

## 43-46 GHz Frequency Down-Converter

- 20 GHz IF
- 23-26 GHz LO
- -50 dBc Spurious
- -40 dBc Harmonics
- -60 dBm LO Leakage
- VSWR <1.50:1
- Conv. Gain 23 dB



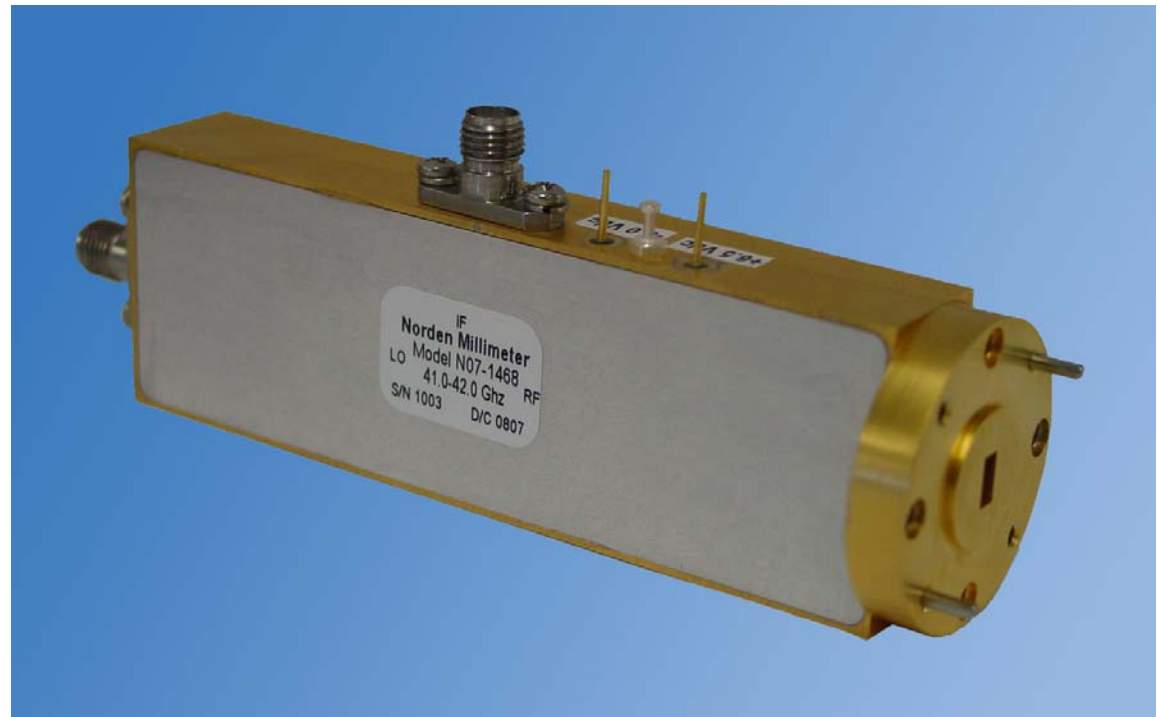
## 43-46 GHz Frequency Up-Converter

- 3 GHz IF
- 40-43 GHz LO
- Waveguide Filtering for
- -50 dBc Spurious
- -40 dBc Harmonics
- -50 dBm LO Leakage
- VSWR <1.70:1
- Conv. Gain 10 dB



## 41-42 GHz Frequency Up & Down Converters

- Common specs:
- 41-42 GHz RF
- 11.7-12.3 GHz IF
- 9.6-9.9 GHz LO X3
- LO Drive 0 to +3dBm
- 0.6"X1.2"X3.64"
- LO & IF SMA-F
- RF WR-22
- VSWR 2.00:1
- Up-Conv. Specs
- Conv. Gain 37/43 dB
- P-1 >30dBm
- Down-Conv. Specs
- Conv. Gain 20/25dB
- Noise Figure <4.0dB



## 9.5-12.5 GHz Down-Converter

- RF 9.5-12.5 GHz
- LO 9.5-12.5 GHz
- IF DC – 10 MHz
- NF 5 dB Max
- RF Out Sample +10 dBm
- Isolation > 25dB



## WR-15 CONVERTER

### 55 GHz Up-Converter

- LO 10.5 GHz X4 = 42 GHz
- IF = 13 GHz
- Conv Gain >27 dB
- Psat >20.0 dBm
- VSWR In/Out <2.00:1
- 12VDC @ 1400mA





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MILLIMETER WR-10 FREQUENCY CONVERTER

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## 94 GHz Frequency Up-Converter from Transceiver

- 2 GHz Bandwidth
- RF Pout +20dBm
- Conversion Gain >10dB
- -45 dBc Image Rejection
- -45 dBm LO Leakage





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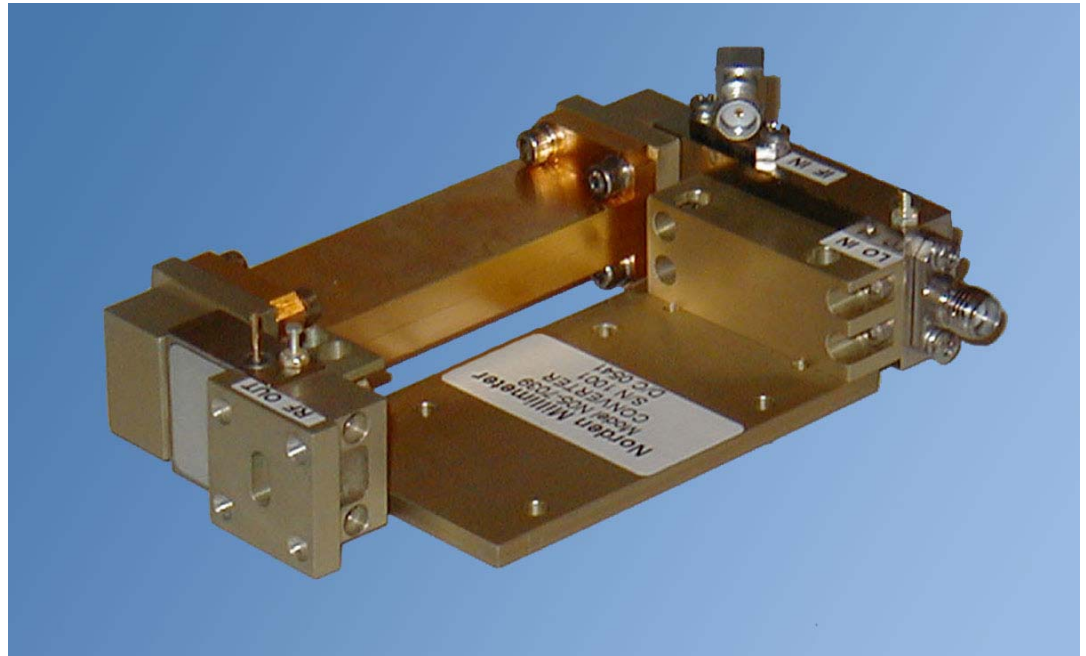
## 20 GHz Down-Converter

- Waveguide isolator 1.16:1 VSWR
- NF < 1.8 dB
- Gain > 60 dB
- Image Rejection > 33 dB
- Internal LO doubler 11 GHz to 22 GHz
- IF 1-2 GHz with IF amplifier



## 30 GHz Frequency Up-Converter

- 1.5 GHz Bandwidth
- X3 Multiplication on LO
- Waveguide Filtering for
- -60 dBc Spurious & Harmonics
- -60 dBc Image Rejection
- -60 dBc LO Leakage





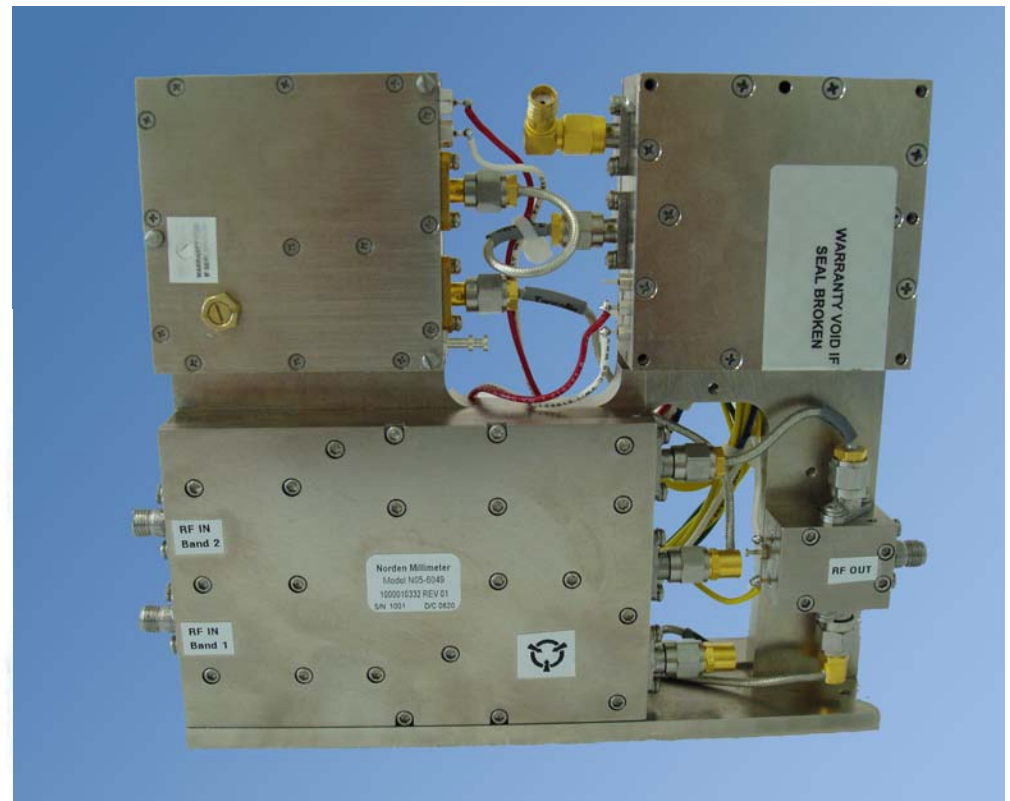
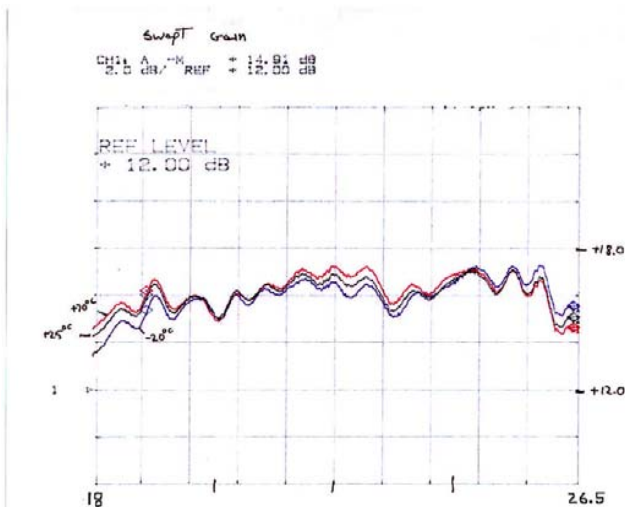
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MILLIMETER 18-40 GHz DOWN CONVERTER

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## 18-40 GHz Dual Down Converter

- 100 MHz Phase Locked OCXO Reference
- Phase Locked DRO 0.7° rms Integrated Phase Noise
- Gain Temperature Compensated
- 12-18 dB Conversion Gain
- 13 dB NF
- -90 dBm LO Leakage
- -65 dB Image Rejection
- -20° to +70° C Operation





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MILLIMETER **DUAL UP/DOWN CONVERTER**

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## 35 GHz Dual Up/Down Converter

- Internal common LO x2, 12.5 to 25 GHz
- RF 32-35 GHz
- IF 8-12 GHz
- Conversion Loss < 7dB
- Mixers phase matched to  $\pm 4$  Deg
- Balanced Diode Mixer

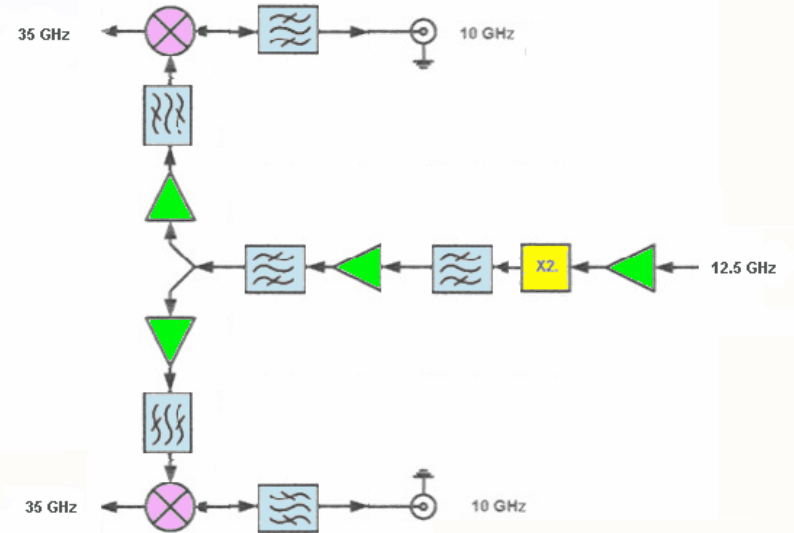
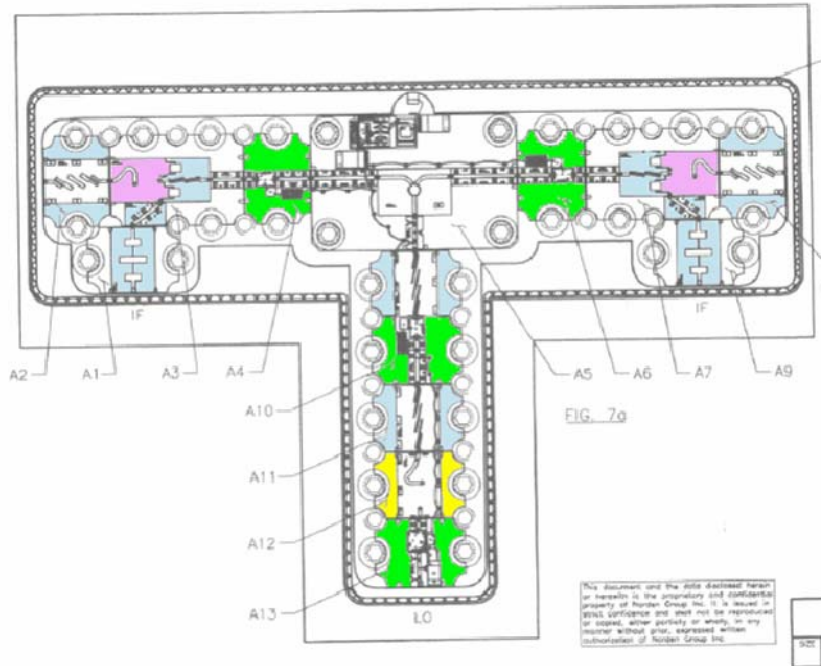




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# MILLIMETER DUAL UP/DOWN CONVERTER

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MILLIMETER **DUAL UP/DOWN CONVERTER**

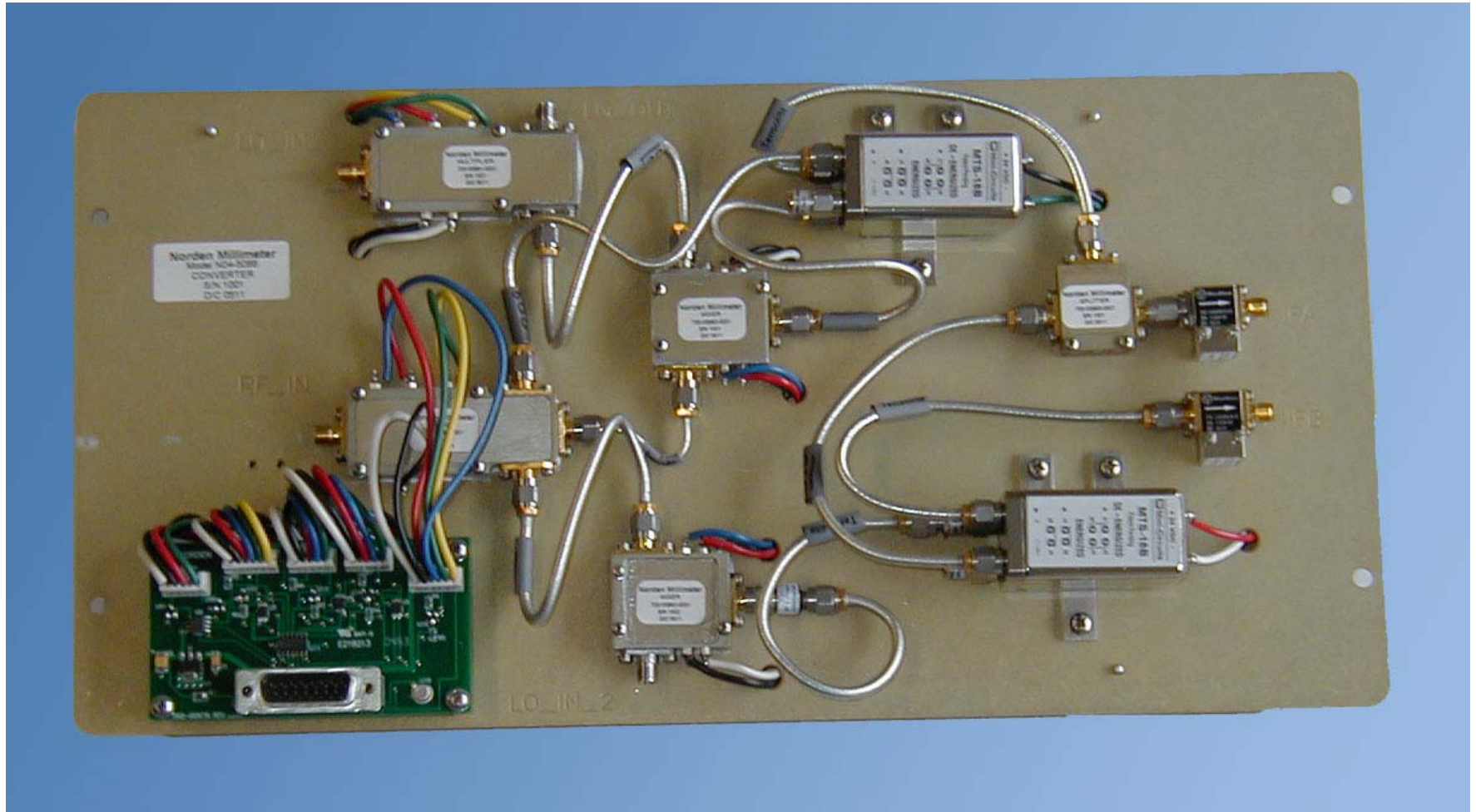
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## 35 GHz Dual Up/Down Converter

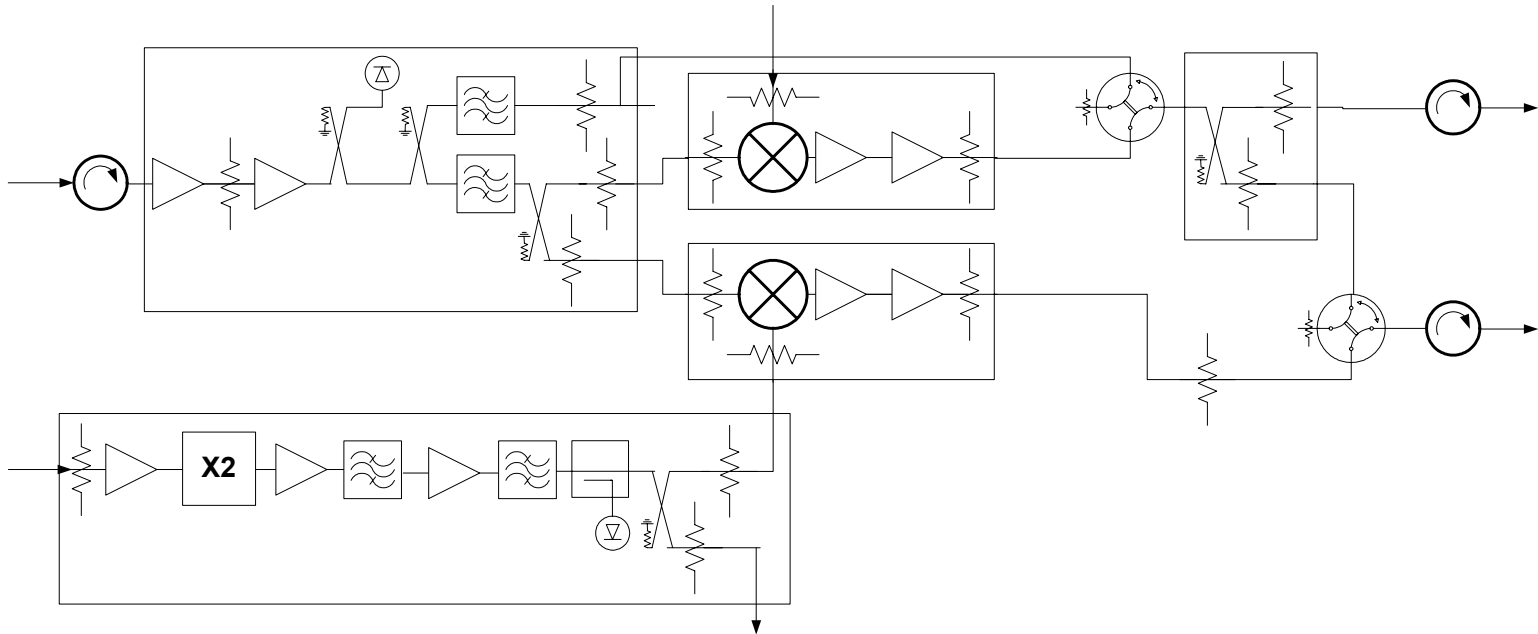
- RF 31-36.5 GHz
- LO 20.73-26.23 GHz
- IF 8-12 GHz
- Conversion Loss < 14 dB
- Mixers phase matched to  $\pm 4$  Deg
- High Linearity FET Mixer



8-18 GHz DOWN CONVERTER



**This is an 8 to 18 GHz Down-Converter for ground based signal analysis. The simplified block diagram is shown here, and a photo of the unit is shown on the next slide.**



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## Down Converter section

