

**LONGER RANGE | HIGHER DATA RATES | LOWEST SWAP**

Triad’s THPR series break performance barriers for MIMO radios and enable first-run link success. They eliminate the need to integrate heavy, costly, and inefficient stand-alone components for long range wireless links. Triad combines our high power RF sub-systems with core radios from the most popular manufacturers in low SwAP, rugged packages. THPR products contain BDAs, RF filtering, and innovative SoC-based monitoring and controls, with real-time power measurements and link diagnostics.



**FEATURES**

- Fully Integrated High Power RF Sub-System and Radio
- Range Extension and Data Rate Improvement
- Enhanced RF Link Control via USB & Serial
- Wide Vin, DC or AC Supply Options

**APPLICATIONS**

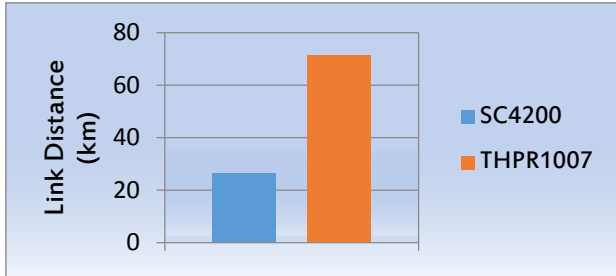
- Long-Range Unmanned Aircraft Links
- High Data-Rate Mesh Networking
- Military MANET
- RF Power Equalization over Frequency - Temperature

GENERAL SPECIFICATIONS	
Operating Frequencies	UHF, L, S, C, X and Ku Bands
Form factors	<ul style="list-style-type: none"> <li>Ultra Low SwAP configuration for Unmanned Air / Ground Vehicles (2-20W RF Power per Channel)</li> <li>Rugged, Convection Cooled Chassis for Wheeled / Tracked Vehicles or Maritime (20-100W RF Power per Channel)</li> <li>Rack Mount Chassis for Ground Fixed / Large Ships (50-100W+ RF Power per Channel)</li> </ul>

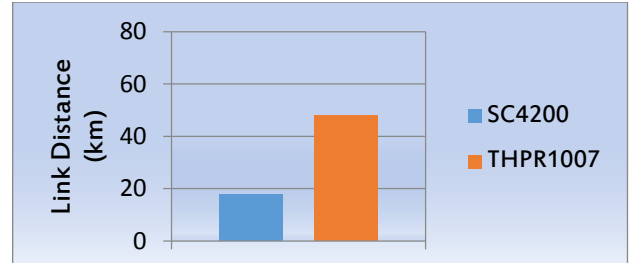
THE TRIAD THPR ADVANTAGE
<p><b>Unmatched RF Link Stability via Real-Time Monitoring and Equalization</b> <b>5x – 20x Range Improvement over Stock Radio</b></p>
<p>Capturing every dB of link margin is essential for reliable long distance, high throughput RF links. In a typical integration, there are several sources of RF power drift – <b>in most systems, power can vary by almost 3dB</b> over frequency, temperature, and radio-amplifier mis-matches.</p> <p>The THPR Series of range-enhanced radios employ <b>Active Power Control</b> to ensure that the both the <b>RF Output Power and SNR</b> delivered to the antennas remains <b>ultra-stable</b> in the presence of fluctuations arising from the above factors. This results in:</p> <ul style="list-style-type: none"> <li>- <b>Greater Reliability:</b> RF output power that drifts too low or high during operation can cause unexpected link failures, especially when a target data rate needs to be achieved.</li> <li>- <b>Ease of Use:</b> Triad’s THPR series radio enhancements yield links that are easier to integrate, deploy, and maintain than any other solution in the industry.</li> </ul>

**LINK PERFORMANCE IMPROVEMENT OVERVIEW**

Below is test data for a stock SC4200 radio operating at 1W / channel, compared with the link distance improvements achieved with the THPR1007, a 20W / channel S-Band integrated radio system. Two use cases are illustrated and described in the graphs below, one at a low MCS value (< 10 Mbps) and one at a higher MCS value (> 50 Mbps)



Stock SC4200 vs. THPR performance, for a link configured to achieve **maximum power**, regardless of data rate.



Stock SC4200 vs. THPR performance, for a link configured to achieve the **maximum data rate** the radio is capable of.