

88 年度下半年暨 89 年度國家標準實驗室計畫執行成果摘要表 論文

計畫名稱	中文	建立及維持我國時間與頻率國家標準		
計畫編號	英文	The Maintenance and New Technology Establishment of National Standard for Time and Frequency		
計畫編號	TL-001-P301(89)			
執行單位	中華電信研究所		執行期間	88 年 7 月至 89 年 12 月
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成果名稱	中文			
	英文	A TEST SYSTEM FOR TIME TRANSFER UTILIZING OPTICAL FIBERS		
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解密期限	中華民國 年 月底解密		機密級	
關鍵詞	time and frequency			
	SONET/SDH			
	short-term stability			
內容摘要：				
<p>The precise and accurate characteristic on time and frequency is extremely important in telecommunication and electric power systems. We have begun to investigate time transfer via optical fiber, and a test system has been built since 1998, either. One of the unused overhead bytes in each SONET/SDH frame is employed to transfer a time reference pulse. The test system was divided into three parts such as controller, timing board and transceiver. The transceiver is based on Odetics LIMO SONET/SDH OC-3 interface adapter to access the SONET overhead data. The controller is used to set and control the LIMO. The timing board is designed to transfer the time pulse generated by the atomic clock and to access the time pulse received via LIMO. The test system was configured for a loop-back test. A short-term stability of less than 10 ps has been achieved through short-distance (about 5m) single mode fiber. Another 25km loop-back test has been done in air-conditioned laboratory and the room temperature was maintained within 23 ± 0.5 °C. The propagation delay variation was about 1.4 ns.</p>				