

The Hybrid Wireless Communication Link

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Abstract: *The paper describes the development of a wirelessly hybrid data connection that employs two channels of transmission using radio waves and optical radiation (FSO, free space optics) (RF - Radio Frequency). Its data range was established under various operating settings based on several factors (such as diode lasers, optics aperture, photodetector phototransistor, signal bandwidth, and beam divergence) of the connection components (visibility and turbulence). The Military Communication Institute in Poland conducted the first testing on the link prototype (TRL 6). The findings show that the employment of an FSO/RF information system may boost connection availability, data transmission security, and immunity to malicious interference. Given the characteristics of this technology, it was found to have a significant degree of military application potential.*

Keywords: Wireless Communications, Quantum Cascade Lasers, Free Space Optics, Data Transmission Security, Hybrid Data Link;

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