

NovelSat PCIe OEM Modulator/Demodulator Cards - Specifications

Baseband

DVB-S/DSNG		DVB-S2/S2X		NovelSat NS3/NS4	
Inner code	Convolution	Outer code	BCH	Outer code	BCH
QPSK	1/2, 2/3, 3/4, 5/6, 7/8	Inner code	LDPC	Inner code	LDPC
8PSK	2/3, 5/6, 8/9	Code rates and modulation:		Modulations	QPSK, 8PSK, 16APSK, 32APSK, 64APSK
16QAM	3/4, 7/8	QPSK	1/4, 13/45*, 1/3, 2/5, 9/20*, 1/2, 11/20*, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	Frame length	64800, 16200
Outer Code	Reed Solomon (204, 188, T=8)	8PSK	5/9(L)*, 26/45(L)*	Baseband ROF	"SRRC like" 2% (NovelSat NS4), 5%, 10%, 15%, 20%, 25%, 35%
Interleaving	(I=12)	8PSK	3/5, 23/36*, 2/3, 25/36*, 13/18*, 3/4, 5/6, 8/9, 9/10		
Frame length	204, 188	16APSK	26/45*, 3/5*, 28/45*, 23/36*, 2/3, 25/36*, 13/18*, 3/4, 7/9*, 4/5, 5/6, 77/90*, 8/9, 9/10, 1/2(L)*, 8/150(L)*, 5/9(L)*, 3/5(L)*, 2/3(L)*		
Baseband ROF	SRRC 25%, 35%	32APSK	32/45*, 11/15*, 3/4, 7/9*, 4/5, 5/6, 8/9, 9/10, 2/3(L)*		
		64APSK	11/15*, 7/9*, 4/5*, 5/6*, 32/45(L)*		
		128APSK**	3/4*, 7/9*		
		256APSK**	32/45*, 3/4*, 29/45(L)*, 2/3(L)*, 31/45(L)*, 11/15(L)*		
		Frame length	64800, 16200		
		Baseband ROF	SRRC 2%, 5%, 10%, 15%, 20%, 25%, 35%		

*DVB-S2X only
**NS10C only

NS10C Modulator Interfaces

L-Band Output		IF-Band Output	
Connector	SMA (F) 50 ohm	Connector	BNC (F) 75 Ohm
Frequency range	950-2150MHz in 1Hz steps (optional 10MHz out combined on port)	Frequency range	50MHz to 180MHz in 1Hz steps
Power level	-40/+3 dBm in 0.1dB steps	Power level	-40/+3 dBm in 0.1dB steps
Power accuracy/ temp. stability	±0.5dB/±0.5dB	Power accuracy/ temp. stability	±0.5dB/±0.5dB
Return loss	>12 dB	Return loss	>15 dB
Spurious	<-55dBc in band and out of band at max. power	Spurious	<-55dBc in band and out of band at max. power
Phase noise	@100Hz -70dBc, @1KHz -80dBc, @10KHz -85dBc, @100KHz -95dBc, @1MHz -100dBc	Phase noise	Meets IESS-308

Monitoring Output		10MHz Reference Clock I/O (Optional)	
Connector	SMA (F) 50 Ohm	Connector	BNC (F) 75 Ohm
Frequency	Identical to L-Band/IF-Band frequencies	Ref. input power level	-3dBm up to +7dBm
Power level	-30 dBm to -45 dBm	Ref. output power level	+7dBm Typical
Return loss	> 7dB	Waveform	Sine wave

NS20C Demodulator Interfaces (4x L Band -or- 4x IF Band)

L-Band		IF-Band	
Connector	BNC (F) 50 ohm	Connector	BNC (F) 75 Ohm
Frequency range	950-2150MHz in 1Hz steps (optional 10MHz out combined on port)	Frequency range	50MHz to 180MHz in 1Hz steps
Power level	-40/+3 dBm in 0.1dB steps	Power level	-40/+3 dBm in 0.1dB steps
Power accuracy/ temp. stability	±0.5dB/±0.5dB	Power accuracy/ temp. stability	±0.5dB/±0.5dB
Return loss	>12 dB	Return loss	>15 dB
Spurious	<-55dBc in band and out of band at max. power	Spurious	<-55dBc in band and out of band at max. power
Phase noise	@100Hz -70dBc, @1KHz -80dBc, @10KHz -85dBc, @100KHz -95dBc, @1MHz -100dBc	Phase noise	Meets IESS-308

LNB Power Control		10MHz Reference Clock I/O (Optional)	
Voltage	11.5-14 V (Vert. Pol.), 16-19V (Horiz. Pol.)	Connector	BNC (F) 50 Ohm
Band select	22KHz ±4KHz	Ref. input power level	-3dBm up to +7dBm (Default)
Max. current	350mA	Ref. output power level	+7dBm
		Waveform	Sine wave

Additional Information

Monitor and Control Interfaces		PC Interface	Physical	Environmental	
SW interfaces	Web based graphic user interface SNMP V3	PCI Express V2.1 x1 lanes	Size	Power	25 Watts Max.
			Size	Operating temp.	0 to 50°C
				Storage temp.	-40°C to 70°C
				Operating humidity	Up to 85% Non-Condensing
				Storage humidity	Up to 95% Non-Condensing



Related products: NovelSat NS1000 Satellite Modulator,

NovelSat NS2000 Satellite Demodulator

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