



TrackFi PowerMesh

Advanced dual-band wireless Ethernet telemetry with meshing capabilities

TrackFi PowerMesh is a dual band Ethernet radio, capable of creating secure mesh networks whilst providing high bandwidth data transfer between multiple vehicles. This offers greatly improved reliability over standard WLAN technology, making it ideal for vehicle testing and proving grounds that require complete connectivity of all test vehicles and objects. A deployment could be as few as two nodes (for a Euro NCAP AEB test) or dozens (to cover a wide area or many moving objects). We offer systems suitable for use on vehicles, in our ADAS platforms and as static nodes to mount on infrastructure or beside the track. Where real-time communication is required, such as for driverless vehicle testing, TrackFi PowerMesh provides low latency data transfer between multiple vehicles or to Ground Traffic Control.

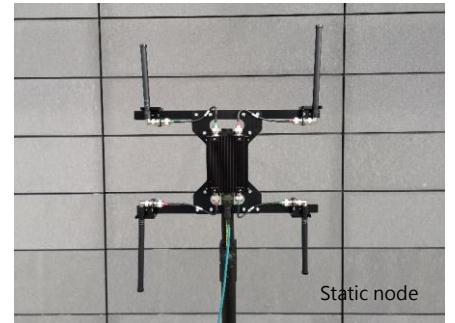
Features

- Dual Band Mesh radio
- Mounting options for vehicles, ADAS platforms and static trackside nodes
- 2x2 Omni-directional antennas with separation for diversity
- Improved resilience to interference due to dual band operation
- Static nodes can be permanent (wired to power supply) or used with optional portable weather proof battery power.
- Supplied with LEMO cable for direct connection to current robot controllers
- Includes Windows software for configuration and control of the mesh network



Applications

- Driverless testing over large areas including those with obstructions and reflections
- Communication of data between multiple vehicles via mesh network
- Proving grounds that require complete connectivity of all test vehicles
- Transfer of real-time motion pack data for V2V and V2X position and speed measurement
- Relay of test data from a moving vehicle to the laboratory for test monitoring
- Remote monitoring and control of AB Dynamics driving robots
- Communication of AB Dynamics Driverless and Synchro Robot data



Configuration and Options

TrackFi PowerMesh is available in a variety of configurations including vehicle and static variants. The vehicle node has fold-down antennas making it ideal for use in ADAS tests where collision with a soft target could otherwise damage the antennas. The static node can be rapidly deployed to extend mesh coverage using the supplied folding tripod. A compact single antenna wide band radio compatible with TrackFi PowerMesh radio is also available for AB Dynamics GST and LaunchPad platforms.

Vehicle node	Dual Band Mesh Radio with 2.4Ghz and 5Ghz transceivers Folding antenna and magnetic roof mounting (P9644) Connecting cables to Robot Controller Packing case
Static node	Dual Band Mesh Radio with 2.4Ghz and 5Ghz transceivers Folding antenna mount with tripod (P9645) Connecting cables to Robot Controller, Driverless Base Station or Ground Traffic Control system Packing case
Trackside battery (option for static node)	Charge time of up to 6 hours 12V 24Ahr (up to 24 hours continuous use) Integral mains charger 100V-240V, 2Amps max. Waterproof case



Specification

Interfaces		IP Interface	
RF Interfaces	Female N-Type	Ethernet	10/100/1000BaseT Ethernet
Power and Ethernet	Lemo-1k (for Robot Controller)	IEEE 802.11	AES-CCMP and TKIP encryption, WPA-Personal/Enterprise, WPA2-Personal/Enterprise, 802.1x; 64/128-bit WEP; Access Control Lists; Compatible with Layer-2 and Layer-3 client/server and peer-to-peer security solutions; Compatible with Harris SecNet 54® encryption
Certifications	FCC Part 15 (USA) ICES-003 and RSS-210 (Canada) CE Mark (EEA, Switzerland and Turkey) AS/NZS 4268 (Australia and New Zealand) ICASA (South Africa) ANATEL (Brazil) IFT/NOM (Mexico) Japan		
Range		Power	
Point to Point range	Up to 1km (1)	Input Voltage	8-48 VDC
		Power Consumption	5.5W to 19W at 24VDC (Power typically supplied by ABD equipment)
RF Interfaces		Control	
2x2 MIMO 5GHz and 2x2 MIMO 2.4GHz transmit and receive		Local control	Single RGB LED with a power button and power switch
		Remote control	Windows based software
RF and modulation		Physical	
5GHz Frequencies (2)	U-NII-1: 5150 — 5250 MHz U-NII-2A: 5250 — 5350 MHz U-NII-2C: 5470 — 5725 MHz U-NII-3: 5725 — 5850 MHz	Sealing	IP67
		Temperature	-20C to 80C
5GHz Output Power	28 dBm ± 2 dB (2)	Mounting	Trackside unit - Tripod with mounting Vehicle unit – Magnetic roof mount
5GHz Modulation	OFDM	Weight	4.5kg - Vehicle unit
Data Rate	Up to 50Mbps (3)	Dimensions	306x440x71(h)mm – Vehicle unit 530x756x123mm – Trackside (radio head)
2.4GHz Frequencies	2.402 — 2.472 GHz (2)		
2.4GHz Output Power	29 dBm ± 2 dB (1)		
2.4GHz modulation	DSSS, CCK, OFDM		
Receive sensitivity	Varying between -96 dBm ±1 dB and -73 dBm ±2 dB		

