



A multiparameter, PC-based telemetry unit for biomedical signals.

<https://arctichealth.org/en/permalink/ahliterature68990>

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Source: J Telemed Telecare. 1996;2(3):143-7
Date: 1996
Language: English
Publication Type: Article
Keywords: Ambulances
Comparative Study
Computer Communication Networks - instrumentation
Humans
Rural Health Services
Technology Assessment, Biomedical
Telemetry - instrumentation
Telephone

Abstract: A low-cost, general-purpose telemetry system was developed for use in rural health centres, hospitals, ambulances and clinics. It was designed to transmit a range of analogue biomedical signals using various communications media. The system was tested using different telephone systems, including mobile telephony. The results showed a maximum sample rate of 1.6 kHz using the public telephone network. With three data channels the system produced sample rates of 500 Hz at 8 bit/sample. Typical overall delay times were below 100 ms. Mobile tests showed that the GSM telephone was superior to the Nordic mobile telephone (NMT 900). In field tests, sample rates of 990 Hz were obtained using GSM telephony. Bit error rates were less than 10^{-7} for all applications and high-fidelity regeneration was obtained at the receiver. The tests showed that the system was well suited for telemetry of analogue biomedical signals in a broad range of telemedicine applications.

PubMed ID: 9375048 [View in PubMed](#) 