

## CHECKLIST FOR EUROVISION HYPERMIX RECEPTION

To correctly receive the encrypted Eurovision Hypermuxes

- a) The firmware version should be 6.1 as shown below - check under the menu **System>HW/SW version**

The screenshot shows the NovelSat NS2000 web interface. The top navigation bar includes links for home, log in, manual, calculator, and contact. The status bar indicates 'Not logged in' and 'Configuration not saved'. On the left, the 'NS2000 Menu' is visible with options: monitor, system, system config, and demodulator config. The main content area is titled 'SW/HW versions' and contains three tables.

Product:		Cards	
S/N:	Demodulator	Card 1 type:	Dual GbE
Hardware version:	2.06.02.00	Serial number:	0000001892
MAC Address 1:	EC:3B:F0:00:1D:C2	HW version:	6.02.00
Internal Clock Type:	TCXO	Card 2 type:	not exist

  

Firmware version	U-Boot 2004.1051 09-May-2016 01:52
Operating system version	OS 2.6.32.13 (Build 4761)
File system version	FS 1.2 (Build 1099)

  

Active software versions	
Name	Version
SW	NS2000 6.1.0 3111 09-May-2017 19:21

If version is 5.7, the unit must be upgraded to 6.1

If version is lower than 5.7, the unit must be upgraded first to 5.7; then 6.1. For questions, please contact [ns3upgrade@eurovision.net](mailto:ns3upgrade@eurovision.net)

- b) Verify that demodulators have an NS4 and DRM(EBU) license as shown below - check under **System>License**

NovelSat  
Making space in space  
● ALARM ● RX ● TEST

home log in manual calculator contact Logged in as admin Configuration not saved

**NS2000 Menu**  
monitor  
system  
system config  
demodulator config

License issued date: 26/1/2015  
License ID: 370

Licensed Features		
Name	License-Type	Days-Left
L-band 950-2150MHz	permanent	NA
1 Channel Option (Default)	permanent	NA
Dual Channel Option	permanent	NA
DVB-S2/NS3 <b>NS4</b> QPSK/8PSK/16APSK 70Mps	permanent	NA
Dynamic Distortion Compensator	permanent	NA
<b>DRM (EBU)</b>	permanent	NA

Download license  
[Option 1: File Selection](#)  
Download File (.xml)

If the demodulator does not have the licenses highlighted above, please contact [ns3upgrade@eurovision.net](mailto:ns3upgrade@eurovision.net)

In either case, please specify your demodulator serial number(s) and which licenses are needed (DRM, NS4 or both). The demodulator serial number is in the S/N field as shown below in the **System > SW/HW versions**

**NS2000 Menu**  
monitor  
system  
system config  
demodulator config

**SW/HW versions**

Product:	Demodulator
S/N:	297
Hardware version:	2.01.09.00
MAC Address 1:	EC:3B:F0:00:01:29
Internal Clock Type:	TCXO

Card 1 type:	Dual GbE
Serial number:	0000000255
HW version:	5.01.00
Card 2 type:	not exist

Firmware version	U-Boot 2004.1051 09-May-2016 01:52
Operating system version	OS 2.6.32.13 (Build 4761)
File system version	FS 1.2 (Build 1099)

Active software versions	
Name	Version
SW	NS2000.6.1.0.3111 09-May-2017 19:21

c) **Verify the demodulator is locked on Hypermux**

Verify reception parameters in the **demodulator config > Line** (see Appendix 1):

**demodulator config > channel 1**

The screenshot shows the NS2000 Menu on the left with 'demodulator config' highlighted. The main area displays 'Channel 1 settings'. Under the 'ISI Range' label, there are two input fields: the first contains '00' and the second contains 'f1', separated by a hyphen.

**demodulator config > MGMT channel**

The screenshot shows the NS2000 Menu on the left with 'demodulator config' highlighted. The main area displays 'MGMT Channel (HOST Only) settings'. Under the 'State' label, there is a dropdown menu set to 'Enable'. Under the 'ISI Range' label, there are two input fields: the first contains 'fe' and the second contains 'ff', separated by a hyphen.

**demodulator config > interface > ASI > ASI-A**

The screenshot shows the NS2000 Menu on the left with 'demodulator config' highlighted. The main area displays 'Interface ASI-A settings'. There are three settings, each with a label and a dropdown menu: 'Source' is set to 'CHANNEL-1', 'Data Invert' is set to 'NO', and 'Data Rate Mode' is set to 'AUTO'.

These parameters should give you a lock on the Hypermux. Verify this on the menu **monitor > line** which should show a lock on the following parameters

**NovelSat**  
Making space in space

home log in manual calculator contact Not logged in

**NS2000 Menu**

- monitor
- system
- system config
- demodulator config

### Line status

General			
Mode	NS4	Symbol Rate	70.00 MSPS
State	Sync	Symbol Rate Offset	5.36 PPM
Pilot-SNR	14.51 dB	Roll Off	0.02
Composite Power	-38.08 dBm	RF Frequency	3743.00 MHz
Signal Power	-43.45 dBm	Frequency Offset	7.61 KHz

  

Channel-1	
Data Rate	169.40 Mbit/Sec
Link Margin	7.11 dB
Status	Locked
SNR	13.13 dB
Modulation	16APSK
FEC-Rate	19/30
Pilot	YES
Frame-Size	Normal
Frames	1.885e+07
Error Frames	0
FER	0.00e+00

- d) If you have completed these steps and are locked on the Hypermux, please send a message to [ns3upgrade@eurovision.net](mailto:ns3upgrade@eurovision.net) with your company name and a request to send .gpg and aes keys

These keys are required to decrypt the multiplex.

Always communicate your devices' S/N (serial number) in your e-mail. The S/N can be found under **System > HW/SW** versions as shown below:

**NS2000 Menu**

- monitor
- system
- system config
- demodulator config

### SW/HW versions

Product: Demodulator		Cards	
S/N:	297	Card 1 type:	Dual GbE
Hardware version:	2.01.09.00	Serial number:	0000000255
MAC Address 1:	EC:3B:F0:00:01:29	HW version:	5.01.00
Internal Clock Type:	TCXO	Card 2 type:	not exist

  

Firmware version	U-Boot 2004.1051 09-May-2016 01:52
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Active software versions	
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e) Verify the AES and GPG keys have been received by your demodulators in the Monitor > DRM

Please verify :

- Taker ID is a number, not zero ( 0 )
- A file .GPG is in **DRM Private Key File Name**
- A file .AES is in **DRM AES Key File Names**

**NS2000 Menu**

- monitor ▶
- system ▶
- system config ▶
- demodulator config ▶

### DRM Status

DRM General Status	
Taker ID	412
Network ID	EBU
Mode	Black

### DRM PID Status Table

Channel	ISI	TTL (minutes)	Time	PID
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A

### DRM Private Key File Name

Time	File Name
5/6/2017 18:18	412_20170529T160231Z.GPG

### DRM AES Key File Names

Channel	Key id	Status	Time	File Name
1	0	IDLE	9/6/2017 14:00	6_412_0_20170530T215213Z.AES
1	1	IDLE	N/A	
2	0	IDLE	N/A	
2	1	IDLE	N/A	

Please contact [ns3upgrade@eurovision.net](mailto:ns3upgrade@eurovision.net) if you do not receive the keys.

## APPENDIX 1: RF PARAMETERS FOR HYPERMUXES

### A. Asia: HM1, AS5 100.5°E, txp C11V

Web page of NS2000: menu **demodulator config > line**:

Line settings		
Line Mode	NS4	▼
Dual Channel Mode	Single channel	▼
Symbol Rate	70.000000	MSPS
LNB LO Freq	5150.00000	MHz
RF Freq	4080.00000	MHz
Roll Off	0.02	▼
Golden Seq	0	
LNB Control	13V/0KHz	▼
NS4 NLC Mode	ON	▼
Input Level Mode	Constant-Power	▼
Fast Sync Mode	Disable	▼
ACM Mode	Disable	▼
Auto CCM Mode	Disable	▼
<button>Save</button>		

Please verify that **NS4 NLC Mode** is **ON**.

The parameters **LNB LO Freq** and **LNB Control** depend on your individual installation.  
The illustration is only an example.

**B. Europe and Middle East: HM3, ABS-3A 3°W, txp S3 and S7**

Web page of NS2000: menu **demodulator config > line**:

Line settings	
Line Mode	NS4
Dual Channel Mode	Single channel
Symbol Rate	70.000000 MSPS
LNB LO Freq	9750.00000 MHz
RF Freq	11150.00000 MHz
Roll Off	0.02
Golden Seq	0
LNB Control	OFF
NS4 NLC Mode	OFF
Fast Sync Mode	Disable
ACM Mode	Disable
Auto CCM Mode	Disable
<input type="button" value="Save"/>	

Parameters for txp S3 (Europe)

Line settings	
Line Mode	NS4
Dual Channel Mode	Single channel
Symbol Rate	70.000000 MSPS
LNB LO Freq	9750.00000 MHz
RF Freq	10990.00000 MHz
Roll Off	0.02
Golden Seq	0
LNB Control	OFF
NS4 NLC Mode	OFF
Fast Sync Mode	Disable
ACM Mode	Disable
Auto CCM Mode	Disable
<input type="button" value="Save"/>	

Parameters for txp S7 (Middle East and Northern Africa)

Please verify that **NS4 NLC Mode** is **OFF**.

The parameters **LNB LO Freq** and **LNB Control** depend on your individual installation.

The illustrations are only examples.

C. Europe, Middle East and Northern Africa: HM4, Eutelsat 7B, 7°E, txp B5

Web page of NS2000: menu *demodulator config > line*:

Line settings		
<a href="#">Line Mode</a>	NS4	▼
<a href="#">Dual Channel Mode</a>	Single channel	▼
<a href="#">Symbol Rate</a>	70.000000	MSPS
<a href="#">LNB LO Freq</a>	9950.00000	MHz
<a href="#">RF Freq</a>	11158.33000	MHz
<a href="#">Roll Off</a>	0.02	▼
<a href="#">Golden Seq</a>	0	
<a href="#">LNB Control</a>	13V/0KHz	▼
<a href="#">NS4 NLC Mode</a>	ON	▼
<a href="#">Input Level Mode</a>	Constant-Power	▼
<a href="#">Fast Sync Mode</a>	Disable	▼
<a href="#">ACM Mode</a>	Disable	▼
<a href="#">Auto CCM Mode</a>	Disable	▼

Please verify that **NS4 NLC Mode** is **ON**.

The parameters **LNB LO Freq** and **LNB Control** depend on your individual installation.  
The illustrations are only examples.

D. Americas: HM5, IS-34 304.5°E, txp AE1C

Web page of NS2000: menu *demodulator config > line*:

Line settings		
<a href="#">Line Mode</a>	NS4 ▼	
<a href="#">Dual Channel Mode</a>	Single channel ▼	
<a href="#">Symbol Rate</a>	70.000000	MSPS
<a href="#">LNB LO Freq</a>	5150.00000	MHz
<a href="#">RF Freq</a>	3745.00000	MHz
<a href="#">Roll Off</a>	0.02 ▼	
<a href="#">Golden Seq</a>	0	
<a href="#">LNB Control</a>	13V/0KHz ▼	
<a href="#">NS4 NLC Mode</a>	ON ▼	
<a href="#">Input Level Mode</a>	Constant-Power ▼	
<a href="#">Fast Sync Mode</a>	Disable ▼	
<a href="#">ACM Mode</a>	Disable ▼	
<a href="#">Auto CCM Mode</a>	Disable ▼	

Please verify that **NS4 NLC Mode** is **ON**.

The parameters **LNB LO Freq** and **LNB Control** depend on your individual installation.  
The illustrations are only examples.