EUROVISION SATELLITE DISTRIBUTION ON EUTELSAT 10B
MULTIPLEX PLATFORM HYPERMUX 6 (HM6)

Special Notice EV 2023/08 August 2023

1. INTRODUCTION

EUTELSAT 10B – HYPERMUX HM6

By mid-August 2023, Eurovision are establishing a permanent Multiplexer called HyperMux 6 (HM6), transmitted in NS4 modulation, on transponder EVS72 on Eutelsat's 10B satellite, located at 10° East.

This platform will be used for the distribution of major sporting events, along with a variety of other transmissions to European broadcasters.

2. SATELLITE COVERAGE

Eutelsat 10B covers Europe and the Middle East in Ku-Band with linear polarization. Its restricted uplink beams make it more resistant to interferences.

See verso for E10B-EVS72 EIRP coverage map.

3. TRANSPONDER E10B-EVS72

E10B-EVS72 has been identified as the most suitable transponder to host this HyperMux, which will utilise the whole 72Mhz of bandwidth. In agreement with the satellite operator, we have merged two 36MHz transponders into a single 72Mhz transponder, aggregating all content previously spread across two transponders, reducing the number of receivers required for the takers, and giving more flexibility.

Orbital Position:	10° East
Transponder:	EVS72
Txp dw central frequency:	11200.00 MHz
Bandwidth:	72 MHz
Uplink polarization:	Linear Vertical
Downlink polarization:	Linear Horizontal

4. RECEPTION ANTENNA REQUIREMENTS

Antenna diameter	1.8m	2.4m	3.0m	3.6m
Antenna G/T	22.8dB/K	25.1dB/K	26.8dB/K	28.3dB/K

VSWR RX better than 1.3:1
Operating frequency 10.95 - 11.70 GHz
Polarization Linear Horizontal
LNB PLL type with L.O. stability better than +/- 25 kHz

5. BEACONS

Antennas equipped with a tracking system will have to be adapted to the beacon frequencies shown below (unmodulated CW carriers):

Beacon	Coverage	Ku band	Polarisation
CW1	Europe	11 698.60 MHz	X
CW2	Europe	11 699.20 MHz	Y

6. MPEG DIGITAL STREAMS

The configuration of the HM6 on the E10B-EVS72 is the following:

ASI Interface bitrate :	200.714Mbps
Modulation NS4:	16APSK
FEC (BCH+LDPC):	3/4
Pilot:	ON
Frame:	Normal
Roll-off :	2%
Symbol Rate :	70 Ms/s
Occupied bandwidth :	72 MHz

See verso for an example of demodulator configuration and licenses required.

7. CONTACTS

EVC Geneva 24/7
Tel: +41 22 717 2790

Eurovision Bookings
E-mail: bookings@eurovision.net
Tel: +41 22 717 2900

Eurovision Demodulator support
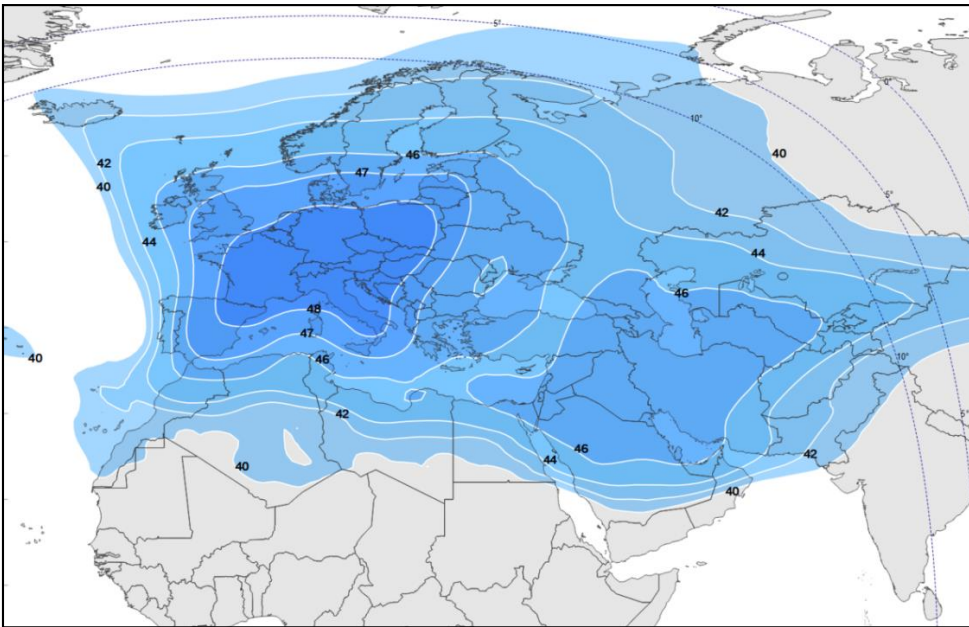E-mail: demodsupport@eurovision.net
Contact the Demodulator Support team if you need to register new demodulators or require reception or encryption troubleshooting for HM6.

Eurovision Satellite Operations Manager
Mayeul Mermin
E-mail: mermin@eurovision.net

E10B Nominal Coverages, Ku-band Widebeam

Figure 1 - Ku-band Widebeam: typical EIRP (in dBW. Saturated performance)

Demodulator Line status

General			
Mode	NS4	Symbol Rate	70.00 MSPS
State	Sync	Symbol Rate Offset	1.15 PPM
Pilot-SNR	16.48 dB	Roll Off	0.02
Composite Power	-41.16 dBm	RF Frequency	11200.00 MHz
Signal Power	-45.51 dBm	Frequency Offset	17.89 KHz

Channel-1	
Data Rate	200.72 Mbit/Sec
Link Margin	6.53 dB
Status	Locked
SNR	15.98 dB
Modulation	16APSK
FEC-Rate	3/4
Pilot	YES
Frame-Size	Normal
Frames	1.377e+06
Error Frames	0
FER	0.00e+00

MODE CODE Table (limited to 60)

Modulation	FEC-rate	Pilot	Frame-size	Frames	Error-Frames	FER	Link-Margin	SNR	Designated-To-Unit?
DUMMY	---	---	---	67,080	---	---	---	---	---
8PSK	8/15	YES	Normal	396	0	0.00e+00	12.30	16.19	NO
16APSK	3/4	YES	Normal	1.377e+06	0	0.00e+00	6.51	15.98	NO

Figure 2 - Typical demodulator settings, licenses required and example of reception