

## D688 series X-band to 720MHz Downconverter

INPUT SPECIFICATION		Options
1. Frequency range:	8.0 to 9.0GHz (or any reduced part of this band)	
2. Connector:	N-type	SMA
3. Impedance:	50Ω	
4. Return loss:	≥20dB	
OUTPUT SPECIFICATION		
5. Frequency range:	720 ± 200MHz, 720 ± 40MHz, 720 ± 20MHz (check model table)	
6. Connector:	BNC	TNC
7. Impedance:	50Ω	
8. Return loss:	≥15dB	≥20dB (*)
9. 1dB compression point:	+10dBm	
10. Third order intercept::	+20dBm	
TRANSFER CHARACTERISTICS		
11. Gain:	30 to 50dB, adjustable in 0.1dB steps	
12. Gain ripple:	over ±200MHz: ≤2dB p.t.p.	
	over ±40MHz: ≤1dB p.t.p.	
	over input band: ≤3dB p.t.p.	
13. Group delay distortion:	over ±5MHz <2ns	
	over ±20MHz <5ns	
14. Gain stability, 0°C to 50°C:	±1dB	
15. Frequency stability, 0°C to 50°C:	2 x 10 <sup>-7</sup>	Option 1: 10 <sup>-7</sup> Option 2: 10 <sup>-8</sup> Option 3: 3 x 10 <sup>-9</sup>
16. External reference:	10MHz, 0dBm	5MHz, 0dBm
17. Synthesiser step size:	1MHz	
18. Noise figure (full gain):	<17dB	
Spurii		
19. Image rejection:	>75dB	
20. In-band spurii (at 0dBm output):	<-60dBc	
PHASE NOISE		
21. 10Hz:	<-45dBc/Hz	
22. 100Hz:	<-70dBc/Hz	
23. 1kHz:	<-80dBc/Hz	
24. 10kHz:	<-85dBc/Hz	
25. 100kHz:	<-95dBc/Hz	
26. 1MHz:	<-110dBc/Hz	
27. Mains related:	<-60dBc	
MISCELLANEOUS		
28. Power supply:	115V/230V ±10% 50/60Hz ±10%, 30VA	
29. Mechanical:	1U 19" frame, 400mm deep	
30. Temperature:	Operating: 0° to 50°C	
	Storage: -40° to 85°C	
31. Relative humidity:	Operating: 0 to 90%	
	Storage: 0 to 95%	
32. Summary alarm:	NO and NC dry relay contacts via rear mounted connector	
33. Summary alarm indication:	Front panel LED	
34. Remote control:	RS232/RS485 serial interface	

(\*) Output compression point and overall gain decrease by 3dB.

### MODEL TABLE

Input Frequency	Output frequency and bandwidth		
	700 ± 200MHz	720 ± 40MHz	720 ± 20MHz
8.0 - 9.0GHz	D688	D687	D686