



EPX Microwave provides cost effective designs and products from your early prototyping phase through to production requirements. Engineering resources will interface with your design team to maximize first pass success. EPX assists with low to high volume manufacturing. For custom active components, EPX offers coaxial connectorized and SMD packages.

## Amplifier

EPX standard amplifiers and low noise amplifiers

- Frequency range 1 to 40GHz
- Output power 27dBm max.
- Internal regulation available
- Standard amplifiers in commercial bands
- Low noise amplifiers with noise figure 2.0 max.
- Connectorized or SMD packages
- Customized amplifiers with choices in frequency range, gain, output power, attenuation, noise figure, DC supply voltage and current consumption.

## Mixer

EPX IQ / image rejection mixers and double balanced mixers

- LO and RF frequency range 1.8 to 41GHz
- IF frequency range 1.5 to 8GHz
- Double balanced or subharmonic design
- Conversion loss 12dB max.
- Connectorized or SMD packages
- Customized mixers with choices in frequency range, image rejection, output power and LO drive.

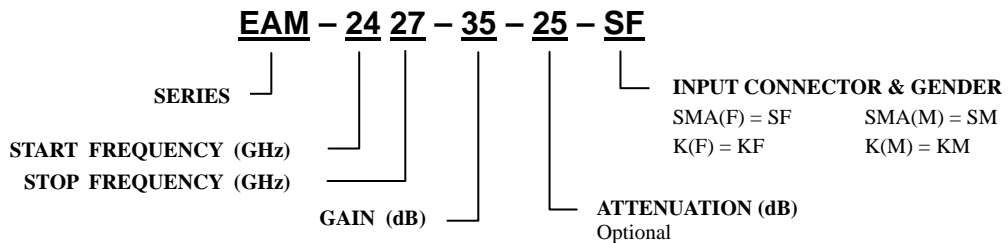
## AMPLIFIER



### Features:

Amplifier Type:	Coaxial
Frequency Range:	DC – 40GHz
Gain:	20 dB, nom
Characteristics Impedance:	50Ω
RF Connectors:	SMA, K
DC Connectors:	Solder Pins
Temperature Range:	-40 to +50 Degree C
Humidity:	1X10-5 std cc He/sec at 1 ATM

### Amplifier:



### Standard Amplifiers

#### Communication Band

Model	Frequency (GHz)	Gain (dB)	Noise Figure (dB)	1dB Compression (dBm)	Output IP3 (dBm)
EAM-5359-20-SF	5.3 – 5.9	20	3.5	11	21
EAM-5872-20-SF	5.85 – 7.2	20	3.7	11	21
EAM-130150-12-SF	13 – 15	12	5	16	31
EAM-130150-24-SF	13 – 15	24	5	16	31

#### Broadband

Model	Frequency (GHz)	Gain (dB)	Noise Figure (dB)	1dB Compression (dBm)	Output IP3 (dBm)
EAM-4080-20-SF	4 – 8	20	6	9	20
EAM-80120-12-SF	8 – 12	12	5	15	31
EAM-80120-24-SF	8 – 12	24	5	15	31
EAM-110150-24-SF	11 – 15	24	5	16	31

### Customized Amplifiers

EPX is ready to assist in the selection of the most appropriate product in your application. Our design engineers are happy to work with you to develop new solutions. The following are examples of amplifiers customized for specific application.

Model	Frequency (GHz)	Gain (dB)	Attenuation (dB)	Noise Figure (dB)	1dB Compression (dBm)	Output IP3 (dBm)
EAM-2427-35-25-SF	2.4 – 2.7	35	25	7.5	28	34
EAM-300305-18-16-KF	30 – 30.5	18	16	3.5	12	22

Specifications subject to change without notice

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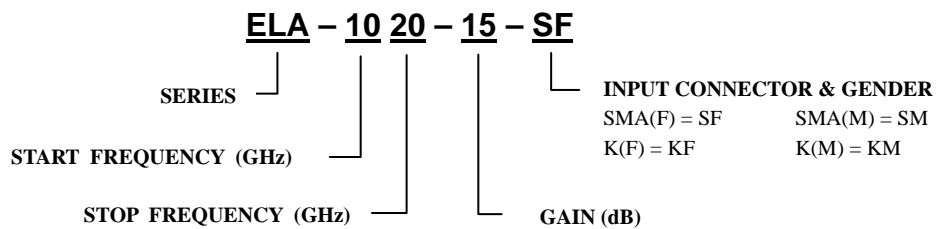
## LOW NOISE AMPLIFIER

### Features:



Amplifier Type:	Coaxial
Frequency Range:	DC - 40GHz
Gain:	20 dB, nom
Characteristics Impedance:	50Ω
RF Connectors:	SMA, K
DC Connectors:	Solder Pins
Temperature Range:	-40 to +50 Degree C
Humidity:	1X10-5 std cc He/sec at 1 ATM

### Low Noise Amplifier:



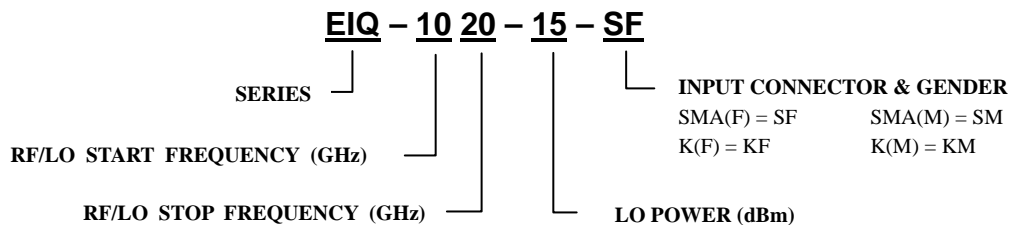
### Standard Low Noise Amplifiers

Model	Frequency (GHz)	Gain (dB)	Noise Figure (dB)	1dB Compression (dBm)	Output IP3 (dBm)
ELA-1020-15-SF	1 - 2	15	1.5	18	27
ELA-1040-15-SF	1 - 4	15	1.5	18	27
ELA-2040-15-SF	2 - 4	15	1.5	18	27
ELA-2060-15-SF	2 - 6	15	1.5	18	27
ELA-2080-14-SF	2 - 8	14	1.8	18	27
ELA-4080-14-SF	4 - 8	14	1.8	18	27
ELA-50100-14-SF	5 - 10	14	2.0	18	27
ELA-70120-13-SF	7 - 12	13	2.0	18	27
ELA-70120-20-SF	7 - 12	20	2.0	6	15
ELA-70140-20-SF	7 - 14	20	2.0	6	15
ELA-80120-20-SF	8 - 12	20	1.8	5	14
ELA-80140-20-SF	8 - 14	20	2.0	5	14
ELA-120140-20-SF	12 - 14	20	2.0	5	14

**IQ / IMAGE REJECTION MIXER**

**Features:**

Mixer Type:	Coaxial
RF / LO Frequency:	DC – 41 GHz
IF Frequency:	DC – 5 GHz
Conversion Loss:	9 – 12 dB, nom.
LO Power:	15 – 17 dBm
Characteristics Impedance:	50Ω
RF Connectors:	SMA, K
Temperature Range:	-40 to +50 Degree C
Humidity:	1X10 <sup>-5</sup> std cc He/sec at 1 ATM

**IQ / Image Rejection Mixer:**

**Standard IQ / Image Rejection Mixer**

Model	RF / LO Frequency (GHz)	IF Frequency (GHz)	Conv. Gain (dB)	Image Rej. (dB)	IIP3 (dBm)	LO Power (dBm)
EIQ-059120-18	5.9 – 12.0	DC – 1.5	-9.0	27	15	18
EIQ-060100-15	6.0 – 10.0	DC – 3.5	-8.0	35	19	15
EIQ-085135-15	8.5 – 13.5	DC – 3.5	-9.0	25	20	15
EIQ-110160-15	11.0 – 16.0	DC – 3.5	-8.5	25	19	15
EIQ-150236-17	15.0 – 23.6	DC – 3.5	-10.5	20	17	17
EIQ-220320-17	22.0 – 32.0	DC – 3.5	-12.0	18	17	17
EIQ-040085-15	4.0 – 8.5	DC – 3.5	-8.5	30	20	15
EIQ-310380-17	31.0 – 38.0	DC – 3.5	-12.0	10	16	17
EIQ-360410-17	36.0 – 41.0	DC – 3.5	-12.0	9	17	17
EIQ-190330-16	19.0 – 33.0	DC – 5.0	-9.0	20	14	16

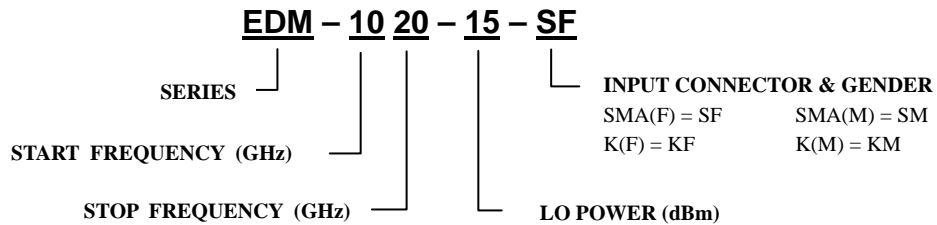
## DOUBLE BALANCED MIXER



### Features:

Mixer Type:	Coaxial
Frequency Range:	DC – 40GHz
Gain:	20 dB, nom
Characteristics Impedance:	50Ω
RF Connectors:	SMA, K
DC Connectors:	Solder Pins
Temperature Range:	-40 to +50 Degree C
Humidity:	1X10-5 std cc He/sec at 1 ATM

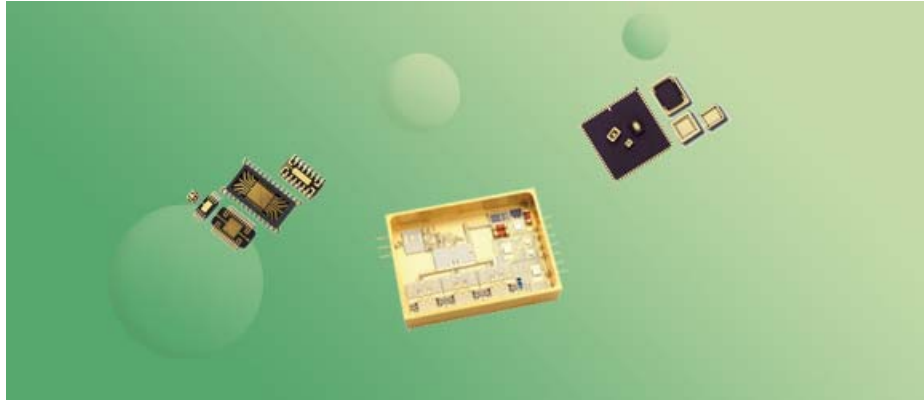
### Double Balanced Mixer:



### Standard Double Balanced Mixer

Model	RF / LO Frequency (GHz)	IF Frequency (GHz)	Conv. Gain (dB)	P1dB (dB)	IIP3 (dBm)	LO Power (dBm)
EDM-018050-15	1.8 – 5.0	DC – 3.0	-8	10	16	15
EDM-040080-15	4.0 – 8.0	DC – 3.0	-8	10	15	15
EDM-060110-15	6.0 – 11.0	DC – 2.0	-8	9	15	15
EDM-060180-20	6.0 – 18.0	DC – 6.0	-11	15	20	20
EDM-050200-20	5.0 – 20.0	DC – 3.0	-11	15	19	20
EDM-140230-15	14.0 – 23.0	DC – 2.0	-11	7	16	15
EDM-140260-13	14.0 – 26.0	DC – 8.0	-8.5	11	18	13
EDM-180320-13	18.0 – 32.0	DC – 8.0	-10	12	17	13
EDM-250400-13	25.0 – 40.0	DC – 8.0	-10.5	11	17	13

## MICROSYSTEMS



### MICROSYSTEMS PRODUCT

Microsystems are a new level of integrated designs for RF and microwave markets. These products are designed to minimize complexity in system integration. Yet the design and assembly of the product itself is complex. This facilitates the cost and size of over all system.

The manufacture technique is time proven MIC technology. The approach is multiple chips module (MCM). The product can consist of multiple MCM to fit into a single package for complex integrated system.

Applications include RF / Microwave transmitters and receivers in different frequency bands.

### BENEFIT

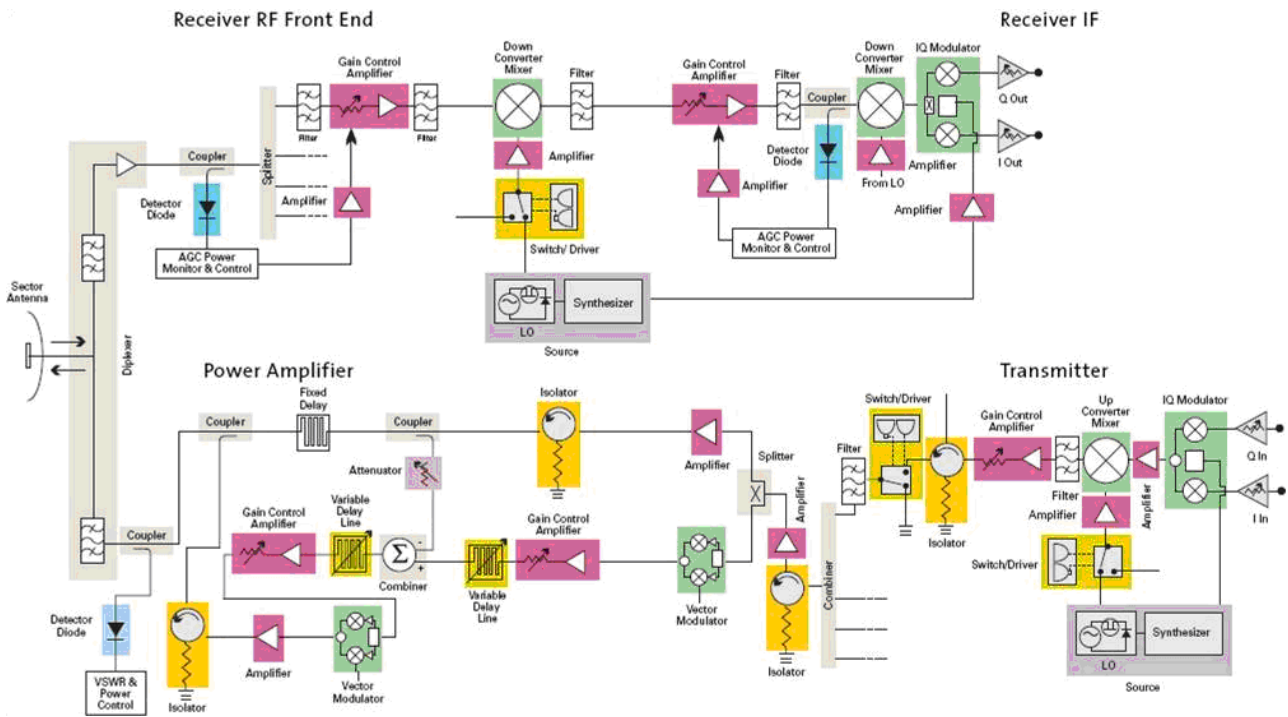
- Reduce system complexity by integrating multiple functional circuits into a single package
- Minimize interconnecting connector and cable
- Simplify system integration
- Reduce system package size and weight
- Provide internal matching and filtering that simplify the over all system design

### CAPABILITIES

Frequency Range	RF Subsystems	Technologies
DC – 100GHz	Amplifier Assemblies	MIC
	Up / Down Converters	
	Passive	MMIC
	RF Sources	
	Attenuators / Switches	
Detectors	SMT	
Filtering		

## PRODUCT TYPICAL (CUSTOM)

Integrated products can be any combination of active components providing a high degree of functional feasibility. The various combinations can be amplifier with doubler, amplifier with variable attenuator or consists of all three components.



- **Amplifier :**
  - Power divider with amplifier
  - Solid state switch with amplifier
  - Amplifier with filter
  - Amplifier with detector output
  - Amplifier with variable attenuator
  - Others.....
- **Frequency Converter:**
  - Frequency doubler with amplifier
  - Frequency up converter with mixer
  - Frequency down convert with mixer
- **Diplexer**
- **Filter**
- **Transmitters & Receivers**