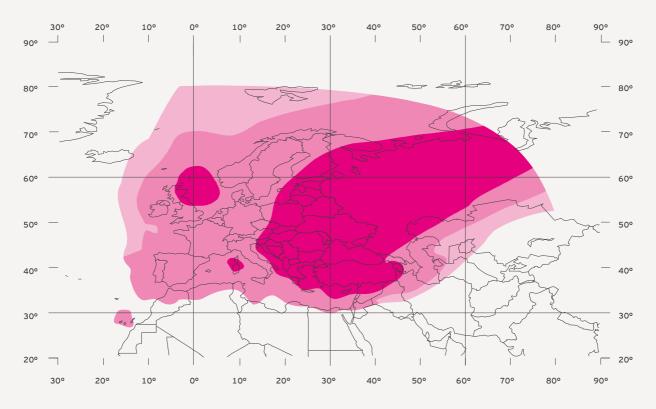


ASTRA 4A TV Program – DW (Deutsch)

Launch date August 1, 2015

Rebroadcasting and Direct-to-Home

Position 4,8° East Transponder 4.235 Frequency 12,380 GHz Polarization horizontal FEC 3/4 Symbolrate 27,500 Msymbols/s Modulation QPSK /DVB-S Video Standard PAL Video Compression MPEG-2 Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG TV Channel DW (Deutsch)		
Frequency Polarization horizontal FEC 3/4 Symbolrate 27,500 Msymbols/s Modulation QPSK /DVB-S Video Standard PAL Video Compression MPEG-2 Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG	Position	4,8° East
Polarization horizontal FEC 3/4 Symbolrate 27,500 Msymbols/s Modulation QPSK /DVB-S Video Standard PAL Video Compression MPEG-2 Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG	Transponder	4.235
FEC 3/4 Symbolrate 27,500 Msymbols/s Modulation QPSK /DVB-S Video Standard PAL Video Compression MPEG-2 Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG	Frequency	12,380 GHz
Symbolrate 27,500 Msymbols/s Modulation QPSK /DVB-S Video Standard PAL Video Compression MPEG-2 Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG	Polarization	horizontal
ModulationQPSK /DVB-SVideo StandardPALVideo CompressionMPEG-2Audio CompressionMPEG-1/Layer 2Encryption-Additional Data ServicesEIT / EPG	FEC	3/4
Video StandardPALVideo CompressionMPEG-2Audio CompressionMPEG-1/Layer 2Encryption-Additional Data ServicesEIT / EPG	Symbolrate	27,500 Msymbols/s
Video Compression MPEG-2 Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG	Modulation	QPSK/DVB-S
Audio Compression MPEG-1/Layer 2 Encryption - Additional Data Services EIT / EPG	Video Standard	PAL
Encryption - Additional Data Services EIT / EPG	Video Compression	MPEG-2
Additional Data Services EIT / EPG	Audio Compression	MPEG-1/Layer 2
, .	Encryption	-
TV Channel DW (Deutsch)	Additional Data Services	EIT / EPG
1 Chamer DW (Detasen)	TV Channel	DW (Deutsch)
Radio Channel -	Radio Channel	-



Reception may be possible even beyond these contours

1.2 m	1.8 m	2.4 m	Diameter of satellite receiving antenna in meter (approximate values) for Rebroadcasting
0.8 m	1.2 m	1.8 m	Diameter of satellite receiving antenna in meter (approximate values) for Direct-to-Home

Important technical remark:

The diameters of the antennas are calculated for perfect weather conditions (clear sky), assuming perfectly aligned high quality antennas. Commonly used wire mesh antennas have a lower efficiency than solid dishes. To secure the reception, it is advisable to generally choose a diameter about 20% larger.