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A programmable hardware module for precise absolute time event generation and capture

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Abstract content

We have designed and built a programmable hardware module for TTL pulse generation and capture in absolute time. The time reference is an on-board GPS (Global Positioning System) receiver. Tests of a prototype performed at the US National Institute of Standards (NIST) found a nominal accuracy better than 20 ns relative to the secondary US frequency standard. Potential applications for this device are numerous and include triggering calibration sources and lasers at specific times for calibration of cosmic-ray observatories. The hardware is configured in a standard PC104 layout for use with embedded systems. A Linux software device driver interface featuring an extensive set of user commands was also developed.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 997-1000

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