

# SOLUTIONS UP TO 40 GHz



*RF and Microwave Amplifiers*

*Broadband and Narrow Band Amplifiers*

*Power and Low Noise Amplifiers*

*Surface Mount LNA*

*Optical Modulator Driver Amplifiers*

*Filter Integrated Frequency Multipliers*

## OFFERS...

Nextec offers flexibility to customers for quick, turnaround service of amplifiers and frequency multipliers. Design of custom product, quick delivery of standard product, as well as volume manufacturing in offshore locations, allowing for competitive pricing. Nextec is located in Santa Clara, California with locations in Seoul Korea, Jakarta Indonesia, and Shenzhen China. The goal for every product delivered is exceptional quality, backed by responsive Engineering and Sales support.

This catalogue provides an overview of Nextec's standard products and custom capabilities.

**SEE us for your ideal amplifier and filtered frequency multipliers.**



## PRODUCT INDEX ...

- **Amplifiers**
  - Millimeter-wave Amplifiers**
  - Broad Band Amplifiers**
  - Low Noise Broad Band Amplifiers**
  - Communication Band HPAs and LNAs**
  - OC-192 Modulator Driver**
- **Filter Integrated Frequency Multipliers**

### About Nextec Microwave and RF...

**Nextec Microwave & RF** was established in 1998 to design and market RF, Microwave, and Millimeter-wave products for the U.S. market. We have developed customized Thin Film Technology designed for robustness in our products. Nextec offers drop-in modules and board-level products, a standard line of miniature products as well as units which are tailored to specific customer specifications including carrier packaging. The Engineering and Sales Team work closely with the customer to satisfy every specification requirement. Ask for it, and you can get it.

### Product Line Includes ...

- Millimeter-wave Amplifiers
- Broad Band Amplifiers
- Communication Band HPAs and LNAs
- Component and Sub systems interface with Optical Systems
- Filtered Integrated Frequency Multipliers

### Design and Development ...

Nextec's designs employ a modular approach using the company's standard design library. This ensures maximum simplicity in production - quick production cycle and uniformly stable quality level. Designs are developed, updated, and verified for optimum performance, simplicity, reliability, and fast turnaround using the latest CAD and design software programs. Circuit modeling is performed for development of new and custom products. The depth of experience of Nextec's Engineering Staff enables us to provide design solutions for our customers.

Development of standard products has undergone a thorough development/test cycle to guarantee that the product consistently meets the specs. The company is focusing on amplifier products to meet the market needs as demanded.

Products are designed for utilization by a wide customer base. The amplifiers and frequency multipliers can be used for the following markets: telecommunications, defense radar, instrumentation, law enforcement, short range communications, radio astronomy, satellite service, and general purpose applications.

### About Nextec Engineering...

At Nextec, Engineering is always refined by accumulated production know-how to ensure maximum simplicity in production, eliminating many unnecessary processes, resulting in a quick production cycle and uniformly stable quality level. Consistent quality of product is maintained by an extensive inventory of test equipment, which is calibrated to the requirements of MIL-STD 45662A. Nextec's internal processes guarantee consistent quality by controlled documentation procedures from Engineering to shipment of Nextec's products. Products are designed for high volume manufacturing.

### **Manufacturing at Nextec...**

Manufacturing is controlled by well-documented procedures and documentation for the products being manufactured. These procedures ensure that processes are followed on a uniform basis for best results.

Production is facilitated by a team of dedicated assembly/technical assistants and engineers. They are cross-trained to maximize efficiency of production. In addition to design and manufacturing, prototype through production, Nextec also offers contract manufacturing. ISO 9001 processes are employed by each and every assembly individual as well as by supervisory staff. All finished products are inspected in accordance with the drawing specification and each line has its own finished-goods inspector.

### **Quality Assurance at Nextec...**

Nextec Microwave's Quality System for all products, both commercial and military, is ensured by employee involvement and participation in our Quality System. It ensures the quality parameters meet the customer's requirements. Burn-In and various reliability tests are performed. These tests are designed to eliminate early failures and to ensure performance of the product in all environmental conditions. Nextec is committed to furnishing RF and Microwave components of the highest quality. High quality is achieved through implementation of Nextec Quality Program, which is based on military standards for inspection (MIL-STD 105, MIL-Standard 45208) and test (MIL-STD 883, MIL-STD 202).

### **Contract Manufacturing...**

Manufacturing is done under stringent Quality Assurance and control standards, which meet the strict visual and screening requirements of IPC-610. Transformers, frequency mixers, power splitters, amplifiers, fixed attenuators, band-pass and ceramic filters as well as voltage control oscillators and directional couplers are some of the products which are typically manufactured for other manufacturers. An Electrostatic Discharge (ESD) Control program provides for protection of electronic parts and equipment. All products must survive elevated temperature aging test (minimum 48 hours at 40 ~ 60°C) and environmental tests for low and high temperature (-40 ~ 80°C). Burn-in and various reliability tests are also performed to prevent early failure and ensure performance.

### **Customer Services / Sales...**

Nextec Microwave and RF believes in fast response to inquiries from potential customers on our products as well as responding to any questions regarding on-going orders, repairs, and answering questions regarding development projects which are ongoing. Repairs are given top priority. Nextec's products are guaranteed for a one-year period.

### Broadband Amplifiers ...

Model	Frequency	Gain	Power	OIP3	Noise Figure	VSWR (in / Out)	Bias
NB00378	26.0-40.0 GHz	21 dB	19 dBm	28 dBm	9 dB	1.9 / 1.9	300mA @ 12V, 5mA @ -5V
NB00377	18-26.5 GHz	22 dB	20 dBm	29 dBm	9 dB	1.9 / 1.9	290mA @ 12V, 5mA @ -5V
NB00407	12.7-26.5 GHz	20 dB	10 dBm	-	5 dB	2.0 / 2.0(max)	50mA @ 12V
NB00376	6.0-18.0 GHz	22 dB	20 dBm	29 dBm	9 dB	1.9 / 1.9	250mA @ 12V, 5mA @ -5V
NB00375	2.0-8.0 GHz	22 dB	22 dBm	30 dBm	6 dB	2.0 / 2.0 (max)	190mA @ 15V
NB00391	2.0-18.0 GHz	22 dB	20 dBm	29 dBm	9 dB	1.9 / 1.9	250mA @ 12V, 5mA @ -5V
NB00383	2.0-8.0 GHz	30 dB (min)	30 dBm (min)	39 dBm	5 dB	2.0 / 2.0 (max)	1.3A @ 12V (max)
NB00415	1-500 MHz	44 dB	38 dBm	49 dBm	7 dB	1.4 / 2.2	2.7A @ 24V

### Broad Band Low Noise Amplifiers ...

Model	Frequency	Gain	Noise Figure	OIP3	VSWR (in / Out)	Bias
NBL00397	28.0-37.0 GHz	20 dB	2.5 dB	-	1.9 / 1.9	75mA @ 12V
NBL00395	18.0- 32.0 GHz	20 dB	2.5 dB	-	1.9 / 1.9	50mA @ 12V
NBL00396	18.0-26.5 GHz	20dB	2.5 dB	-	1.9 / 1.9	50mA @ 12V
NBL00419	4.0-8.0 GHz	30 dB	1.7 dB	-	2.0 / 2.0 (max)	90mA @ 15V
NBL00416	3.0-8.0 GHz	30 dB (min)	2.5 dB	39 dBm	2.0 / 2.0 (max)	1.0A @ 12V

Nextec's Broad Band Amplifiers are designed for Commercial, Military, and General Purpose Test applications.

A thin film MIC process is used to achieve robust characteristics. The amplifiers are characteristically small in size, high gain and output power with internally protected voltage regulators and can be biased in a wide range of DC voltage. The above products are all standard products.

If you don't see the exact amplifier that you want, please inquire at [sales@nextec-rf.com](mailto:sales@nextec-rf.com) or call Sales at 408-727-1189. Custom designed products are available. Nextec's products are designed to meet the demands of high volume manufacturing.



### ... Broadband Amplifiers ...

## Modulator Driver Amplifier ...

Model	Frequency	Output Voltage	Rise/Fall Time	Jitter (RMS)	Eye Cross Adjust Range	Bias-T Output	Bias
NP00392	0.03-11000 MHz	4.0-7.5 V	32 psec (max)	2.5 psec (rms) (max)	±15% (+/-%)	-10 to +15 V	250mA @ 7.5V

A **minimum** order of 100 each is required for this product. Please inquire if we have any product in stock.

**Nextec's** Modulator Driver is idea for driving a LiNbO3 optic modulator at OC-192 rates to 12.5 Gbps.

The NP00392 could be used as a receiver, as a wideband amplifier in RF system, and in instrumentation.

The module is capable of saturated output 7.5V (~21.5dBm) from a 500 mV input. Output level adjust and crossing offset adjust pins are options. Biases are externally adjustable for possible use with other waveforms and mark ratios. The module features integrated dc blocks and bias-tee.

If you don't see the exact amplifier that you want, please inquire at [sales@nextec-rf.com](mailto:sales@nextec-rf.com) or call Sales at 408-727-1189. Variation of standard products or custom designed products are available. Nextec products are designed to meet the demands of high volume manufacturing.



**NP00392**

**... Modulator Driver ...**

**Power Amplifiers ...**

Model	Frequency	Gain	Power	OIP3	Noise Figure	VSWR	Bias
NA00414	4.4-5.0 GHz	23 dB	23 dBm	33 dBm	3.5 dB	1.3 / 1.3	200 mA @ 15V
NA00251	2.150-2.170GHz	32 dB	4FA CDMA 0.6 W		10 dB(max)	1.4 / 1.4(max)	2.5A @ 12V(max)
NA00270	2.110-2.170 GHz	30 dB	35 dBm	51 dBm		1.4 / 1.5(max)	3A @ 12V(max)
NA00410	1.930-1.990 GHz	29 dB (min)	CDMA 1 W	51 dBm		1.4 / 1.5(max)	3A @ 12V(max)
NA00259	1.840-1.870 GHz	50 dB	3FA CDMA 16 W			1.5 / 1.5(max)	7A @ 27V (max)
NA00260	1.840-1.870 GHz	50 dB	3FA CDMA 25W			1.5 / 1.5(max)	9A @ 27V(max)
NA00258	1.840-1.870 GHz	50 dB	3FA CDMA 10 W	60 dBm		1.5 / 1.5(max)	10A @ 27(max)
NA00234	1.840-1.870 GHz	35 dB	CDMA 0.6W	50 dBm	10 dB(max)	1.5 / 1.5(max)	2A @ 12V(max)
NA00250	1.487-1.507 GHz	55 dB (min)	37 dBm (min)		8 dB (max)	1.3 / 1.3(max)	3A @ 12V(max)
NA00292	870-880 GHz	54 dB	CDMA 30W	70 dBm (min)	10 dB(max)	1.4 / 1.3(max)	10A @ 27V(max)
NA00398	870-880 MHz	44 dB (min)	3FA CDMA 25W		10 dB(max)	1.4 / 1.3(max)	5.5A @ 27V(MAX)
NA00281	869-894 MHz	35 dB	CDMA 0.6 W	54 dBm		1.5 / 1.3(max)	1.4A @ 12V(max)
NA00273	824-849 Mhz	35 dB	CDMA 0.6 W	54 dBm	10 dB(max)	1.5 / 1.3(max)	1.5A @ 12V(max)

**Nextec's** High Power Amplifiers are ideal for application in Base Stations, Repeaters for IMT-2000, GSM 800/900 MHz Network., Scientific Research, Radio Astronomy, Wireless Communication, and Defense and Federal Law. The amplifiers have high linearity and efficiency with high gain and reliability. Various customized alarm and protection implementation is included in the amplifiers.

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**... High Power Amplifier ...**

## Surface Mount Low Noise Amplifiers ...

Model	Frequency	Gain	Noise Figure	OIP3	VSWR	Bias
NL00393	1.920 - 1.990 GHz	22.5dB	1.0dB	39dBm	1.5 / 1.5 (max)	230mA @ 6V (max)
NL00394	1.920 - 1.990 GHz	24 dB	1.0dB	34dBm	1.5 / 1.5 (max)	145mA @ 6V ( max)
NL00379	1.850 - 1.910 GHz	23 dB	1.1dB	39dBm	1.5 / 1.5 (max)	230mA @ 6V (max)
NL00380	1.850 - 1.910 GHz	25 dB	1.1dB	34dBm	1.5 / 1.5 (max)	145mA @ 6V (max)
NL00390	890 - 915 MHz	30 dB	1.1dB	40dBm	1.5 / 1.5 (max)	230mA @ 6V (max)
NL00389	824 - 849 MHz	31 dB	1.1dB	40dBm	1.5 / 1.5 (max)	230mA @ 6V (max)

**Nextec's** surface mount LNA was designed to offer price competitive, space-limited, easy-to-use solution to design engineers in the mobile communication area. You can save design lead time, and manufacturing cost by utilizing this pre-matched amplifier module. You can save design lead time, and manufacturing cost by utilizing this pre-matched amplifier module.

The surface mount LNAs are linear with noise figure operating at room temperature as low as 1.1 dB. Output IP3 with +10 dBm/tone output power is 39 dBm. The size is about 0.50" x 0.53".

Application is PCS, Cellular Communication Equipment. If you don't see the exact amplifier that you want, please inquire at [sales@nextec-rf.com](mailto:sales@nextec-rf.com) or call Sales at 408-727-1189. Custom designed products are available. Nextec's products are designed to meet the demands of high volume manufacturing.

High  
Volume  
in any  
Frequency  
Band



"Smaller than a 10¢ Dime"

... Surface Mount Mini Low Noise Amplifiers ...

**Low Noise Amplifiers (Coaxial) ...**

Model	Frequency	Gain	Noise Figure	OIP3	VSWR (in / Out)	Bias
NLC00413	14.0-15.0 GHz	14 dB	2.3 dB	-	1.7 / 1.7 (max)	50 mA @ 15V
NLC00412	13.0-14.0 GHz	17 dB	2.5 dB	-	2.0 / 2.0 (max)	50 mA @ 15V
NLC00410	12.0-13.0 GHz	18 dB	2.5 dB	-	2.0 / 2.0 (max)	50 mA @ 15V
NLC00409	10.0-12.0 GHz	18 dB	2.5 dB	-	2.0 / 2.0 (max)	50 mA @ 15V
NLC00408	9.0-10.0 GHz	19 dB	2.4 dB	-	2.0 / 2.0	50 mA @ 15V
NLC00374	2.2-2.7 GHz	28 dB	1.5 dB (max)	34 dBm (min)	1.5 / 1.5 (max)	310 mA @ 15V (max)
NLC00363	2.110-2.170 GHz	40 dB	1.2 dB (max)	37 dBm (min)	1.3 / 1.3 (max)	600 mA @ 10V (max)
NLC00362	1.920-1.990 GHz	40 dB	1.2 dB (max)	37 dBm (min)	1.3 / 1.3 (max)	600 mA @ 10V (max)
NLC00361	1.920-1.990 GHz	25 dB	1.2 dB (max)	35 dBm (min)	1.3 / 1.5 (max)	270 mA @ 5V (max)
NLC00360	1.920-1.990 GHz	30 dB	1.2 dB (max)	35 dBm (min)	1.3 / 1.3 (max)	320 mA @ 8V (max)
NLC00353	1.850-1.910 GHz	16.5 dB	1.5 dB (max)	34 dBm (min)	1.5 / 1.5 (max)	160 mA @ 15V (max)
NLC00359	1.850-1.1910 GHz	28 dB	1.2 dB (max)	35 dBm (min)	1.5 / 1.5 (max)	270 mA @ 5V (max)
NLC00357	1.850-1.910 GHz	38 dB	1.2 dB (max)	35 dBm (min)	1.3 / 1.5 (max)	370 mA @ 5V (max)
NLC00354	1.850-1.910 GHz	25 dB	1.5 dB (max)	38 dBm (min)	1.5 / 1.5 (max)	290 mA @ 15V (max)
NLC00350	1.750-1.780 GHz	25 dB	1.2 dB (max)	30 dBm (min)	1.4 / 1.4 (max)	250 mA @ 8V (max)
NLC00335	1.750-1.780 GHz	30 dB	1.2 dB (max)	25 dBm (min)	13 / 1.3 (max)	200 mA @ 9V (max)
NLC00340	1.750-1.780 GHz	37 dB (min)	1.2 dB (max)	35 dBm (min)	1.3 / 1.3 (max)	430 mA @ 8V (max)
NLC00329	1.1710-1.780 GHz	40 dB	1.2 dB (max)	34 dBm (min)	1.4 / 1.4 (max)	350 mA @ 8V (max)
NLC00327	1.710-1.780 GHz	30 dB	1.0 dB (max)	34 dBm (min)	1.4 / 1.4 (max)	300 mA @ 8V (max)
NLC00343	1.710-1.780 GHz	38 dB	1.2 dB (max)	37 dBm (min)	1.5 / 1.5 (max)	600 mA @ 8V (max)
NLC00373	1.560-1.600 GHz	39 dB (min)	1.1 dB (max)	35 dBm (min)	1.3 / 1.5 (max)	370 mA @ 5V (max)
NLC00372	1.525-1.559 GHz	30 dB	1.1 dB (max)	35 dBm (min)	1.3 / 1.5 (max)	270 mA @ 5V (max)
NLC00312	869-894 MHz	30 dB	1.2 dB (max)	34 dBm (min)	1.5 / 1.5 (max)	300 mA @ 8V (max)
NLC00314	869-894 MHz	40 dB	1.2 dB (max)	34 dBm (min)	1.4 / 1.4 (max)	360 mA @ 15V (max)
NLC00323	824-849 MHz	29 dB	1.3 dB (max)	30 dBm (min)	1.3 / 1.3 (max)	300 mA @ 8V (max)

If you don't see the exact amplifier that you want, please inquire at [sales@nextec-rf.com](mailto:sales@nextec-rf.com) or call Sales at 408-727-1189. Custom designed products are available. Nextec's products are designed to meet the demands of high volume manufacturing.

**... LOW NOISE AMPLIFIERS ...**

### Low Noise Amplifiers (Coaxial) continued ...

Model	Frequency	Gain	Noise Figure	OIP3	VSWR	Bias
NLC00321	824-849 MHz	15 dB (min)	1.5 dB (max)	32 dBm (min)	1.3 / 1.3 (max)	170 mA @ 8V (max)
NLC00311	824-849 MHz	30 dB	1.2 dB (max)	34 dBm (min)	1.5 / 1.5 (max)	300 mA @ 8V (max)
NLC00320	824-849 MHz	27 dB	1.5 dB (max)	37 dBm (min)	1.5 / 1.5 (max)	220 mA @ 15V (max)
NLC00324	824-849 MHz	26.5 dB	1.2 dB (max)	30 dBm (min)	1.3 / 1.3 (max)	300 mA @ 8V (max)
NLC00326	824-849 MHz	37 dB	1.2 dB (max)	35 dBm (min)	1.3 / 1.3 (max)	300 mA @ 8V (max)
NLC00313	824-849 MHz	40 dB	1.2 dB (max)	34 dBm (min)	1.4 / 1.4 (max)	360 mA @ 15V (max)

**Nextec's** Low Noise Amplifiers for Cellular, PCS, and IMT-2000, up to 15 GHz Narrow Band are designed for Repeater and Base Stations in Mobile Communication Systems. We pride ourselves on offering customized products. The specifications are guaranteed for overall operation temperature.

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... LOW NOISE AMPLIFIERS ...

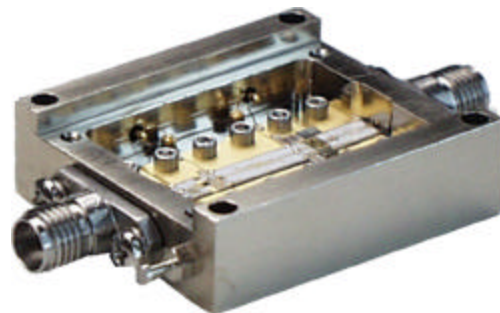
## Frequency Multipliers ...

Model	Frequency (Out)	Frequency (In)	Power	Rejection (fund.)	Rejection (3 <sup>rd</sup> )	VSWR (In / Out)	Bias
NX00406	36.0-40.0 GHz	18.0-20.0 GHz	16 dBm	25 dBc	-	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00405	34.0-38.0 GHz	17.0-19.0 GHz	16 dBm	25 dBc	-	1.9 / 1.9	450 mA @ 12V, 6mA @ -5V
NX00404	32.0-36.0 GHz	16.0-18.0 GHz	17 dBm	30 dBc	-	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00403	30.0- 34.0 GHz	15.0-17.0 GHz	17 dBm	35 dBc	-	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00402	28.0-32.0 GHz	14.0-16.0 GHz	18 dBm	40 dBc	-	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00401	26.0 - 30.0 GHz	13.0-15.0 GHz	20 dBm	50 dBc	45 dBc	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00400	24.0-28.0 GHz	12.0-14.0 GHz	20 dBm	50 dBc	45 dBc	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00389	22.0-26.0 GHz	11.0-13.0 GHz	20 dBm	50 dBc	45 dBc	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00387	20.0- 24.0 GHz	10.0-12.0 GHz	20 dBm	50 dBc	45 dBc	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V
NX00384	18.0-22.0 GHz	9.0 -11.0 GHz	20 dBm	50 dBc	45 dBc	1.9 / 2.0	450 mA @ 12V, 6mA @ -5V

**Nextec's** Filter-Integrated Frequency Multipliers are highly integrated microwave assemblies that include buffer amplifier, balanced diode doubler, band-pass filter, output power amplifier, and low-pass filter. The units are designed to provide high power and pure signal. The multipliers incorporate protected voltage regulators.

The frequency multipliers are ideal for use with receivers, instruments, radio astronomy application, and Satcom products.

If you don't see the exact multiplier that you want, please inquire at [sales@nextec-rf.com](mailto:sales@nextec-rf.com) or call Sales at 408-727-1189. Custom designed products are available. Nextec's products are designed to meet the demands of high volume production.



**... FILTERED INTEGRATED  
FREQUENCY MULTIPLIERS ...**

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