Radio Signal Generation over Fiber by Optical Injection Locking

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***Abstract*—Advancement in digital optical communication over long-haul access and access networks is fostering the emergence of millimeter-wave technologies that will enable transport of fast enough data streams in the future. To connect remote users, these signals are used in converging optical/wireless technologies by integrating Worldwide Interoperability for Microwave Access (WiMax), Wireless Fidelity (WiFi), Long Term Evolution (LTE) and currently 5G technologies.**

The optical injection locking (OIL) method is studied by applying the correlated system technique of two slave lasers controlled by a master laser. The theoretical and experimental demonstrations consisted in generating several times the reference frequency fm of the desired RF (radio frequency) signal. Optisystem software was used for the simulation.

***Keyword*—Radio Over Fiber (RoF), Remode Heterodyne Dectection (RHD) ,Coherent Heterodynage, Optical Injection Locking (OIL), telehealth**

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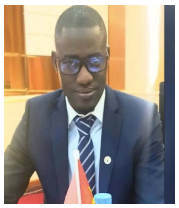

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