

# **NMR Test Spectrometer**

## **Report Name: 2023-07-06**

### **AV NEO (750 MHz) 442759**

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- Probe: H8780\_0007 / 2023-07-06

**Jul 6, 2023**

**NMR TEST ACCEPTANCE**

## ● Configuration Information [uxnmr.info](http://uxnmr.info)

### CONFIGURATION INFORMATION

=====

```
Path      : /opt/topspin/conf/instr/spect/uxnmr.info
Date      : Wed Jun 28 12:20:24 2023
Release   : TopSpin 4.1.3
Installed in : /opt/topspin
Host      : BladeEpu
OS        : CentOS Linux release 7.2.1511 (Core)
SPECTR-OS : Version 4.1.166.20220113
CPU       : Intel(R) Core(TM) i5-8400H CPU @ 2.50GHz (8 cores at 900 MHz with Hyperthreading)
User      : root (root)
System    : Avance Neo 750 NMR spectrometer
1H-frequency : 750.3 MHz
Description : Avance NEO
Bruker Order : 442759
Configured in: BladeEpu:/opt/topspin/conf/instr/spect
```

#### AQ-Rack:

```
- SCU: AV4I SCU SYSTEM CONTROL UNIT Z162978/00387 ECL 02.00
- {EPU}: AV4I SCU SYSTEM CONTROL UNIT Z162978/00387 ECL 02.00
- {GTU}: AV4I SCU SYSTEM CONTROL UNIT Z162978/00387 ECL 02.00
Location: slot 7 in rack 1
Connection: at IP 192.168.180.18 via PCIe #4
Firmware Version: 20210312125813
- Gradient resolution: 1.0 us
Devices: MTD at /dev/mtdd2, RTD at /dev/bbu/rtdd4.4, GPROC at /dev/bbu/gproc4.7
Sequencer: GCube, TCube
- GCube1
- TCube1
- TRX 1200: AV4 TRANSCEIVER 1200 Z148391/06699 ECL 02.05
Location: slot 3 in rack 1
Connection: at IP 192.168.180.38 via PCIe #9
Firmware Version: 20210312121750
Devices: MTD at /dev/mtdd1, DRX at /dev/bbu/drxd9.5, RTD at /dev/bbu/rtdd9.4
Sequencer: FCube
- FCube1
- TRX 1200: AV4 TRANSCEIVER 1200 Z148391/06698 ECL 02.05
Location: slot 4 in rack 1
Connection: at IP 192.168.180.46 via PCIe #11
Firmware Version: 20210312121750
Devices: MTD at /dev/mtdd20, DRX at /dev/bbu/drxd11.5, RTD at /dev/bbu/rtdd11.4
Sequencer: FCube
- FCube2
- TRX 1200: AV4 TRANSCEIVER 1200 Z148391/06700 ECL 02.05
Location: slot 5 in rack 1
Connection: at IP 192.168.180.54 via PCIe #13
Firmware Version: 20210312121750
Devices: MTD at /dev/mtdd29, DRX at /dev/bbu/drxd13.5, RTD at /dev/bbu/rtdd13.4
Sequencer: FCube
- FCube3
- PSM-A: AV4 PSM-A Z149510/02732 ECL 03.01
- HPPR/2 COVER2: HPPR/2 Cover2N Z178831/00167 ECL 00.00
HPPR2: - HPPR/2 preamplifier connected via AqRack
Type : HPPR/2
Controller: Cover/2
no LED display for tuning and matching
Module 1 : HPLNA 1H19F (reflection meter with CRP-Bias capability)
PN=Z103207, SN=00209 from 20210618
Module 2 : 2H
PN=Z003475, SN=00210 from 20190312
Module 3 : HPLNA BB31P (reflection meter without CRP-Bias capability)
PN=Z111095, SN=00223 from 20190705
Module 4 : 13C/79Br
PN=Z003526, SN=00207 from 20180612
```

```
Module 5 : HPLNA BB31P (reflection meter without CRP-Bias capability)
PN=Z111095, SN=00221 from 20190315
Module 6 : 31P
PN=Z102451, SN=00200 from 20210622
```

```
- HPLNA 1H19F: HPLNA 1H MODULE 750 Z103207/00209 ECL 06.05
- 2H: HPPR/2 2H MODULE 750 Z003475/00210 ECL 07.00
- HPLNA BB31P: HPLNA XBB 31P MODULE 750 Z111095/00223 ECL 04.04
- 13C/79Br: HPPR/2 13C MODULE 750 Z003526/00207 ECL 08.00
- HPLNA BB31P: HPLNA XBB 31P MODULE 750 Z111095/00221 ECL 04.04
- 31P: HPPR/2 31P MODULE 750 Z102451/00200 ECL 07.01
- RACK: AV4I AQS CHASSIS Z175600/00370 ECL 00.00
- PSM-48V: AV4 PSM-48V Z149850/04474 ECL 01.02
- PSM-D: AV4 PSM-D Z149520/02583 ECL 01.01
- FANTRAY: AV4I AQS FAN TRAY Z175900/00312 ECL 00.00
- REF 1200: AV4 REFERENCE 1200 Z148270/02367 ECL 02.02
```

#### Transmitters at the spectrometer subnet:

```
BLA-W144060-000236 W144060/000236 ECL 41:
- TCP/IP address = 192.168.99.13
- Firmware VS = 20210223
- Amplifier = AV4 BLABB1000 15-600: W144060/000236 ECL 41
- Controller = BLA CONTROL BOARD 7: W133936/025326 ECL 40
BLA-W144060-000235 W144060/000235 ECL 41:
- TCP/IP address = 192.168.99.12
- Firmware VS = 20210223
- Amplifier = AV4 BLABB1000 15-600: W144060/000235 ECL 41
- Controller = BLA CONTROL BOARD 7: W133936/025302 ECL 40
BLA-W144058-000036 W144058/000036 ECL 02:
- TCP/IP address = 192.168.99.11
- Firmware VS = 20210223
- Amplifier = AV4 BLAH1000 700-900: W144058/000036 ECL 02
- Controller = BLA CONTROL BOARD 7: W133936/023492 ECL 40
LTX Z109892/00208 ECL 02.02:
- TCP/IP address = 192.168.99.10
- Amplifier = BSM/2 LOCK TRANSCEIVER 750: Z109892/00208 ECL 02.02
```

#### Gradient amplifiers at the spectrometer subnet:

```
BGA1: BGAU_W154248_0136
- TCP/IP address = 192.168.99.16
- Firmware version = 20210916
- Web version = 8.10
- Current limits = 0.0/X, 0.0/Y, 0.0/Z (in A)
BGA2: BGAU_W154248_0137
- TCP/IP address = 192.168.99.15
- Firmware version = 20210916
- Web version = 8.10
- Current limits = 0.0/X, 0.0/Y, 0.0/Z (in A)
BGA3: BGAU_W154248_0139
- TCP/IP address = 192.168.99.14
- Firmware version = 20210916
- Web version = 8.10
- Current limits = 0.0/X, 0.0/Y, 0.0/Z (in A)
```

```
BSMS: BSMS/2 connected to ethernet
- TCP/IP address = 192.168.99.10
- ELCB firmware version = 20210921
- ELCB = BSMS/2 ELCB: Z100818/09250 ECL 07.03
- GAB current limits = 0.0/X, 0.0/Y, 10.0/Z (in A)
- Shim System = BOSS-WB
- SCB channels = 40
- Shim matrix file: 272623fa.dat
```

## ● Configuration Information [uxnmr.info](http://uxnmr.info)

```
- Active shims: Z Z2 Z3 Z4 Z5 X XZ XZ2 (X2-Y2) XY Y Y2 YZ2 (X2-Y2)Z2 XZ4 XZ3 Z6 (X2-Y2)Z YZ4 YZ3 XYZ2 XYZ X3Z X3
- Magnet polarity: SN (Bruker), uses standard H0 polarity
- L-TRX = BSMS/2 LOCK TRANSCEIVER 750: Z109892/00208 ECL 02.02
- Lock: on L-TRX board, supports 2H
- VTU_SPB = BSMS/2 SPB-2 SENSOR & PNEUMATIC BD: Z115192/00870 ECL 05.05
- VTU_VPSB1 = AV4 VARIABLE POWER SUPPLY BD DC-E: Z140144/00301 ECL 01.02

VTU: in BSMS/2 connected to ethernet
- TCP/IP address = 192.168.99.10

- Firmware version = 20220315_1040
MAS Control Unit: MAS_H139288_0479
- TCP/IP address = 192.168.98.5

Line Distribution Units at the spectrometer subnet:
-----
Line Distribution Unit 1: PDU1
- TCP/IP address = 192.168.99.99
Line Distribution Unit 2: PDU2
- TCP/IP address = 192.168.99.101
Line Distribution Unit 3: PDU3
- TCP/IP address = 192.168.99.102

RF cable connections (detected)
-----
TRX1 NORM output -> input 1 of transmitter 3 (AV4 BLAH1000 700-900 W144058/000036 at TCP/IP 192.168.99.11)
TRX1 AUX output -> input 1 of transmitter 4 (BSMS/2 LOCK TRANSCEIVER 750 Z109892/00208 at TCP/IP 192.168.99.10)
TRX2 NORM output -> input 1 of transmitter 2 (AV4 BLABB1000 15-600 W144060/000235 at TCP/IP 192.168.99.12)
TRX2 AUX output -> open
TRX3 NORM output -> input 1 of transmitter 1 (AV4 BLABB1000 15-600 W144060/000236 at TCP/IP 192.168.99.13)
TRX3 AUX output -> open

Blanking cable connections (detected)
-----
transmitter 1 = AV4 BLABB1000 15-600 W144060/000236 at TCP/IP 192.168.99.13:
- amplifier B-100W uses blanking 3
- amplifier B-100W uses blanking 3

transmitter 2 = AV4 BLABB1000 15-600 W144060/000235 at TCP/IP 192.168.99.12:
- amplifier B-100W uses blanking 2
- amplifier B-100W uses blanking 2

transmitter 3 = AV4 BLAH1000 700-900 W144058/000036 at TCP/IP 192.168.99.11:
- amplifier 1H-1000W uses blanking 1
- amplifier 1H-100W uses blanking 1

transmitter 4 = BSMS/2 LOCK TRANSCEIVER 750 Z109892/00208 at TCP/IP 192.168.99.10:
- amplifier 2H-5W uses blanking 9

Preamplifier connections (detected)
-----
Tune-TRX1 -> HPLNA 1H19F -> REC1
Tune-TRX1 -> 2H -> REC1
Tune-TRX2 -> HPLNA BB31P -> REC2
Tune-TRX2 -> 13C/79Br -> REC2
Tune-TRX3 -> HPLNA BB31P -> REC3
Tune-TRX3 -> 31P -> REC3
```

## ● IP Config Information

```
en01: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 149.236.99.1 netmask 255.255.255.0 broadcast 149.236.99.255
inet6 fe80::bee9:2fff:fea0:537c prefixlen 64 scopeid 0x20<link>
ether bc:e9:2f:a0:53:7c txqueuelen 1000 (Ethernet)
RX packets 6923655 bytes 3886563426 (3.6 GiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 7154353 bytes 1408541130 (1.3 GiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
device interrupt 16 memory 0x90200000-90220000

eno2: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 132.229.125.41 netmask 255.255.255.0 broadcast 132.229.125.255
inet6 fe80::88d8:b392:8bfa:f470 prefixlen 64 scopeid 0x20<link>
ether bc:e9:2f:a0:53:7d txqueuelen 1000 (Ethernet)
RX packets 986949 bytes 196563367 (187.4 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 449345 bytes 114302212 (109.0 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
device memory 0x90100000-9017ffff

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 2016972 bytes 923599408 (880.8 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 2016972 bytes 923599408 (880.8 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

**PH MAS DVT 750W4 BL4 X/Y/H**

**750.3 MHz**

**Probe ID: H8780\_0007**

**Inspection Lot: 2023-07-06**

**Jul 6, 2023**

**NMR TEST ACCEPTANCE**

● Probe NMR Test Data: PH MAS DVT 750W4 BL4 X/Y/H

### Probe Related Information

EC-Level	0
Gas Compensation	nitrogen
Gradient System	none
ATM Accessory	false
Temperature Sensor Type	TypeT
Proton Frequency [MHz]	750.3
Diameter [mm]	4.0

### Spectrometer Related Information

Type	AV NEO
CF Frequency [MHz]	750.30
Shim System	BOSS-WB
Shim System Offset	Standard
Software	TopSpin 4.1.3
OS	CentOS Linux release 7.9.2009 (Core)
Host Name	avance750
Magnet System	WB
Magnet Coil No	BR.091075110
Dewar No	BD228972
Helium Level	62%
System Number	442759