

## SYSTESTS - For Testing a Mark 5A System without a Mark IV Decoder

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## INTRODUCTION

This document describes how to test a Mark 5A installation at 1024 Mb/s without using a Mark IV Decoder. These tests require that you have a Mark 5A Recorder with a Mark IV Formatter in a Mark IV rack. The quality of data recorded on each "track" of the Mark 5A recorder is analyzed to look for problems. More than one set-up is used, including the most stressful, 1024 Mb/second. Minor modifications are required if the Mark IV Formatter is in a VLBA4 rack

1. To collect data, use the test schedule nodecode.snp, which can be found with the procedure file nodecode.prc at <ftp://gemini.haystack.mit.edu/pub/mark5/SNAP>. Other schedules with similar structures, but using different set-ups, can be used as well. Before running the schedule, you should rename any existing log with the schedule's name. For example, if you you are using nodecode.snp, then enter the shell commands:

```
cd /usr2/log
mv nodecode.log nodecode_yymmmdd.log
```

Where "yyymmmdd" is the date that the contents of the log were created. You could instead use some mnemonic string that will help identify the contents of the log.

Then enter the SNAP commands:

```
schedule=nodecode,#1
```

Wait for the schedule to complete, then close the log:

```
log=station
```

Now would be a good time to rename the log as described above, before it is accidentally appended to with other data. The suggestions for renaming described above can be used.

2. To analyze the results, enter the shell command:

```
grep track_check LOG | grep mark4 | less
```

where LOG is the name of the log file you want to analyze.

Each line should end with "0 ;".

If a line does not end with "0 ;", then there is something wrong with that track in that mode.

## INSTALLATION

The installation of this tool is fairly easy.

The steps to update your installation to include this test are described below. You can tell if the Mark 5 tests have been added by whether the nodecode.snp SNAP schedule is in your /usr2/sched directory.

(1) Login as "oper".

(2) Download the nodecode.prc and nodecode.snp files from

```
ftp://gemini.haystack.mit.edu/pub/mark5/SNAP/
```

to your home directory.

- (3) Check that you don't already have procedure libraries and SNAP schedules with the default names, enter:

```
ls /usr2/proc/nodecode.prc
ls /usr2/sched/nodecode.snp
```

If you do already have such files, you should either rename them or use different names in the next step as the target file to copy to. In the latter case, you will have to appropriately modify the "schedule=..." commands in the USAGE examples above to open the correct library. It may also be that you already the current version of nodecode.prc and/or nodecode.snp; you can check this with "diff".

- (4) Copy the default procedure libraries and schedules to "/usr2/proc" and "/usr2/sched", respectively and set their permissions and ownership. These steps assume that you have downloaded the nodecode.prc and nodecode.snp files to your home directory.

```
cd /usr2/proc
cp -a ~/nodecode.prc .
chmod a+w nodecode.prc
chown oper.rtx nodecode.prc

cd /usr2/sched
cp -a ~/nodecode.snp .
chmod a+w nodecode.snp
chown oper.rtx nodecode.snp
```