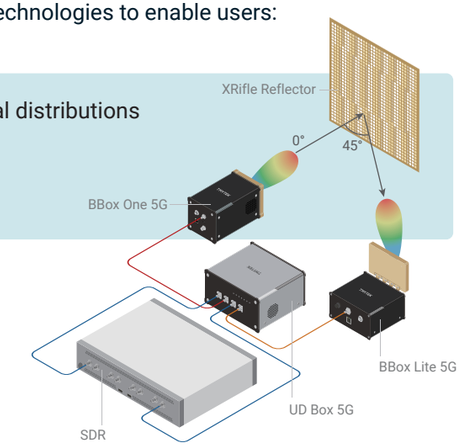
XRifle Reflector

Wider FR2 Extension and Cost-Effective 5G mmWave Coverage Solution

5G millimeter-wave technology enables 5G enhanced mobile broadband (eMBB) and ultra-reliable and low latency communications (URLLC) in future networks, but it still suffers from large propagation losses and is still vulnerable to signal obstruction. Thus, deploying the right coverage at a reasonable cost in applications such as factories, hospitals, or private networks is quite challenging. TMYTEK has developed a new and inexpensive way to address these issues with Electromagnetic Surface (ES) technologies to enable users:

- Customize EM signal distributions
- Cover dead zone
- Create cold zone



Built for telecom and system integrators

Installing additional mmWave base stations to provide wider coverage is expensive. The XRifle Reflector from TMYTEK is an affordable way to improve signal strength in places where 5G NR millimeter-wave signals are weak or null. The reflector patterns are passively printed on interior glass or printed circuit boards (PCBs) using electromagnetic surface (ES) technology, offering eight commonly used reflection angles to re-distribute signals from different angles. This enables telecom and system integrators to quickly produce signal hot-zones and cold-zones and simulate actual millimeter-wave deployment. Telecom and system integrators now have a cutting-edge and cost-effective way to increase the area covered by 5G millimeter-wave signals.

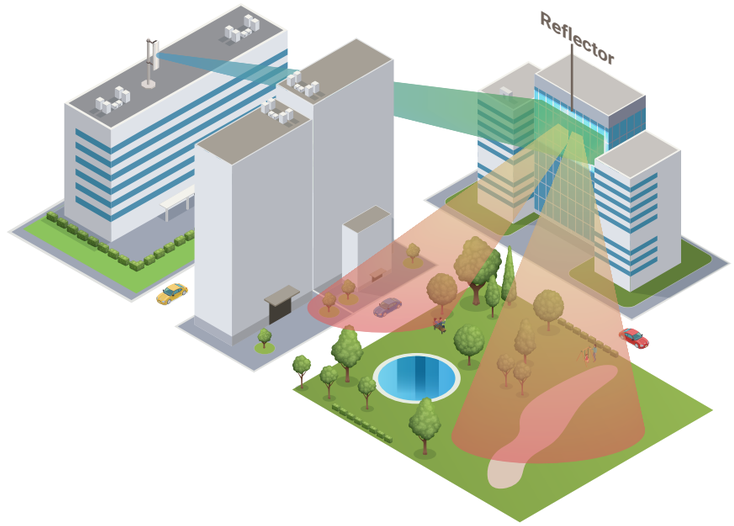
Features and Benefits

Features	Benefits
Passive	Easy to install with no extra power required and zero maintenance
FR2 band	Extend and design your coverage immediately for FR2 n257/n261
8 standard models, bi-directioanl[1]	Plan the mmWave signal coverage with low cost standard angles
40 dB gain[2]	Extend the coverage of mmWave signal with gain
2 meter to infinite	Plan the mmWave converge with reasonable number of reflector

[1]Customization is available. Please contact sales@tmytek.com
[2]Conditions: reflector is placed at 2 meters away from BBox One

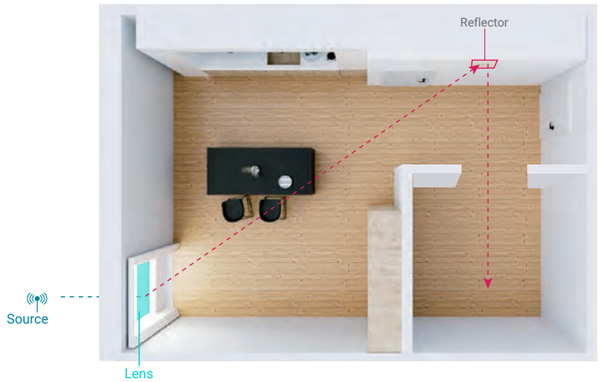
Applications

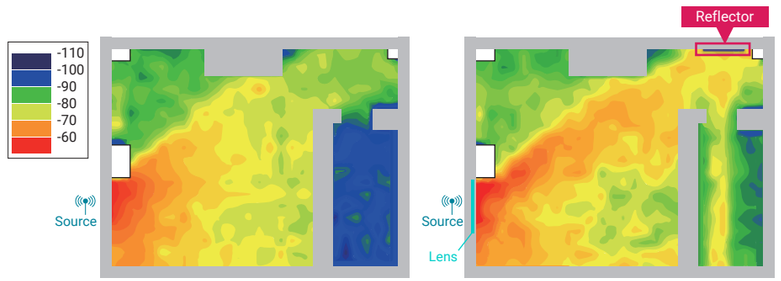
- Redistribute 5G NR mmWave signals
- Improve the weak or null signals in cold zones
- Create cold zones by intention for security reason
- Plan a FR2 private network with better wireless coverage



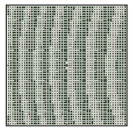
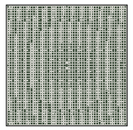
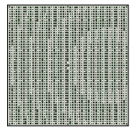
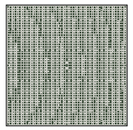
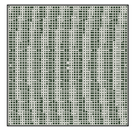
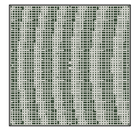
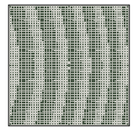
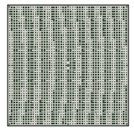
mmW-Coverage Solution:

XRifle reflector eliminates the signal cold zone at a reasonable cost.





RF Specifications

Parameter	Unit	Model							
		ES0015	ES0030	ES0045	ES0060	ES3010	ES3015	ES3045	ES3060
									
Frequency band	GHz	26 - 30					26 - 30		
Angle of Incidence	deg	0	0	0	0	30	30	30	30
Angle of Reflection	deg	15±1	30±3	45±4	60±8	-10±1	-15±1	-45±1	-60±3
RCS Gain @28GHz	dB	75.3	74.9	73.3	69.9	74.2	74.4	73.2	69.1
Realized Peak Gain@28GHz (BBox One, as transmitter, is placed 2 m away from the reflector)	dB	49.4	49	47.3	44	48.3	48.5	47.3	43.2
3 dB Beamwidth @28GHz	deg	2.0	2.2	2.6	3.8	2.0	2.0	2.6	3.9
Distance from transmitter	m	> 2 meters					> 2 meters		
Reflector Size	mm	280×280×1.6					280×280×1.6		

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