

NV8200 TRANSMITTER FAMILY

GENERAL SPECIFICATIONS



ROHDE & SCHWARZ

NV8200 series Transmitter FCC Certification Application

Transmitter Family NV8200 General Specifications

Overview

Type	NV8201	NV8202	NV8203	NV8204	NV8205	NV8206
No. of amplifiers VH8200A1	1	2	3	4	5	6
DVB-T output power (w/o bandpass- filter @ -37dB shoulder, $F_0 \pm 4,2\text{MHz}$)	200W	400W	600W	800W	1000W	1200W
DVB-T power consumption (incl. cooling system)	1,6 KW	2,7 KW	3,7 KW	4,7 KW	5,7 KW	6,8 KW
ATSC output power	300W	600W	900W	1200W	1500W	1800W
ATSC power consumption (incl. cooling system)	2,0 KW	3,3 KW	4,7 KW	6,0 KW	7,3kW	8,7kW
Air volume approx. DVB-T ATSC	8,5 m3/min 8,5 m3/min	8,5 m3/min 8,5 m3/min	17 m3/min 17 m3/min	17 m3/min 17 m3/min	17 m3/min 17,5 m3/min	17 m3/min 21 m3/min
Heat dissipation into the room with guided air to outside approx.	0,3 kW	0,4 kW	0,5 kW	0,6 kW	0,7KW	0,8KW
Heat dissipation into the room DVB-T w/o guided air to outside approx	1,4 kW	2,3 kW	3,1 kW	3,9 kW	4,7 kW	5,6 kW
Heat dissipation into the room ATSC w/o guided air to outside approx	1,7 kW	2,7 kW	3,8 kW	4,8 kW	5,8kW	6,9kW
Fuse rating for MDB per phase: (recommended if fuse being used)	20 A	25 A	35 A	35 A	35 A	40 A
Recommended mains cable	5*2, 5 mm ²	5* 4 mm ²	5* 6 mm ²	5* 6 mm ²	5* 6 mm ²	5* 10 mm ²
Fuse rating for MDB per phase: (recommended for slow safety switch type NZM7....7)	16A	16 A	25 A	25 A	25 A	35A
Recommended mains cable	5*2,5 mm ²	5* 2,5 mm ²	5* 4 mm ²	5* 4 mm ²	5* 4 mm ²	5* 6 mm ²
Dimensions TX (H x D x W) E/V versions: 1998 x 800 x	600mm	600 mm	600 mm	600 mm	600 mm	600mm
Weight (w/o transport packing) E/V versions approx.	225 kg	250 kg	275 kg	300 kg	325 kg	350kg
Weight (incl. packing and cooling system) for sea-/air freight, approx.	380kg	400 kg	440 kg	480 kg	520 kg	560kg
RF output connectors:	EIA 1-5/8"	EIA 1-5/8"	EIA 1-5/8"	EIA 1-5/8"	EIA 1-5/8"	EIA 1-5/8"

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Transmitter Family NV8200 General Specifications (continued)

Transmitter Family NV8200	OFDM (MediaFLO)	ATSC
General		
Frequency range	UHF Bds IV/V: 470 to 862 MHz	
Standards	EN 300 744	FCC Doc. A/53
Digital transmission band width	5, 6, 7 or 8 MHz	6 MHz
SFN/DTx function	acc. to TS 101 191	on request
EMC	acc. to ETS 300 447	
Max. installation altitude	2000 m above sea level (up to 3000 m on request)	
Operating temperature (transmitter room)	+1 to +45°C	
Max. relative humidity	95% non condensing	
AC supply voltage	3x 400V ±15%	
AC line frequency	47 to 63 Hz	
Power factor	³ 0,90	
Total noise level	<63 dBA	
Cooling	by air	
Permissible VSWR	s ≤ 1,3 (power reduction at 1,5)	
Inputs		
Signal	ASI	ASI or SMPTE310M
Data rate	3 to 40 Mbit/s (dep. on operating mode)	19,39 Mbit/s
Connectors	4x ASI _{in} (HP _{1/2} , LP _{1/2}) BNC 75 Ω	2x SMPTE310 _{in} (A _{1/2}) BNC 75 Ω
Reference frequency	10 MHz; 0,1 to 5 Vpp or TTL, BNC 50 Ω	
Reference pulse	1 pps, TTL, BNC, evaluating rising edge	
Monitoring	signal present, TS synchronisation, data rate of TS	
Modulation		
Length of transport packet	204/188 bytes	207/187 bytes
Modes	QPSK, 16QAM, or 64QAM	8VSB
IFFT mode	2k and 8k, optional 4k for DVB-H	
Useful symbol period	224ms (2k) or 896ms (8k) or 448ms (4k)	
Guard period	1/4, 1/8, 1/16 or 1/32 of useful symbol period	
Inner coding rate	1/2, 2/3, 3/4, 5/6 or 7/8	

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Transmitter Family NV8200 General Specifications (continued)

Transmitter Family NV8200	OFDM (MediaFLO)	ATSC
Trellis Coding	-	2/3
Hierarchical coding	optional	-
Exciter frequency range	adjustable between 470 MHz and 862 MHz	
Step width	1 Hz	
Delay correction	max. 1000 ms, automatic and manual setting (> 1000 ms on request)	
Pre correction	digital non-linear (base band) digital linear equalisation (base band) enhanced group delay equalization (optional)	
Amplifier		
Output stage	LDMOS transistor	
Dimension	4HE, 520 x 350mm	
Weight (VH8200A1)	approx. 26kg	
Outputs		
RF Transmitter	please refer to page 2	
RF Exciter	SMA, 13 dBm RMS	
Test points		
RF Exciter	-7 dBm RMS SMA 50 Ω	
10 MHz OXCO Exciter	SMA 50 Ω	
each RF Amplifier	SMA 50 Ω	
Base band Signal	ASI	SMPTE310
Protection & Monitoring		
Transmitter	Mains	
	Air flow	
	Reflection	
	Temperature	
	Amplifier	
Amplifier	Mains	
	Reflection	
	Temperature	
	Over voltage	
	Transistor fail	
	RF input level detection	
	RF output power fail	
	CAN bus	
Remote		
RJ-45	network management interface (Web server and/or SNMP agent), optional	
Parallel interface	floating contacts for messages and commands, optional	

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Transmitter Family NV8200 General Specifications (continued)

Transmitter Family NV8200	OFDM (MediaFLO)	ATSC
Bit bus	bus interface, meets IEC 864-2, optional	
RJ-45	network management interface (Web server and/or SNMP agent), optional	
Quality		
MER	³ 33 dB at Tx output typically 35 dB	³ 33 dB at Tx output typically 35 dB
Frequency response $f_0 \pm 3,805$ MHz	< $\pm 0,5$ dB	
Intermodulation suppression		
band width 8 MHz at $f_0 \pm 4,2$ MHz (w/o band pass filter)	≤ -37 dB (with pre correction)	
band width 7 MHz at $f_0 \pm 3,7$ MHz (w/o band pass filter)	≤ -37 dB (with pre correction)	-
band width 6 MHz at $f_0 \pm 3,2$ MHz (w/o band pass filter)	≤ -37 dB (with pre correction)	-
Compliance with spectrum mask	acc. to ETS No. Pr 300 744 with output band pass filter	FCC DTV Emission Mask
Spurious emissions	³ -70 dBc	
Harmonics	³ -60 dBc	
Phase noise:		
Frequency / carrier offset	dBc/Hz	
10 Hz	> 70	
100 Hz	> 90	
1 kHz	> 93	
10 kHz	> 103	
100 kHz	> 112	
1 MHz	> 130	
Frequency stability	10^{-7} / year	

Applicable Standards for NV820x Family

DIN EN 60215 (VDE 0866/IEC 215)
DIN EN 60950 (VDE 0805/IEC 950)

DIN EN ISO 9001
ETSI EN 301489-14

Safety requirements for radio transmission equipment
Safety of information technology equipment incl. electrical
business equipment (as far as applicable)
(quality system) certified until 13 December 2004
Electromagnetic compatibility for radio spectrum matters
(ERM)
Electromagnetic compatibility for radio equipment and service (EMC)