Title

Special Session:
" WORKSHOP ON RF CAPTURE OF MEDICAL TELEMETRY - LEARN BUILD DIAGNOSE!! "

Workshop Organizers

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Abstract

Low-cost access to medical diagnostics has the potential for positive health outcomes worldwide. In this workshop, attendees will be instructed to develop a system capable of receiving and decoding radio packets of medical telemetry.

Periodic measurement of blood glucose is key in the prevention, diagnosis and treatment of diabetes. A sensor patch continuously measures glucose whereas a meter provides a patient-initiated reading. In either case, the data is available over the air and is receivable using a low-cost Software Defined Radio (SDR). Participants can expect to learn how to tune a SDR, set key RF parameters and demodulate the signal. This is a *hands-on* and practical session that will involve coding in C overtop a Linux environment.

This workshop will develop core skills such as microprocessor programming and radio frequency communication protocols – skills that are transferable to other humanitarian projects. We hope this knowledge will encourage attendees to reach out to their communities and deploy solutions.
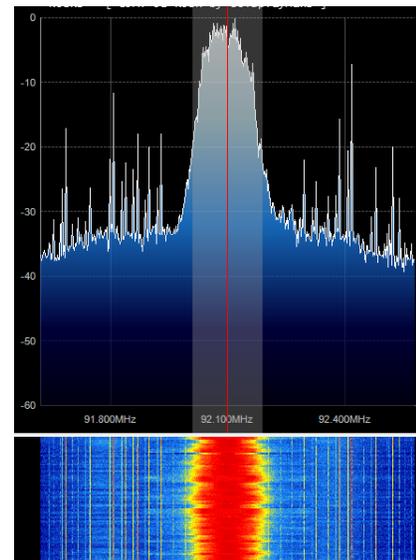
Example radio spectrum and waterfall

Agenda

December 11, 2018
09:30 – 17:30

Classroom (to be confirmed)
Universidad Catolica San Pablo

09:30 – 09:45	Opening remarks
09:45 – 11:00	Architecture of software defined radio
11:00 – 12:30	SDR programming
12:30 – 13:15	Lunch break
13:15 – 14:00	SDR programming continued
14:00 – 16:30	Capturing data from test signal
16:30 – 17:30	Glucometer decoding

Optional Tutorial

December 10, 2018
13:00 – 18:00

Classroom (to be confirmed)
Universidad Catolica San Pablo

Introductory tutorial on Linux programming. Participants will practice using secure shell, vi text editor, gcc compiler and make utility. A simple program will be written to calculate and output pi (3.14159…) using C.

Prerequisites

Bring a WiFi capable laptop with installed secure shell terminal. To maximize their benefit from this workshop, participants should already be comfortable with (i) radio fundamentals and (ii) basic software programming in a Linux environment. (Note: an optional introductory tutorial is available to refresh programming skills).