

DRONE FIBER-OPTIC TETHER (DFT)

Resilient and secure long-haul communication link providing mission assurance to unmanned aerial systems (UAS)

As military forces worldwide increasingly rely upon UASs for surveillance, reconnaissance and kinetic effects in contested environments, the technology underpinning these sophisticated machines must keep pace. Enter L3Harris Drone Fiber-Optic Tethers (DFT) – a game-changer in drone applications that defeats electronic warfare (EW) attacks to provide vital battlefield intelligence.

FIBER-OPTIC ADVANTAGE

L3Harris DFT offers UAS operators a wired connection with their aircraft that is un-jammable, emits no EMI and provides 10 times faster data transfer speed. It results in an undetectable, un-jammable solution that unlocks new capabilities. Today, with UAS market expansion and diversification, there is a widespread demand for reliable, secure, high-bandwidth, anti-jam and long-haul command and control between operators and drones. L3Harris' experience in micro diameter fiber-optic cable manufacturing and winding resulted in the DFT solution alternative to traditional over-the-air command and control of UAS drones. These capabilities come in uniquely small volume and low weight drone-mounted packs due to fiber-optic selection and proprietary semi-precision winding processes.

DFT is optimized for high reliability at lengths in excess of 25 kilometers under the operational demands of existing and prospective customer applications. The tethers are proven in successful real-world deployment in an operational environment.

MILITARY APPLICATIONS

Fiber-optic technology in UASs enhance operational effectiveness and expand their capabilities. For surveillance and reconnaissance, high-definition cameras and sensors on drones require secure and robust high-data-rate transmission. Using DFT, command centers receive significantly more in real time, allowing for immediate analysis and decision making.



BENEFITS

- > Significantly lighter and smaller packs than market at equivalent range
- > Proprietary, advanced winding method
- > No bend attenuation added during flight (agnostic to wave length)
- > Results in no piloting limitations on turns or speed
- > Battlefield tested overseas against active EW
- > Lengths in excess of 25 km
- > Drone-agnostic packaging
- > Enabler of high-bandwidth demand applications
- > 100% American made, NDAA compliant
- > Ability to ramp up production with four current manufacturing lines
- > Reduced latency over wireless

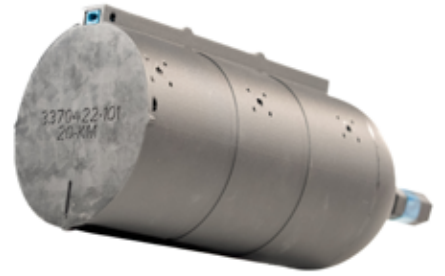


FIBER PACK LENGTH FROM LEFT TO RIGHT: 20 KM, 12 KM, 5 KM, 2 KM

OPTIMIZED PERFORMANCE

In combat scenarios, UAS equipped with fiber-optic systems provide live feeds of the battlefield, offer precise targeting information and even control guided munitions with pinpoint accuracy. The proliferation of counter-UAS jammers makes fiber optic tethers' resistance to electronic interference ideal for drones engaged in a contested EW environment, where maintaining communication integrity is paramount.

L3Harris DFT semi-precision-wound packs are optimized for reliable performance in challenging battlefield conditions. These optimizations include size, weight, packing efficiency, peel tension and optical performance. The tethers undergo extensive high-speed payout testing, test flight programs and demonstrations in operational environments. L3Harris offers industry-leading, field-proven precision winding services for producing packs in length and dimensions customized to the customer's requirements.



DFT PACKS SPECIFICATIONS							
Length (km)	Starting Weight (g)	Avg Flight Weight (g)	End Weight, Housing and Test Cable (g)	Outer Diameter (mm)	Height (mm)	Pack Inner Diameter (mm)	1550 nm Total Attenuation (dB)
2	235	168	100	86	159	64	0.9
5	410	268	125	97	159	64	2.0
10	850	508	165	97	267	64	4.8
20	1,260	718	175	109	267	64	6.5
25	1,600	933	265	113	269	64	8.0

Contact us for more info at SMD_MDF.Maritime@L3Harris.com

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