

TrackFi™ PowerMesh™

Next-level reliability for ADAS testing and driverless vehicle testing



TrackFi PowerMesh is a premium dual band wireless mesh network, capable of creating secure scalable wireless networks to provide low latency high bandwidth data transfer between multiple vehicles. Part of AB Dynamics track testing offering, TrackFi PowerMesh supports the communication needs for Driverless Test Systems, synchronisation testing and real-time monitoring of motion pack data.

PowerMesh range

Vehicle knockdown unit

The vehicle knockdown unit is designed for ADAS testing to protect antennas from collisions with soft targets. Antennas fold down when they are impacted and the holding force can be adjusted to suit the testing performed.

Vehicle compact unit

A new compact mount design reduces the footprint of the radio and ensures the antennas remain upright for high speed and high vibration testing. The simple compact design is well suited for driverless vehicle testing and use on stationary vehicles e.g. base station vans and supporting SPT vehicles.

Trackside static unit

The PowerMesh Trackside Units are designed to expand the range of the radio network. By placing these units at regular intervals users have achieved real world radio coverage of more than 7km controlling driverless vehicles.

Trackside battery

The Trackside battery unit is designed to power the Trackside static radio. It provides 48 hours of continuous running for the PowerMesh radios.

ADAS platform

TrackFi PowerMesh integrates within all AB Dynamics platforms. All LaunchPad™s can be either configured to use the inbuilt drive over antennas or an external breakaway connector.



Radio characteristics

	Specification for Vehicle and Static radio units	
	2.4Ghz	5Ghz
RF maximum transmit power	29dBm +/- 2dB	29dBm +/- 2dB
RF frequency	2402-2482 MHz	U-NII-1: 5150 – 5250 MHz U-NII-2A: 5250 – 5350 MHz U-NII-2C: 5470 – 5725 MHz U-NII-3: 5725 – 5850 MHz
RF receive sensitivity	-99 dBm (@ 1 Mbps, 20 MHz) to -71 dBm (@ 300 Mbps, 40 MHz)	-94 dBm (@ 6 Mbps, 20 MHz) to -68 dBm (@ 300 Mbps, 40 MHz)
Max physical layer data rate	300Mbps (throughput varies)	300Mbps (throughput varies)
Regional certification	CE mark (European Economic Area, Switzerland and Turkey), FCC (US), IC (Canada), MIC (Japan), AS/NZS 4268 (Australia & NZ), Colombia, Indonesia, UAE, Kenya, India, Malaysia, Brazil, Philippines, Guinea, South Africa, Mexico	
Temperature rating	Ambient (operating): -40°C to 60°C (-40°F to 140°F) Storage: -40°C to 85°C (-40°F to 185°F)	
Enclosure rating	IP67	
Input voltage	9 — 30 VDC Passive PoE	
Power consumption	2.8 W (average, idle); 15 W (maximum, peak) @ 24 V	

	Knockdown Vehicle	Compact Vehicle	Static Unit
Weight	2.82kg	1.86kg	Radio + Brackets 3.3kg Tripod 9kg
Size	45x30x28cm (including antennas)	22x18x33cm (including antennas)	70x50cm (including antennas) Raised 2.4m with tripod

Range

	Vehicle	GST/LP 80 (external antennas)	LP 50/60/Spin
Vehicle or static unit	1000m	600m	300m
GST	650m	450m	200m

Distances are minimum values found during testing performed with radios using compliant frequencies and powers within Europe with clear line of sight on flat ground.

Battery characteristics

	Specification for Vehicle and Static radio units
Charging	Charging with Mains IEC C13. 110V-250V. Full charge within 6 hours.
Capacity	288 Wh
Enclosure rating	IP67
Output voltage	12VDC Passive PoE, capable of powering all PowerMesh radios
Weight	23kg
Size	60x30x50cm

About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

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