

## iTraceRT-MVT-300/TLD

Accurate Real-Time <u>Multi Vehicle Tracking</u> with integrated Dynamic Mesh Communication Features for all automotive Localization & Control Applications

The latest applications in multi vehicle testing require INS/GNSS solutions with high performance, minimum latency and advanced timing features, combined with a robust local and global communication network support, to provide most reliable surveying and trajectory control capability.

iTraceRT-MVT-M300, equipped with iMAR's QNX<sup>RT</sup> based real-time signal processing, is the successor of the well-known traditional automotive motion reference system iTraceRT-MVT-M200.

- most rugged MEMS gyro based system.
- output of angular rate, acceleration, attitude, true heading, course over ground, velocity and position as well as all standard deviations via Ethernet, UART, CAN, USB.
- active mesh network communication support.
- class leading accuracy: < 2 cm, 0.05 °</li>
- latency < 2 ms plus jitter < 1 ms for tasks in advanced vehicle control & testing applications.
- integrated all-constellations / all-frequencies GNSS engine, advanced interference rejection.
- odometer aiding for best performance even during longer GNSS outages.
- 32 GByte internal online data storage with "blackbox" capability (option: 128 Gbyte).
- NTRIP caster capability to be operated as GNSS reference station (i.e. to supply other vehicles with RTK corrections).
- dual-antenna capability (allows determination of heading at standstill, without any initial motion)
- available also with gyro compassing capability with initial 0.3° heading (iTraceRT-MVT-510).
- robust, compact, lightweight, advanced EMI/EMC protection.

The iTraceRT-MVT incorporates both, more than iMAR's 30 years of experience in most accurate vehicle trajectory surveying and sensor technology, as well as the latest interface and GUI design rules including

related data exchange protocols to support both, the traditional highly skilled operators as well as the modern plug & play users.

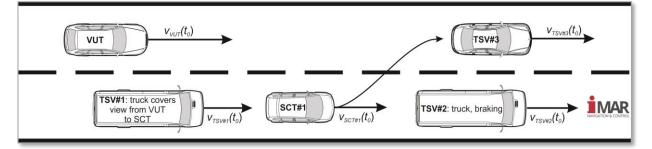
Besides the iXCOM easy-to-use interface protocol on UART, USB and Ethernet, the powerful GUI allows to be configured according to the skills of the operator, from the professional engineer down to the briefly trained technician or safety driver. A dedicated operation wizard guides the operator step by step through the configuration process in the vehicle to assure a fast, easy, accurate and straight forward system setup.





The system provides all kinematic measurements and standard deviations of the target vehicle in real-time, with a data update rate of up to 500 Hz with an unbeatable low latency and jitter.

The iTraceRT-MVT-300/TLN and /TLD systems are fully interface compatible to iMAR's iNAT Navigation & Timing system series iNAT-M300.



technical modifications reserved w/o notice



## Technical Data: iTraceRT-MVT-300/TLD (rms)

	Rate		n Attit./Heading			
Range:	± 500 °/s	± 8 g	unlimited	unlimited		> 515 ms on request
ias day-to-day:	0.2 °/s	2 mg	pure INS, unaide			
ias instability: ias (filtered)	< 2.5 °/h < 5 °/h	0.1 mg < 1 mg	AllanVariance va after 5 minutes F			
ngles:		0	0.05° RP. 0.15°			(INS/RTK-GNSS)
<i>ingles.</i>			0.07° RP, 0.17°			(after 10 sec RTK-GNSS lo
			0.15° RP, 0.25°			(after 60 sec GNSS outage
			0.15° Side slip a			$(for v > 10 m/s, RTK)^2$
Position (horizontal / vertical):			± 2 cm / 5	cm + 2 ppm <sup>1</sup>	(INS/RTK-GNSS) <sup>1</sup>	
				± 0.1 m / 0.1 m		(INS, 5 s GNSS outage) <sup>1</sup>
				± 0.5 m / 0		(INS, 10 s GNSS outage) <sup>1</sup>
				0.2 % DT (	CEP)	(INS/ODO during GNSS out
				± 1.8 m ± 1 cm / 2.	5 cm	(pure GNSS; CEP50) (post-proc, INS/RTK) <sup>1</sup>
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<sup>&</sup>lt;sup>1</sup> assumes sufficient GNSS conditions and sufficient motion conditions for filtering state observability; values depend on trajectory

<sup>&</sup>lt;sup>2</sup> The side slip angle is the angle between course over ground (CoG) and true heading. It is calculated based on the longitudinal and transversal velocity of the vehicle. It's accuracy therefore increases with increasing velocity. At standstill, the side slip angle cannot be defined.