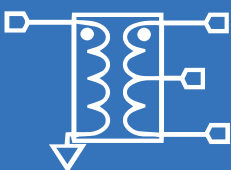


# 5G

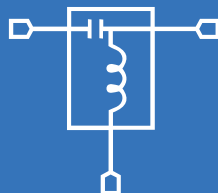
## & mmWave



Amplifiers



Baluns



Bias Tees



Couplers



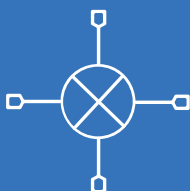
Equalizers



Filters



Hybrids



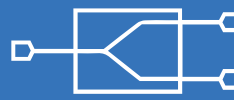
IQ Mixers



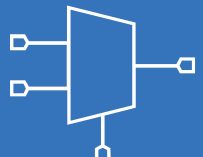
Mixers



Multipliers



Power  
Dividers



Other  
Products



At Marki Microwave we design our components to achieve the highest performance over extremely wide bandwidths. We have an extensive catalog of bare die, surface mount, and coaxial-connectorized solutions up to 85GHz to support all of your millimeter-wave design and testing needs.

**5G:** The 28 & 39GHz bands of today, the 47GHz band (& above) of tomorrow

**60GHz Band:** 5G, point-to-point, WiGig (802.11ad, 802.11ay), industrial sensors

**Sub-6GHz:** Visit [www.markimicrowave.com](http://www.markimicrowave.com) for a large selection of components for sub-6GHz applications, including wider bandwidths to support harmonic testing.

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# 5G

## PASSIVE CONNECTORIZED MODULES

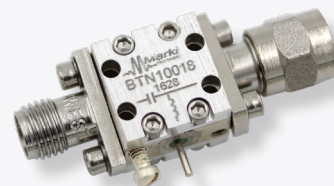
### SINGLE-ENDED TO DIFFERENTIAL BALUNS (180° SPLITTERS)

[BAL-0036](#), DC-36GHz  
[BAL-0050](#), DC-50GHz  
[BAL-0067](#), DC-67GHz



### BIAS TEES

[BTN-0040](#), DC-40GHz, 0.5A, 30V  
[BTN1-0040](#), DC-40GHz, 1A, 50V  
[BTN2-0040](#), DC-40GHz, 2A, 50V  
[BTN-0050](#), DC-50GHz, 0.5A, 30V  
[BTN1-0050](#), DC-50GHz, 1A, 50V  
[BTN2-0050](#), DC-50GHz, 2A, 50V  
[BTN-0065](#), DC-65GHz, 0.5A, 30V



### COUPLERS, STRIPLINE DIRECTIONAL

[C13-0140](#), 1-40GHz, 13dB Coupling  
[C20-0240](#), 2-40GHz, 20dB Coupling  
[C13-0150](#), 1-50GHz, 13dB Coupling  
[C10-0450](#), 4-50GHz, 10dB Coupling  
[C10-0667](#), 6-67GHz, 10dB Coupling  
[C16-0667](#), 6-67GHz, 16dB Coupling  
[C20-0667](#), 6-67GHz, 20dB Coupling

### COUPLERS, LOW LOSS HIGH POWER

[CA-40](#), DC-40GHz, 0.5dB Loss, 20W CW  
[CA-50](#), DC-50GHz, 0.5dB Loss, 15W CW

### QUADRATURE HYBRID (90°) COUPLERS

[QH-0440](#), 4-40GHz, 3dB Coupling  
[QH-0550](#), 5-50GHz, 3dB Coupling  
[QH-0867](#), 8-67GHz, 3dB Coupling



### POWER DIVIDERS, WILKINSON 1:2

[PD-0140](#), 1-40GHz  
[PD-0440](#), 4-40GHz, Low Loss  
[PD-0150](#), 1-50GHz  
[PD-0450](#), 4-50GHz, Low Loss  
[PD-0165](#), 1-65GHz  
[PD-0465](#), 4-65GHz, Low Loss

### POWER DIVIDERS, WILKINSON 1:4

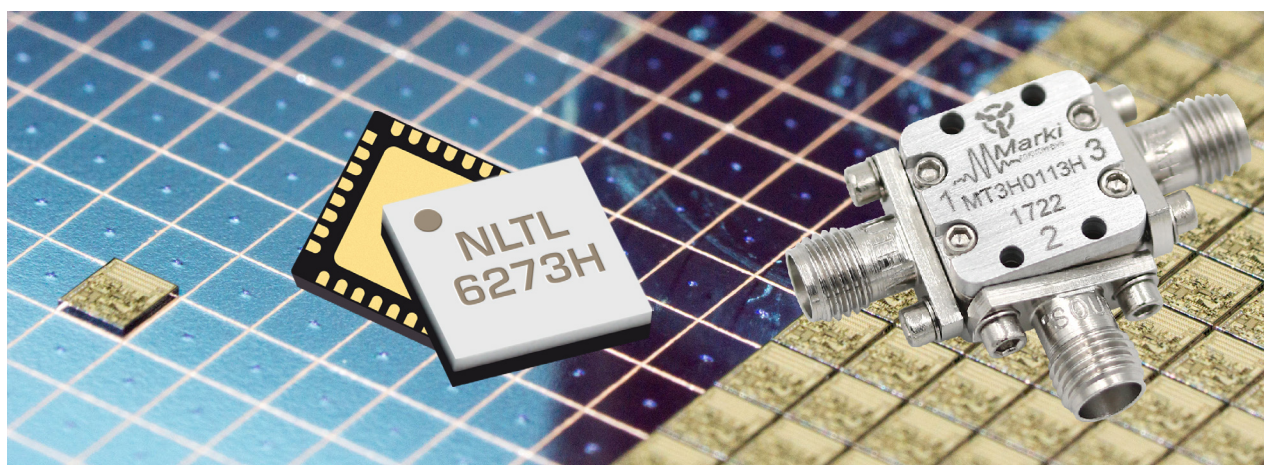
[PD4-0140](#), 1-40GHz  
[PD4-0150](#), 1-50GHz

### POWER DIVIDERS, RESISTIVE 1:2

[PD-0040](#), DC-40GHz

CONTACT  
THE FACTORY  
FOR ROHS  
(LEAD-FREE)  
MODULES

All MMIC products are RoHS.



| MMIC Amplifiers          | Band (GHz) | Gain (dB) | Psat (dB) | Bias      | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|--------------------------|------------|-----------|-----------|-----------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">ADM-5931</a> | DC-28      | 11        | 18        | 5V, 75mA  | •     |       |       |       |     | •   |        |
| <a href="#">ADM-5974</a> | DC-35      | 14        | 22        | 5V, 155mA | •     |       |       |       |     | •   |        |
| <a href="#">AMM-6702</a> | 20-55      | 28        | 21        | 3V, 180mA | •     | •     | •     |       |     | •   | •      |

| MMIC Balun                  | Band (GHz) | Amplitude Bal (dB) | Phase Bal (degrees) | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|-----------------------------|------------|--------------------|---------------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MBAL-1440CH</a> | 14-40      | ±0.2               | ±1.1                | •     | •     |       |       |     |     |        |

| MMIC Equalizers          | Band (GHz) | Low Freq Atten (dB) | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|--------------------------|------------|---------------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MEQX-30A</a> | DC-30      | 3, 6 & 10           | •     |       |       |       |     | •   | •      |
| <a href="#">MEQX-60A</a> | DC-60      | 3, 6 & 10           | •     | •     | •     | •     |     | •   | •      |

| MMIC Filters              | Band (GHz) | Insertion Loss (dB) | Description           | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|---------------------------|------------|---------------------|-----------------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MFB-2500</a>  | 18-32      | 1.5                 | Bandpass Filter       | •     |       |       |       |     | •   |        |
| <a href="#">MFB-3175</a>  | 26.6-36.7  | 1.5                 | Bandpass Filter       | •     | •     |       |       |     | •   |        |
| <a href="#">MFB-3300</a>  | 26-40      | 1.5                 | Bandpass Filter       | •     | •     |       |       |     | •   |        |
| <a href="#">MFB-3450</a>  | 24-45      | 1.5                 | Bandpass Filter       | •     | •     |       |       |     | •   |        |
| <a href="#">MFB-3475</a>  | 29.5-40    | 2.0                 | Bandpass Filter       |       | •     |       |       |     | •   |        |
| <a href="#">MFB-5350</a>  | 38-67      | 1.2                 | Bandpass Filter       |       | •     | •     | •     |     | •   |        |
| <a href="#">MDPX-2330</a> | DC-60      | 0.8                 | DC-23, 30-60 Diplexer |       | •     | •     | •     |     | •   |        |
| <a href="#">MDPX-2734</a> | DC-60      | 0.9                 | DC-27, 34-60 Diplexer |       | •     | •     | •     |     | •   |        |

| MMIC Quad Hybrids        | Band (GHz) | Amplitude Balance (dB) | Phase Balance (°) | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|--------------------------|------------|------------------------|-------------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MQH-1434</a> | 14-34      | ±0.7                   | ±4.5              | •     |       |       |       |     | •   |        |
| <a href="#">MQH-1842</a> | 18-42      | ±1.5                   | ±4                | •     | •     |       |       |     | •   |        |

| MMIC Mixers                       | RF/LO (GHz) | IF (GHz) | IIP3 (dBm) | LO Drive (dBm) | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|-----------------------------------|-------------|----------|------------|----------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MM2-0530L/H L/HSM</a> | 5-30        | 2-20     | +15/+21    | +15/+20        | •     |       |       |       | •   | •   | •      |
| <a href="#">MM1-0832L/H L/HSM</a> | 8-32        | DC-12    | +14/+23    | +9/+15         | •     |       |       |       | •   | •   | •      |
| <a href="#">MM1-1044L/H</a>       | 10-44       | DC-14    | +13/+22    | +9/+15         | •     | •     |       |       |     | •   | •      |
| <a href="#">MM1-1140H</a>         | 11-40       | DC-12    | +21        | +15            | •     | •     |       |       |     | •   | •      |
| <a href="#">MM1-1130HSM</a>       | 11-30       | DC-12    | +21        | +15            | •     |       |       |       | •   |     | •      |
| <a href="#">MM1-1240S</a>         | 12-40       | DC-12    | +25        | +20            | •     | •     |       |       |     | •   | •      |
| <a href="#">MM1-1850H/S</a>       | 18-50       | DC-20    | +21/+25    | +15/+20        | •     | •     | •     |       |     | •   | •      |
| <a href="#">MM1-1857L/H</a>       | 18-57       | DC-21    | +13/+20    | +9/+13         | •     | •     | •     |       |     | •   | •      |
| <a href="#">MM1-2567L</a>         | 25-67       | DC-20    | +9         | +13            | •     | •     | •     | •     |     | •   | •      |

| MMIC IQ Mixers               | RF/LO (GHz) | IF (GHz) | Image Rej (dBc) | L-R Isolation (dB) | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|------------------------------|-------------|----------|-----------------|--------------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MMIQ-1037H</a>   | 10-37       | DC-12    | 25              | 47                 | •     |       |       |       |     | •   | •      |
| <a href="#">MMIQ-1040L</a>   | 10-40       | DC-12    | 25              | 47                 | •     | •     |       |       |     | •   | •      |
| <a href="#">MMIQ-1865L/H</a> | 18-65       | DC-23    | 35              | 49/48              | •     | •     | •     | •     |     | •   | •      |
| <a href="#">MMIQ-4067L</a>   | 40-67       | DC-20    | 35              | 33                 |       | •     | •     | •     |     | •   | •      |

| MMIC Multipliers               | Input (GHz) | Output (GHz) | Description                                                    | 28GHz | 39GHz | 47GHz | 60GHz | SMT | Die | Module |
|--------------------------------|-------------|--------------|----------------------------------------------------------------|-------|-------|-------|-------|-----|-----|--------|
| <a href="#">MMD-1030H/HSM</a>  | 5-15        | 10-30        | Microwave & mmWave Passive Doublers with Excellent Suppression | •     |       |       |       | •   | •   | •      |
| <a href="#">MMD-1648L</a>      | 8-24        | 16-48        |                                                                | •     | •     | •     |       |     | •   | •      |
| <a href="#">MMD-2060L/H</a>    | 10-30       | 20-60        |                                                                | •     | •     | •     | •     |     | •   | •      |
| <a href="#">MMD-3567L</a>      | 17.5-33.5   | 35-67        |                                                                |       | •     | •     | •     |     | •   | •      |
| <a href="#">MMD-3580L</a>      | 17.5-40     | 35-80        |                                                                |       | •     | •     | •     |     | •   | •      |
| <a href="#">ADA-2052</a>       | 10-25       | 20-52        | Active mmWave Doubler                                          | •     | •     | •     |       |     |     | •      |
| <a href="#">NLTL-6273 (SM)</a> | 0.7-5       | 0.7-40       | Low Phase Noise Comb Generator                                 | •     | •     |       |       | •   | •   | •      |
| <a href="#">NLTL-6275</a>      | 3-15        | 3-85         |                                                                | •     | •     | •     | •     |     | •   | •      |





At Marki Microwave we believe that limits are meant to be broken. Our mission is to invent technologies to empower the RF and microwave industry to design faster, simplify production, eliminate complexity, and shatter performance barriers.

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