

Technical Bulletin 99-02



Bulletin #: CS-99-002

Product Type: Link 3000

Software Version: None

Hardware Revision: None

Access Level: Reseller

Originator: Matt Jerger

Status: Approved

Approvers: John Elms, Gary Bliss

Date: March 18, 1999

Title: Reduced Spectrum and Offset Selection.

Description: When choosing a Reduced Spectrum Option on a Link 3000 system, the Base Station offsets must be changed accordingly. Symptoms of interfering offsets may include cutting out, poor audio, and bad handoffs.

Changing from a Full spectrum to a Reduced Spectrum:

When changing from the full spectrum to a reduced spectrum, the operator must change the Base Station offsets so that they are within the first 25 available. Any Base Stations with an offset greater than 25 must be changed.

To change the offset, use the F4 screen in chk3000. Select a Base Station with an offset greater than 25. Edit the Base Station and change to offset (use the right arrow key to choose the offset). To choose the correct offset, subtract 25 from the existing offset number. This will be the new offset for that Base Station. For example, if the offset is 28, the new offset will be 03. Repeat this process for all Base Stations with an offset greater than 25. The Base Station Offset Reuse must be checked at this time.

Checking the Offset Reuse:

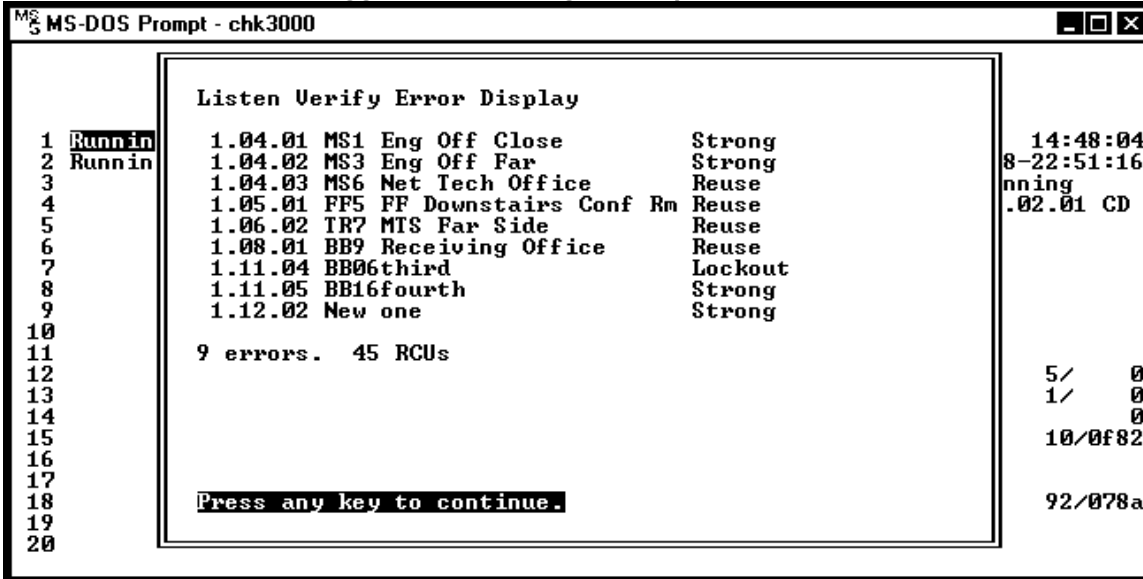
Once all the offsets have been changed, the operator must verify that the base stations are not now interfering with each other. To verify use the following steps:

- Step 1:** Run Listen Verify. From the F1 screen, press Enter to get the menu. Select Start Listen Verify and press Enter.
- Step 2:** When Listen Verify is finished, check the results. You can tell that the Listen Verify is finished by looking at the right hand side of the F1 screen. The "Lis Verify Re(*maining*):" should be blank (as shown in the picture below).

```
display

Time           : 18:04:04
SC Uptime      : 21-00:14:10
SC State       : Running
SC Port        : 1.02.01 CD
Lis Token      :
Lis Token Tim  :
Lis Verify     :
Lis Verify St  :
Lis Verify Re  :
DL Card/Page   :
```

Step 3: There are 2 ways to check the Listen Verify Results. The first way is to check the results from chk3000. This is done from the F1 screen. Press Enter to bring up the menu. Select Check Listen Verify Results and press Enter. This will display the first 14 Base Station errors on the system. If there are more than 14 errors, skip to step 4. From this screen the operator can tell if there are any reuse problems. See picture below. If any cells are flagged as 'Reuse', go to step 4.



Step 4: The other way to check for Base Station Reuse problems is to save the Listen Verify results and view the Log file. After the Listen Verify has finished, save the results. To save the results, from the F1 screen press Enter to bring up the menu. Select Dump Listen Verify Report. This will save the results to a LISVER.LOG file on the computer. View this file and check for any Base Stations with Reuse problems. See example below. Reuse is flagged if a base stations hears another base station on the same offset at a signal strength greater than -80db. In this example the 'Reuse' base station has a signal strength of -76db. The stronger (less negative, e.g. -53db) the signal is, the more likely the installation will have a problem. Carefully review the geographic placement of cells and offset selection. Change cell offsets to maximize separation.

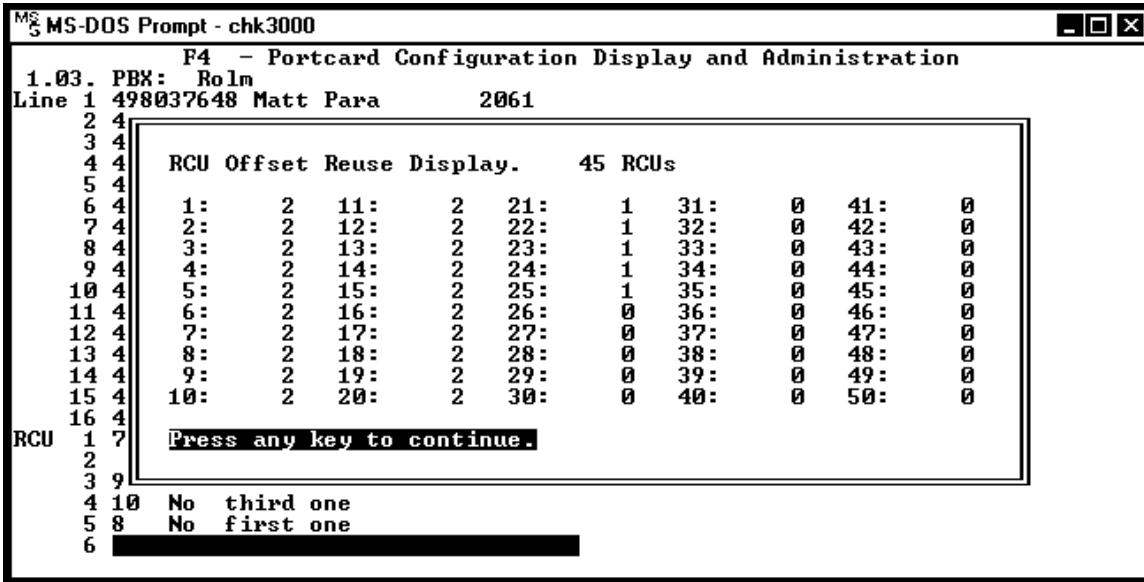
```

1.06.02 "TR7 MTS Far Side " (11 9) 498028847 isolated=no 14:35:13 10 30 0
(LISTEN VERIFY)
1.05.05 "TR6 MTS/Curing Far Side " (9 27) -56 (c0 a6) 103/ 103
1.05.06 "TR3 MTS Center Line " (10 31) -61 (c0 9d) 12/ 12
1.08.05 "SC2 Stockcutting Far Side " (21 29) -67 (c0 94) 12/ 12
1.05.02 "TR5 200 Office " (7 8) -70 (c0 90) 12/ 12
1.06.03 "FF4 Final Finish Far Side " (12 16) -70 (c0 8f) 12/ 12
1.06.01 "TR4 300 Office " (16 3) -71 (c0 8e) 12/ 12
1.05.01 "FF5 FF Downstairs Conf Rm " (6 2) -73 (c0 8a) 15/ 11
1.08.04 "TR8 MTS Next to 300 Off " (20 24) -74 (c0 89) 11/ 11
1.05.03 "TR2 MTS/Curing Close " (15 15) -75 (c0 88) 12/ 12
1.11.01 "BB01first " (11 35) -76 (c0 86) 11/ 10 Reuse
1.10.03 "TR1 MTS Close " (5 19) -79 (c0 81) 11/ 9
1.05.04 "SC1 Above Bead Winder " (2 22) -80 (c0 80) 12/ 11
1.11.04 "BB06third " (13 37) -85 (c0 78) 14/ 12
1.11.05 "BB16fourth " (14 38) -86 (c0 75) 15/ 7
1.10.01 "FF2 FF Center Close " (4 6) -89 (c0 71) 10/ 8
  
```

1.08.03 "FF1 Fin Finish by PE Lab " (19 17) -93 (c0 6a) 17/ 10
 1.08.06 "WH4 Warehouse Far Side " (25 33) -95 (c0 67) 13/ 11
 1.09.04 "WH3 Center Line by Office " (1 25) -98 (c0 62) 16/ 3

Changing from a Reduced spectrum to a Full Spectrum:

When changing from a reduced spectrum to the full spectrum, the operator must change the Base Station offsets so that they are spread evenly across all 50 offsets. To find a Base Station that needs to be changed, use the F4 screen in chk3000. Highlight any Base Station and press Enter to bring up a menu. Select "Show RCU Offset Reuse" and press Enter. This will bring up the following picture. The picture below shows that there are 2 Base Stations with the offset of 1. It also shows zero Base Stations with an offset of 26.



From the example above, one of the Base Stations with the offset of 1 must be changed. This is also true for the Offsets 2 through 20. To change the offset, use the F4 screen in chk3000. Select a Base Station with an offset that has been reused. Edit the Base Station and change to offset. To choose the correct offset, add 25 from the existing offset number. This will be the new offset for that Base Station. For example, if my offset is 2 the new offset will be 27. Repeat this process for all Base Stations that have an offset that is reused. If there are more than 50 cells, check the offset reuse starting with step 1 above.



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