NORCCIS TEST PLATFORM OPERATOR

&

User's Guide

For

NEC-CCIS ND-560 Host Computer Cplx.

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For

NEC-CCIS ND-560 Host Computer Cplx.

Manual No:Com-868210 NCCI

Orginator : OP/ESAN

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1.0 Introduction

NORCCIS Host Test Platform

1.1 Comma have exclusively prepare a dedicated NORCCIS ND-560 system testpack, incl. an operation manual and defined as " THE NORCCIS Test Platform ". The NORCCIS Host System Testpack is structured in regarding to the general NORCCIS Host configuration, devided in separated partitions of Core test requirements and the NEC-CCIS Host configuration extended requirements, prepared with the same Sintran III L configuration as used in the NEC-CCIS FC-3 operational system.

The Test platform is prepared to run with singel or multi cpu operation. with different option of Global memory configuration. A copy of all relevant standalone programs is also loaded to dedicated test users.

Multi-Job with Error Detection:

1.2 The automated "Multi-Job" mode in The NORCCIS Test Platform has predefined running test scripts with fault-logging control. Only one terminal is needed to run up-to 8 different self running test-jobs in parallel with heavy down load of the system, without any operational tasks. This is the main system-test utilites for ND-560 Host equipment sites in operaton of The NORCCIS Basic Test Bed, for verification, repair, test, debug, and quality operation.

NORCCIS ND-560 Host Maintenance:

1.3 The NEC-CCIS Test Platform are to be used in operational NORCCIS sites helping to minimize the NORCCIS HOST Computer downtime. The NORCCIS test pack is used for stress test of the NORCCIS Host Cplx. to find marginal system faults, and a important test and verification tool in the NORCCIS maitenance program to reduce MTTR figures, cover the gap between micro tests and NEC-CCIS rt-running applications. The test-platform may also be used as a common certification assessment for maintenance personnel in NORCCIS technical organisation and implenented in the NEC-CCIS Training program at LTS Kjevik.

Load and test-configuration options:

1. 4 NORCCIS Test platform is prepared for the spare 140MB disk (sub-umit 0) located in the ND-100 cabinet. The NORCCIS Test Platform can also be used as an removable pluggin unit. All operationnal NEC-CCIS system and mirror disk units are turned off in the actual system configuration when the NORCCIS Test Platform are in operation.

Software License

15 An one-time user license agreement are established and valid in mimimum 5 year ref. contract LFK 912704. The copies utilized of The NORCCIS Test Platform will be valid for all 11 NORCCIS operational sites as stated in this Document. Comma will update and implement relevant new versions and maintain the NORCCIS Test Platform as part in the ND-560 Host Configuration Control program.

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Operational NORCCIS Sites

1.5 License agreement are established for the folowing sites:

Site ID			SOFTWARE KEY
1.5.1	•	JÅTTANUTEN	QIcdVkQhul
1.5.2	•	REITAN	zSod6tAwvP
1.5.3	•	SØRREISA	djhIykVlSy
1.5.4	•	GRÅKALLEN	xgQdjWojP
1.5.5	•	MÅKERØY	AilD6UVxlD
1.5.6	•	BODØ	zPkx6zdCSL
1.5.7	•	ØRLAND	FVhdEniWAl
1.5.8	•	RYGGE	6hjdjHGCNP
1.5.9	•	ANDØYA	AIadNpVHVL
1.5.10	•	BARDUFOSS	g9N6GGPSj
1.5.11	•	LTS Kjevik, NEC-CCIS Training Center	pGMLgIgSIV

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2.0 Description of this product:

This is an exclusively prepared NORCCIS system test pack with documentation and hardware configuration control references. The NORCCIS Test platform is tailor-made to be used in the NORCCIS maintenance program for testing and verification of singel ND-500 card, Singel NORCCIS Host cpu's and in multi cpu envionoment with 2,3 and 4 cpu strings with access to Global memory.

A NORCCIS Host systemtest pack contains test-scripts to run upto 8 different jobbs at the same time with automated fault logging control by use of only one terminal or a PC with Winlink terminal emulation.installed. The NORCCIS system testpack is running on a special version og Sintran III L as generated for NEC-CCIS Program FC-3 version with additions of extra telefix devices.

When a systemerror or halt is detected on the ND-560 Host Cplx by running the NEC-CCIS FC-3 operational software, and the low level stand-alone test program running without a fault indication then the time is ready to use the NORCCIS system test pack for fault insulation down to the failing LRU.

According to the NORCCIS preventive maintenance schedule one day a month a 24 hour complete function test of the NORCCIS Host Cplx should be performed by using the MULTI-JOB option ref section 5 in this manual.

The test platform is delivered on one tape (3200 bpi) and must be installed and booted from the 140MB (or SCSI) disk unit in the ND-100 cabinet, or on a common spare removabel 140MB disk unit. Before loading and booting the NORCCIS Test Platform, other NEC-CCIS system and mirror disks must be turned of.

The Product consist of:

NORCCIS System Test Platform:

	P/N	Description	QTY
1	381695 NCCI	NORCCIS System Test Platform Tape	1
2	830040 EN02	TeleFix Reference Manual	1
3	868210 NCCI	NORCCIS Test Platform OP. Manual	1

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2.0 NORCCIS TestPlatform Installation:

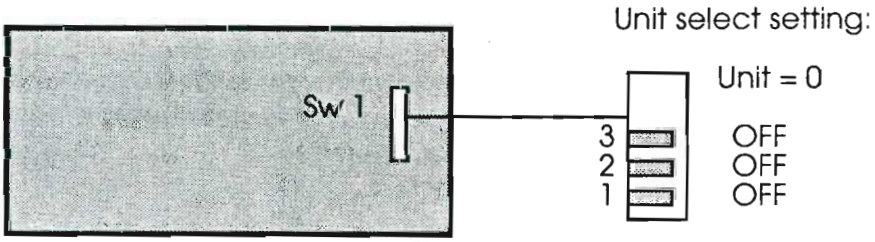
Note !! **All data** on sub-unit 0 (70MB) at the 140 MB disk unit will be destroyed during installation. In addition a swapping file of 12.000 octal pages will be used on sub-unit 1 when running the NORCCIS system test.

3.1 Preparing the 140 MB disk

Before loading and booting the NORCCIS Test Platform remember to turn off DC power and remove the **"disk unit key"** in front of actual NEC-CCIS system and mirror disks, according to your system configuration for test. The disk unit must be switched to unit 0 and must be run as boot device.

3.1.1. Stop the system
3.1.2. Switch of the DC/AC power on the 140 mb disk and stop all other disks.
3.1.3. Switch the 140 mb disk to unit 0.

Top view of the 140 MB disk in ND-100 cabinet.



NB! Verify that the disk unit is terminated :

3.2 Installation of source tape:

All data on sub-unit 0 (70MB) at the 140 MB disk unit will be destroyed during installation.

Install the received site copy source tape and load, if not already installed.
The NORCCIS testplatform is installed on DISC-2-70MB -1-F, 0, 0
Install your source the tape and load it.
Insert a diskette with MCOPY in floppy drive 0.
1560&
* MCOPY
> Copy-From-Mag-Tape
Disk name : DISC-2-70MB -1-F.

Specify tape type:

CIPHER
Disk unit (decimal, 0-3) : <units>
Disk subunit (decimal, 0-3) : 0
Magtape unit (decimal, 0-3) : 0
OK ? : Y

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3.2 Installation of source tape: (cont.)

" Tape backup complete"

- NORCCIS Systems with SMD 140MB disk units - start from the ND-100 operator panel

  or

- NORCCIS Systems with SCSI disk units - start with 21540 & or ALD switch on CPU set to 12.

4.0 SELECT NORCCIS HOST TEST CONFIGURATION:

4.1) Before running the test platform you must choose the configuration to run test on. It is possible to chose one of these:

4.1.1Config A. One cpu without global memory

Run @MODE (SYSTEM)1CPU-EX-GRAM:MODE,,,

4.1.2 Config B. One cpu with global memory (GRAM = 4MB)

Run @MODE (SYSTEM)1CPU-GRAM:MODE,,,

4.1.3 Config C. Two cpu with global memory (GRAM = 2MB)

Run @MODE (SYSTEM)2CPU-1-GRAM:MODE,,, on CPU1 and
Run @MODE (SYSTEM)2CPU-2-GRAM:MODE,,, on CPU2

4.1.4 Config D. Four cpu with global memory (GRAM = 1MB)

Run @MODE (SYSTEM)4CPU-1-GRAM:MODE,,, on CPU1 and
Run @MODE (SYSTEM)4CPU-2-GRAM:MODE,,, on CPU2 and
Run @MODE (SYSTEM)4CPU-3-GRAM:MODE,,, on CPU3 and
Run @MODE (SYSTEM)4CPU-4-GRAM:MODE,,, on CPU4

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4.0 SELECT NORCCIS HOST TEST CONFIGURATION:

4.2.) • **NOTE !** • When you chose B, C or D all cpu's must be stopped from normal use and a extra port must be installed in GLOBAL slot 5,8,11 and/or 14 depending on which cpu(s) to test to global memory.

Selection A for singel cpu may be the most used setup, to find possible errors in the cpu or MPM-5 LSRAM.

4.3.) Select test configuration of 4.1.1 A 4.1.2 B ,4.1.3 C or 4.1.4 D and run the modefiles, according to selected NORCCIS HOST system-test configuration

4.4.) Before starting The system tests:

4.4.1) To be able to run tests the testplatform must have a extra swapfile on the subunit 1 of the disk. The rest of this subunit may be used for other users and files. The following lines are only necessary to do ones if the directory is not overwritten.

```
@CREATE-DIR PACK-TEST-2,DISC-2-70MB-1-F,0,1
@ENTER-DIR PACK-TEST-2,DISC-2-70MB-1-F,0,1
@SET-DEFAULT-DIR PACK-TEST-2
@CREATE-USER PACK-TEST-2:SWAP-USER
@GIVE-USER-SPACE PACk-TEST-2:SWAP-USER 12001
@NEW SWAP-USER
@CREATE-FILE (PACK-TEST-2:)SWAP-FILE-1:SWAP 12000
@SET-FILE-ACCESS SWAP-FILE-1:SWAP R RWACD RWACD
@NEW SYSTEM
```

4.4.2) @RESTART-SYSTEM

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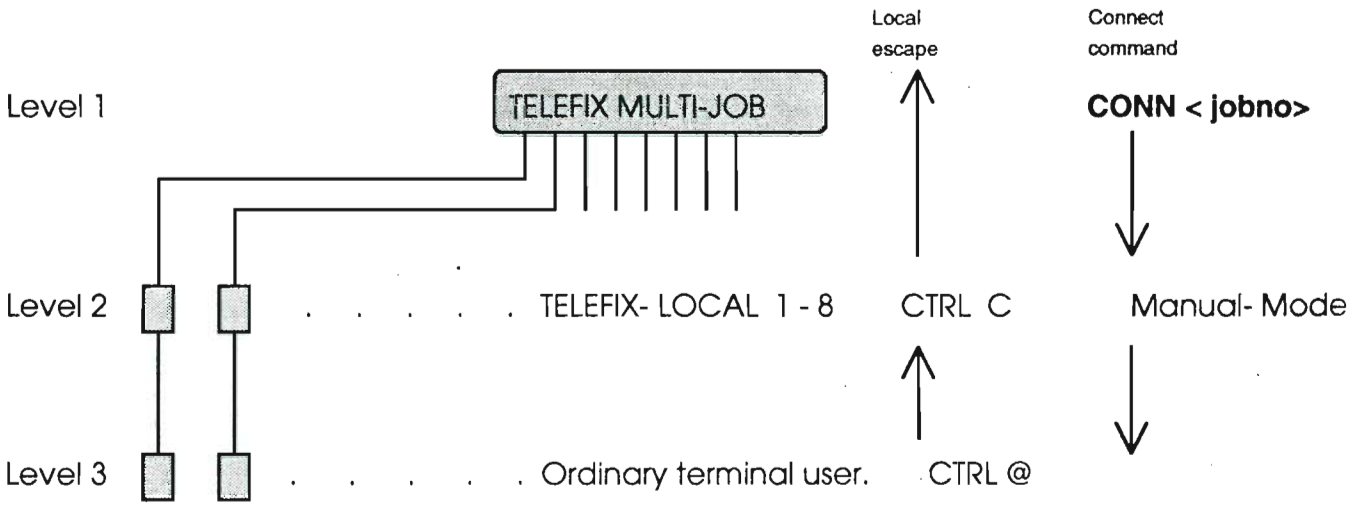
5.0 HOW TELE-FIX WORKS:



5.1 TELE- FIX levels:

- The multi-job- (level 1) - is the master with control of up to eight jobs and takes care of all operator communication.

- Telefix-Local (level 2) controls one singe job and performs all checking of output from the predefined script. Input to the job is given from this level. To get back to MULTI-JOB type CTRL C.

- Level 3 is a ordanary terminal device running a job with input from TELEFIX-Local and sending all output back. To get back to TELEFIX-LOCAL type CTRL @

You can move between the three levels with connect commands and local ESC. When you use the local ESC character you will leave the lower level as it is.

5.2 Starting Predefined Scripts:

- The terminal running TELEFIX must be logged in on user TELEFIX. (ref. level 3)

Enter user: SYSTEM
@ NEW TELEFIX
@ MULTI-JOB
@ MODE START

NOTE : Do not run on system console

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- **Wait until the following picture appears on the screen:**

```
      JOBS STATUS                          GENERAL STATUS
                                           Started 16:45:33  11 Feb. 1994
JOB   BUFFER  STATUS    IDENT

1     No character      ( SIMULA )         Stop on buffer full
2     No character      ( SUPER-TEST )     Wait for 6 s during MODE
3     No character      ( USER-TEST )      Exit character : 3B ( CTRL +C)
4     No character      ( DESMODUR )
5     No character      ( KJEMI )          Alarm is not armed
6     No character      ( RANDOM )
7     No character      ( NOTIS )          No log file in use
8     No character
9     No character      Connected to terminal
                                           No display terminal in use

      End of mode file                     Extra INFO:          Indicate that all jobs is
      >                                                         started  ca  10 minutes
```

NOTE!

You can move between the three levels with connect commands and local ESC. When you use the local ESC character you will leave the lower level as it is.

NOTE ! DO NOT USE COMMAND EXIT HERE BECAUSE YOU WILL NOT GET CONTACT WITH THE PROCESSES AGAIN WITHOUT A RESTART.

5.3 Useful commands

MODE	< filename.>	•	Used to start a set of predefined scripts.
INIT	< termtype >	•	Reset the terminal and screen
CONNECT-TO-JOB	< job >	•	Connect to job number < job>
CLEAR-BUFFER	< job >	•	Delete job buffer
LOG-AN		•	Enter loganalyzer
STATUS		•	Show status for all jobs.

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6.0 ERROR DETECTION:

6.1 Use of Log-Analyzer

When an error is detected it will be shown as a number of characters in the JOB STATUS picture

To check the error do the following tasks:

CONN < job>	Failing job with detected characters in job buffer
LOG-AN	Enter the LOG-ANALYZER
S3	Code to find first error.

- The cursor will now move to the first line found different from the script. You will now be told what was expected line and what was found line. In the following lines you will get the same error message as if you were running on a ordinary terminal.

6.2 Restart a job after error:

Leave the LOG-ANALYZER with the command "J" in HOME position. You will now return automatically to TELEFIX-LOCAL. (level 2).

Continue with :

CONNECT , , ,	
MUTING	
M-M	Manual Mode If you are asked to clear the buffer Answer "N"

Level 3

- Now you are entered as a the termial that gave the error and can try to get more error information from the process before shutting down. If this **is not** the error you are looking for continue as follows.

Exit the program **Push ESC to realise the failing process** and log out the terminal. Return to TELEFIX-local with CTRL @ and restart the job with the commands:

AUTO START-<testname>
MODEL TYPE 560
<CTRL C>

You are now back in the **main job status** picture. page 10.

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7 . Shutdown the system

The system should be shut down controlled to avoid start-up problems.

1. MODE (SYSTEM)STOP-MODE:MODE,,,
2. If testing is finished run MODE (SYSTEM)1CPU-EX-GRAM:MODE.
This must be done to avoid this cpu to take global memory on next start-up and stop the entire system.
3. If testing is finished switch everything back to original and start the system as usual.

8.) Creating test floppies

It is possible to create the two ND-100 test floppies from the platform.

8.1. Insert an empty and formatted floppy diskette in **Floppy -Drive-1 UNIT 0.**

8.2. @NEW ND100-TEST-PROGRAM

8.3. @MODE TEST-FLOPPY-1:MODE,,,
or
@MODE TEST-FLOPPY-2:MODE,,,

84. Remove the floppy diskette and label it.

9.) Version on software

SINTRAN Special generation L08
Patch file 1000
ND-500 Monitor J04
Swapper K05
Micro program 10512
Telefix C03
Fortran-500 K02

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10. IMPORTANT TECH. NOTES:

10.1. Remember to run complete shutdown before returning to normal use of the system:

```
@MODE STOP-MODE:MODE,,,
@MODE ONE CPU-EX-GRAM:MODE,,,
```

10.2. If you switch of the power in GRAM all systems will detect powerfail.

10.3. If you only switch unit number on the disk and not use the correct unit cabel, you will get an error message on startup (paralell seek disabeled). This message may be ignored.

10.4. The whole system must be stopped from normal use when testing with GRAM.

10.5. Remember to remove the spare port from gram when finished testing with GRAM.

10.6. Install the test platform and make the second directory ready as soon as posible if the 140MB disk is free to use. Most of the directory PACk-TEST-2 is free to use.

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11.0. MEMORY SETUP CONFIGURATION CONTROL.

11.1	Local MPM-5 Only	Config A	With-out "GSRAM"
11.2	Global Memory setup	Config B	See next page
11.3	Global Memory setup	Config C	See next page
11.4	Global Memory setup	Config D	See next page

11.5.) NORCCIS HW Configuration Control.

11.5.1 ND-100/120Cx Card crate

11.5.2 ND-500/1 Card crate

11.5.3 MPM-5 Local LSRAM Card crate

11.5.4 MPM-5 Global GSRAM Card crate.

NOTE !! : Last print versions is used as references in all crate forms

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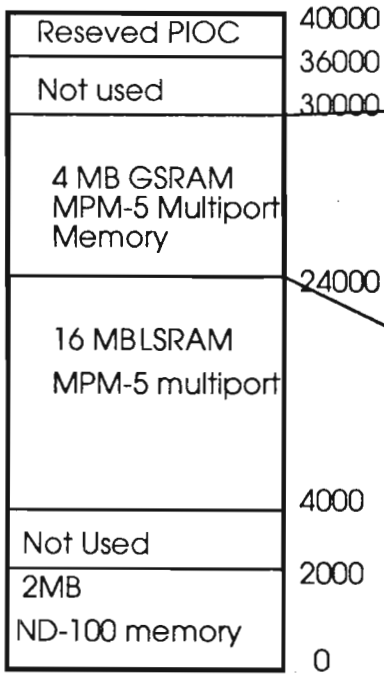
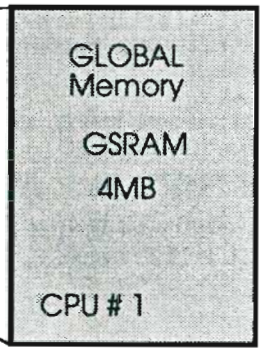


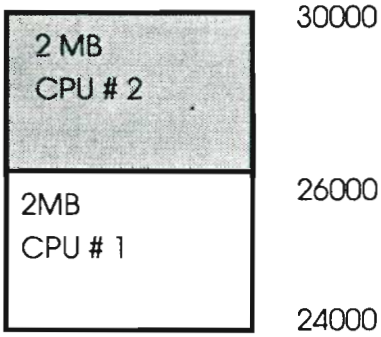
Systemtest config " B "



Global Memory Cabinet

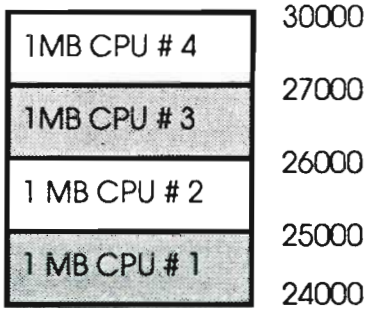
Running systemtest with singel CPU using 4MB of Global Memory "GSRAM"

Systemtest config " C "



Running systemtest with 2 CPU configuration
Using 2 MB GSRAM memory each.

Systemtest config " D "



Running systemtest with 4 CPU configuration

Using 1MB GSRAM memory each

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NORCCIS Equipment Configuration Control Record.

Customer name:	**LFK/ NORCCIS I**	Orginator's name	OP/ S3.
Contract no:	**LFK-912704 NORCCIS**	Project Manager:	Ola Preststulen
Customer no:	259090 - // Project : **PRO. 254**	Comma POC:	
Doc. Name	Crate Configuration Control	**Controled by:**	**OP/S3 Comma Data Service AS.**
Doc.Rev. date	10. Nov. 1993	Replaced by:	Same doc no : "same date"

CARD Crate Configuration : ND-100 /120 Cx.

Slot	Part No:	Description	ECO	Print	Serial No:	Comments
1						
2						
3	350105	ND-120 Cx CPU, 32Bit 2MB	P	N		Print 3104
4	322622	ND-500 Interface	M	L		Print 3022
5	322626	ND-100 GPIB Controler	M	C		Print 3026
6	322626	ND-100 GPIB Controler	M	C		Print 3026
7	322606	Pertec Mag-Tape Controler	Q	G		Print 3006
8	322673	15 MHz SMD Control	M	L		Print 3043
9	322674	15 MHz SMD Data	X	T		Print 3044
10		Dummy				
11		Dummy				
12	322627	Floppy Disk Controler	M	F		Print 3027
13	322610	Floppy 4 Terminals Interface	U	Q		Print 3010 N // ECO ⇒ T
14	322609	Local I/O bus adaptor	J	H		Print 3009
15		Dummy				
16	34001	ND-100 PIOC 128 KB Memory	S	E		Print 3101
17	34001	ND-100 PIOC 128 KB Memory	S	E		Print 3101
18	34001	ND-100 PIOC 128 KB Memory	S	E		Print 3101
19	34001	ND-100 PIOC 128 KB Memory	S	E		Print 3101
20		Dummy				
21	324118	Octobus/ MPM Line Driver	H	A		Print 3109
22						
23						

Source- / User Assignment Information Control

Submitting org:	POC:	System Type: ND-100
Site:	Phone: Ext:	System No: 500./
Location:	Control date:	Crate No: . / .
Requested by:	Signature:	Function: 120CX #:

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NORCCIS Equipment Configuration Control Record.

Customer name:	**LFK/ NORCCIS I**	Orginator's name	OP/ S3.
Contract no:	**LFK-912704 NORCCIS**	Project Manager:	Ola Preststulen
Customer no:	259090 - // Project : **PRO. 254**	Comma POC:	
Doc. Name	Crate Configuration Control	**Controled by:**	**OP/S3 Comma Data Service AS.**
Doc.Rev. date	10. Nov. 1993	Replaced by:	Same doc no : "same date"

CARD Crate Configuration : ND-500/I

Slot	Part No:	Description	ECO	Print	Serial No:	Comments
1						
2						
3						
4	322506	CACHE MODULE (Inst.) 2. ver.	D	A		Print: 5006
5	322517	CACHE CONTROL (Instr.)	U	P		Print: 5017
6						
7						
8						
9	322506	CACHE MODULE (Data.) 2 .ver	D	A		Print: 5017
10	322517	CACHE CONTROL. (Data)	U	P		Print: 5017
11	322522	MEMORY MAN. (Inst.) 2. ver	L	E		Print: 5022 / 5005
12	322522	MEMORY MAN. (Data.) 2. ver	L	E		Print :5022 / 5005
13	322515	CONTROL II	J	H		Print: 5015
14	322518	PREFETCH	T	K		Print: 5018
15	322512	CONTROL I	J	E		Print: 5012
16	322519	TRAP	U	M		Print: 5019
17	324201	8K CS RAM	C	C		Print: 5401
18	322504	SEQUENCER	H	E		Print: 5004
19	322501	CPU SLICE	H	C		Print: 5001
20	322501	CPU SLICE	H	C		Print: 5001
21	322501	CPU SLICE	H	C		Print: 5001
22	322501	CPU SLICE	H	C		Print: 5001
23	322508	ARITHMETIC 1	E	E		Print: 5008
24	322509	ARITHMETIC 2	G	F		Print: 5009
25	322511	ARITHMETIC 3	C	C		Print: 5011
26	322514	ARITHMETIC 4	E	E		Print: 5014

Source- / User Assignment Information Control

Submitting org:	POC:	System Type: ND-500/1
Site:	Phone: Ext:	System No: 500./
Location:	Control date:	Crate No: . / .
Request by:	Signature:	Function: 500 # :

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NORCCIS Equipment Configuration Control Record.

Customer name:	**LFK/ NORCCIS I**	Orginator's name	OP/ S3.
Contract no:	**LFK-912704 NORCCIS**	Project Manager:	Ola Preststulen
Customer no:	259090 - // Project : **PRO. 254**	Comma POC:	
Doc. Name	Crate Configuration Control	Controled by:	OP/S3 Comma Data Service AS.
Doc.Rev. date	10. Nov. 1993	Replaced by:	Same doc no : "same date"

CARD Crate Configuration : MPM-5 Local "LSRAM "

Slot	Part No:	Description	ECO	Print	Serial No:	Comments
1	324351	MPM5 Controler -	R	D		
2						
3	324355	MPM5 Port -	H	D		ND-100 LSRAM Ch.
4	324355	MPM5 Port -	H	D		ND-500 LSRAM Data. Ch.
5	324355	MPM5 Port -	H	D		ND-500 LSRAM Inst. Ch.
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23	324158	4MB Dynamic Ram	W	L		
24	324158	4MB Dynamic Ram	W	L		
25	324158	4MB Dynamic Ram	W	L		
26	324158	4MB Dynamic Ram	W	L		

Source- / User Assignment Information Control		
Submitting org:	POC:	System Type: ND-560
Site:	Phone: Ext:	System No: 500./
Location:	Control date:	Crate No:
Requested by:	Signature:	Function: LSRAM

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NORCCIS Equipment Configuration Control Record.

Customer name:	**LFK/ NORCCIS I**	Orginator's name	OP/ S3.
Contract no:	**LFK-912704 NORCCIS**	Project Manager:	Ola Preststulen
Customer no:	259090 - // Project : **PRO. 254**	Comma POC:	
Doc. Name	Crate Configuration Control	Controled by:	OP/S3 Comma Data Service AS.
Doc.Rev. date	10. Nov. 1993	Replaced by:	Same doc no : "same date"

CARD Crate Configuration : MPM-5 GLOBAL "GSRAM

Slot	Part No:	Description	ECO	Print	Serial No:	Comments
1	324351	MPM5 Controler -	R	D		
2						
3	324355	MPM5 Port -	H	D		ND-100 # 1
4	324355	MPM5 Port -	H	D		ND-500 # 1 Data
5						
6	324355	MPM5 Port -	H	D		ND-100 # 2
7	324355	MPM5 Port -	H	D		ND-500 #2 Data
8						
9	324355	MPM5 Port -	H	D		ND-100 # 3
10	324355	MPM5 Port -	H	D		ND-500 # 3 Data
11						
12	324355	MPM5 Port -	H	D		ND-100 # 4
13	324355	MPM5 Port -	H	D		ND-500 # 4 Data
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26	324158	4MB Dynamic Ram	W	L		

Source- / User Assignment Information Control

Submitting org:	POC:	System Type: ND-560
Site:	Phone: Ext:	System No: -N/A-
Location:	Control date:	Crate No:
Requested by:	Signature:	Function: GSRAM

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Appendix A:

>

Configuration of Global "GSRAM" Memory:

```
 * * *  MULTIPORT - 5 TEST AND MAINTENANCE  PROGRAM    * * *

       VERSION  E.00 -  MAY 2, 1985

>IN-EE
SLOTNO:
DATE(YYMMDD):
OLD CONTENTS WILL BE LOST - CONTINUE ?:Y

 - WRITING TO NONVOLATILE MEMORY, PLEASE WAIT -

 * EEPROM INITIATED *
>CON-SL


   M O D U L E S   I N   T H I S   B A N K .
================================================================
SLOT NO.   01   : MPM-5 BANKCONTROLLER
SLOT NO.   03   : TWIN 16-BIT PORT (PRINT 5155)
SLOT NO.   04   : TWIN 16-BIT PORT (PRINT 5155)
SLOT NO.   05   : TWIN 16-BIT PORT (PRINT 5155)
SLOT NO.   23   : DYNAMIC RAM -   4 MB

SLOTNO:1
SLOT NO.   01   : MPM-5 BANKCONTROLLER
TIMEOUT (2-40 MIC.SEC):6
MAINT CONTROL REG. (RETURN=DEFAULT):
ERROR-INVESTIGATOR ON? :N
REPORT 1-BIT ERRORS ?:Y
NEW BAUDRATE ?:N

 - WRITING TO NONVOLATILE MEMORY, PLEASE WAIT -

SLOTNO:3
SLOT NO.   03   : TWIN 16-BIT PORT (PRINT 5155)
EXPLAIN PORT PARAMETERS ? :N
LOWER LIMIT:240
UPPER LIMIT:300
ACCESS (LOCAL=1, GLOBAL=2, BOTH=3):3
MORE LIMITS (YES/NO):N
START ADDRESS (PORT BASE):0
DATALENGTH(16,32):16
INTERLEAVE TYPE (0,2,4,8):2
INTERLEAVE PORT NUMBER (0-3):1
REQUEST DELAY (10,30,40 or 60 ns):
BUFFERED WRITE (Y/N)?:Y
MASTER CONTROL REG (Return gives default):25
SAVE(YES/NO):Y

 - WRITING TO NONVOLATILE MEMORY, PLEASE WAIT -
```


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Configuration of Global "GSRAM" Memory:

```
SLOTNO:
SLOT NO.  04  : TWIN 16-BIT PORT (PRINT 5155)
EXPLAIN PORT PARAMETERS ? :N
LOWER LIMIT:200
UPPER LIMIT:240
ACCESS (LOCAL=1, GLOBAL=2, BOTH=3):3
MORE LIMITS (YES/NO):N
START ADDRESS (PORT BASE):0
DATALENGTH(16,32):32
INTERLEAVE TYPE (0,2,4,8):0
INTERLEAVE PORT NUMBER (0-3):1
REQUEST DELAY (10,30,40 or 60 ns):
BUFFERED WRITE (Y/N)?:Y
MASTER CONTROL REG (Return gives default):5
SAVE(YES/NO):Y

 - WRITING TO NONVOLATILE MEMORY, PLEASE WAIT -

SLOTNO:5
SLOT NO.  05  : TWIN 16-BIT PORT (PRINT 5155)
EXPLAIN PORT PARAMETERS ? :N
LOWER LIMIT:200
UPPER LIMIT:240
ACCESS (LOCAL=1, GLOBAL=2, BOTH=3):3
MORE LIMITS (YES/NO):N
START ADDRESS (PORT BASE):0
DATALENGTH(16,32):32
INTERLEAVE TYPE (0,2,4,8):0
INTERLEAVE PORT NUMBER (0-3):1
REQUEST DELAY (10,30,40 or 60 ns):
BUFFERED WRITE (Y/N)?:Y
MASTER CONTROL REG (Return gives default):5
SAVE(YES/NO):Y

 - WRITING TO NONVOLATILE MEMORY, PLEASE WAIT -

SLOTNO:23
SLOT NO.  23  : DYNAMIC RAM -   4 MB
LOWER LIMIT (256 KBYTE INCREMENT (OCTAL)):0
RAM CONTROL REG:
SAVE(YES/NO):Y

 - WRITING TO NONVOLATILE MEMORY, PLEASE WAIT -
```


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Configuration of Global "GSRAM" Memory:

```
SLOTNO:-1
>AUTO
>INV

   M O D U L E S   I N   T H I S   B A N K .
================================================================
SLOT NO.  01  : MPM-5 BANKCONTROLLER
SLOT NO.  03  : TWIN 16-BIT PORT (PRINT 5155)
SLOT NO.  04  : TWIN 16-BIT PORT (PRINT 5155)
SLOT NO.  05  : TWIN 16-BIT PORT (PRINT 5155)
SLOT NO.  23  : DYNAMIC RAM -   4 MB

>LI-CON
SLOTNO:1
SLOT NO.  01  : MPM-5 BANKCONTROLLER
MAINTENANCE CONTR. REG: 000435B
TIMEOUT ON MPM-BUS    : 000006
BAUDRATE ON CONSOLE   : 009600
REPORT ALL CORRECTED ERRORS


SLOTNO:3
SLOT NO.  03  : TWIN 16-BIT PORT (PRINT 5155)
PORT START ADDRESS       :  000000B
PORT CONTROL REGISTER    :  000045B
MASTER CONTROL REGISTER  :  000025B

LIMITS THAT DEFINE ACCESS-AREAS FOR THE PORT.
LOWER LIMIT : 000240B      UPPER LIMIT: 000300B      GLOBAL + LOC


SLOTNO:4
SLOT NO.  04  : TWIN 16-BIT PORT (PRINT 5155)
PORT START ADDRESS       :  000000B
PORT CONTROL REGISTER    :  000144B
MASTER CONTROL REGISTER  :  000005B

LIMITS THAT DEFINE ACCESS-AREAS FOR THE PORT.
LOWER LIMIT : 000200B      UPPER LIMIT: 000240B      GLOBAL + LOC


SLOTNO:5
SLOT NO.  05  : TWIN 16-BIT PORT (PRINT 5155)
PORT START ADDRESS       :  000000B
PORT CONTROL REGISTER    :  000144B
MASTER CONTROL REGISTER  :  000005B

LIMITS THAT DEFINE ACCESS-AREAS FOR THE PORT.
LOWER LIMIT : 000200B      UPPER LIMIT: 000240B      GLOBAL + LOC


SLOTNO:23
SLOT NO.  23  : DYNAMIC RAM -   4 MB
LOW LIMIT OF RAM      : 000000B
RAM CONTROL REGISTER  : 000000B


SLOTNO:-1
>SYN
SLOT NO.  23 1-BIT CORRECTION - OK -
             2-BIT DETECTION  - OK -
```


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Configuration of Global "GSRAM" Memory:

```
>D-E-L
SLOTNO:23

POSITION  :     D       E       F       G       H       J       K       L
-------------------------------------------------------------------------
        1 :     -       -       -       -       -       -       -       -
        2 :     -       -       -       -       -       -       -       -
        3 :     -       -       -       -       -       -       -       -
        4 :     -       -       -       -       -       -       -       -
        5 :     -       -       -       -       -       -       -       -
        6 :     -       -       -       -       -       -       -       -
        7 :     -       -       -       -       -       -       -       -
        8 :     -       -       -       -       -       -       -       -
        9 :     -       -       -       -       -       -       -       -
       10 :     -       -       -       -       -       -       -       -
       11 :     -       -       -       -       -       -       -       -
       12 :     -       -       -       -       -       -       -       -
       13 :     -       -       -       -       -       -       -       -
       14 :     -       -       -       -       -       -       -       -
       15 :     -       -       -       -       -       -       -       -
       16 :     -       -       -       -       -       -       -       -
       17 :     -       -       -       -       -       -       -       -
       18 :     -       -       -       -       -       -       -       -
       19 :     -       -       -       -       -       -       -       -
       20 :     -       -       -       -       -       -       -       -
H=HARD-, S=SOFT-ERROR.   NO. OF MULTIBIT ERRORS: 00000
>
>
>
```


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