

UDP Streaming Throughput Field Test Results

CMP9605, CMP9610, & CMP9611



Dual-Band Video Coverage for a 50 ft Semi-Trailer

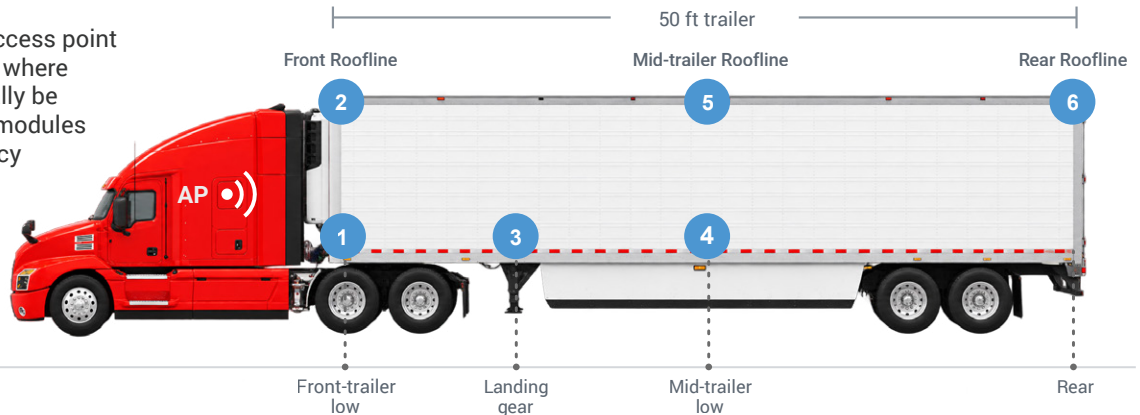
Six test positions with the access point located inside the truck cab, where a fleet gateway would typically be installed. Three CEL Wi-Fi 6 modules were tested on both frequency bands using UDP.

1080p@30fps Streaming Floor

4 Mbps

Throughput needed to hold a healthy stream.

TEST LOCATIONS



THROUGHPUT BY POSITION, MODULE & BAND

Locations	2.4 GHz			5 GHz		
	CMP9605	CMP9610	CMP9611	CMP9605	CMP9610	CMP9611
1 Front-trailer, low	15.3	16.2	41.0	41.0	47.2	251.4
2 Front Roofline	26.2	2.3	0.8	29.7	27.7	142.1
3 Landing Gear	15.0	10.3	1.0	21.4	29.9	16.9
4 Mid-trailer, low	4.7	4.5	3.6	15.1	19.2	13.8
5 Mid-trailer Roofline	5.6	5.5	4.9	28.8	26.5	21.7
6 Rear Roofline	3.5	4.9	No link	2.1	4.8	No link

TEST SETUP

- All Module clients on an i.MX93 host running Debian Linux
- Integrated omni-directional PCB-trace antenna
- Access point inside the truck cab, wired to the iperf server over Ethernet so the test traffic had the air to itself
- Module antenna held in free space on a tripod with a PVC and cardboard fixture, keeping metal away from the antenna
- 2.4 GHz and 5 GHz measured at every position in a congested RF environment: 89 access points detected (57 on 2.4 GHz, 32 on 5 GHz)
- iperf UDP throughput with packet loss logged per run

WHY UDP

RTSP carries video frames over UDP and keeps TCP for stream control. Measuring on UDP matches how a camera stream actually moves its data.

A NOTE ON RANGE: IT'S THE BOARD, NOT THE RADIO

The CMP9611's shorter range in these tests isn't a limit of the module itself. It's the antenna's ground plane. The CMP9611's antenna is designed around a larger reference ground plane than the CMP9605/CMP9610 antenna, and the evaluation kit only provides about a quarter of that area. A smaller ground plane weakens the radiated signal, and that penalty compounds with distance, which is a likely driver of the range drop-off seen above.

The takeaway: these numbers reflect the eval kit's layout, not the module's true ceiling. Sizing the ground plane to spec before finalizing your mechanical design could meaningfully improve range performance. CEL engineering can review your layout and confirm with TRP measurement.

CMP9611: BUILT FOR SPEED

When your antenna and receiver stay close together, the CMP9611 is the clear choice. In real-world field testing, it outpaced both other modules by a wide margin at close range - hitting speeds up to 5x faster than the alternatives right near the access point.

The tradeoff: that speed advantage fades quickly with distance, so it's best suited for tighter, close-proximity setups rather than long-range coverage.