guide

Trunk Board Troubleshooting Guide

VoIP Board Troubleshooting Guide

Spares and Testing Equipment:

In order to reduce your client's downtime and accurately diagnose and correct any issues, it is imperative that you stock appropriate spares and always bring your telecom tools with you when troubleshooting any board or hardware related issue.

Spares: Stocking spare parts greatly speeds up problem isolation and always makes clients happy. Having a spare part can mean the difference between a minor inconvenience and a critical issue.

Basic telecom tools to bring: Butt set, toner set, cross connect wire, harmonica, punchdown tool, RJ21-X (sometimes called amphenol) cable, banjo adapter, snips, RJ11 and RJ45 crimper, CT-BUS cable and a spare Triton power cable. Some basic hand tools like screwdrivers, pliers and a flashlight are also recommended.

Termination:

1. Both ends of the bus are terminated: both dip switches towards the board.

2. Rest of the bus is not terminated: both dip switches away from the board.

3. If in doubt, toggle both switches away from their starting position and back again

4. The CT-BUs test will alert if board termination is incorrect (the accuracy increases with the number of boards.

5. This does not apply to the MAX chassis as it does not have a bus cable.

Board ID's:

1. Do not duplicate board IDs on the same type of boards.

2. Make sure the board IDs are set correctly. Start at 0, then count the clicks; don't rely on the visual indicator.

3. Quantum boards must stat at 1, not 0. Quantum boards are all considered to be the same type.

4. Again, this does not apply to the MAX chassis.

CT-Bus Cable:

1. Make sure the cable is not damaged, look for cracks on the cable, damaged connections and bent pins on the boards.

2. Leave a minimum of three empty connectors on each side of the bus. If you have more empty connectors, evenly distribute them on each side of the bus.

3. Replace the cable anytime you are in doubt as to the integrity of the cable or if the CT-BUS test return errors and the boards are installed properly.

4. When replacing the cable, be gentle, never force the cable! Using too much force can damage the cable and/or the boards.

5. This does not apply to the MAX chassis.

Board Order:

1. Board order is very important. The moar boards installed in the system, the more critical board order becomes. Always check the Quick Install Guide to make sure your board order is correct.

2. The "quick and dirty" is the following order, going from left to right when looking at the back of the server: T1, VoIP, Resource, MeetMe, Triton Trunk, Triton Extension, Quantum.

3. Always wear an ESD wrist strap when installing boards!

4. Board order does not apply to the MAX1000 (but don't forget your ESD wrist strap when handling MAX boards).

Board Revisions:

1. Check all boards before upgrade or new installation to ensure compatibility.

2. Quantum: Confirm revision D10 or above (S/N on board: 047D124803500).

Note: Quantum Boards and 4-port Triton VoIP boards are not supported as of version 6.0 and above.

3. Triton T1/E1/PRI: All revisions (S/N on board or via AltiAdmin: 608A2TE1S2775 note the TE1)
4. Triton T1/PRI: Revision A3 and above (S/N on board or via AltiAdmin: 124A5TT1S1752)
5. Triton VoIP: Revision A3 and above (S/N on board or via AltiAdmin: 728A6T8PT7341)
6. Triton 12x0, 0x12: Revision A3 and above (S/N on board or via AltiAdmin: 626A6T12T1852)
7. Triton 8x0: All revisions
8. Triton MeetMe: All revisions
9. Triton 0x12 Rev. B: All revisions (S/N on board or via AltiAdmin: 732C4T12E1993 the C indicates Rev. B)
10. Triton Resource: Revision A3 and above (S/N on board or via AltiAdmin: 728A6TDSP1397)

The AltiGen Board Test Tool:
1. Utilization: board memory/DSP/load testing.
2. Purpose: to identify individual faulty boards.
3. Run multiple passes when troubleshooting.
4. Services must be stopped prior to running the tool.
5. On 5.1/5.2 systems, the tool can be run from Start -> Programs -> AltiWare -> Gateway Tools -> AltiGen Board Test.
6. The AltiGen Board Test tool can test any Triton or MAX1000 board, it cannot test Quantum Boards.

CT-Bus Test Tool:

1. Utilization: bus/memory/board interoperability testing on Triton and Quantum boards.

2. Purpose: to find termination/cable/board order problems.

3. Run multiple passes when troubleshooting.

4. Services must be stopped prior to running the tool.

4. The tool can be run from Start -> Programs -> AltiWare/MAX Communications Server -> Gateway Tools -> CT-Bus Test Tool.

5. Not used to test MAX chassis access boards.

MAX Board Troubleshooting:

1. Check board status LEDs against the Telephony Hardware Manual.

2. Reseat access boards (Boards are NOT hot swappable! Shut down the system before removing/installing any boards).

3. If the problem only occurs on one board, swap board positions to rule out a connector issue.

4. Run multiple passes of the AltiGen Board Test Tool.

5. Remember - the CT-Bus Test Tool cannot test MAX Boards, it will always fail when run on a MAX system.