

# PROPOSAL OF A DTMB SIGNAL MONITORING TOOL BASED ON RASPBERRY PI PLATFORM.

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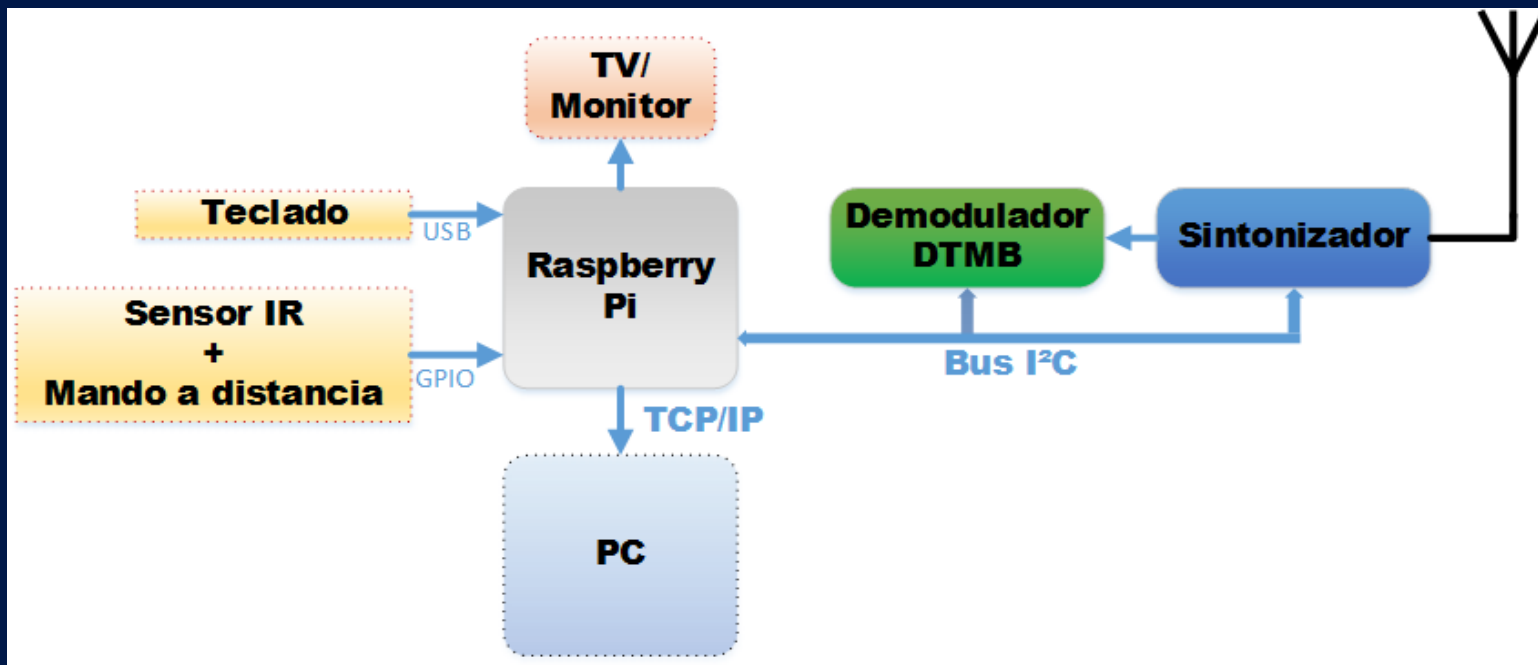
## Introduction

- Introduction and adoption of DTMB standard in 2013.
- Created a demonstration zone on Havana.
- Technical evaluation of all receivers introduced in Cuba.
- Deployment around the country.
- Need check DTMB signal parameters in different places.

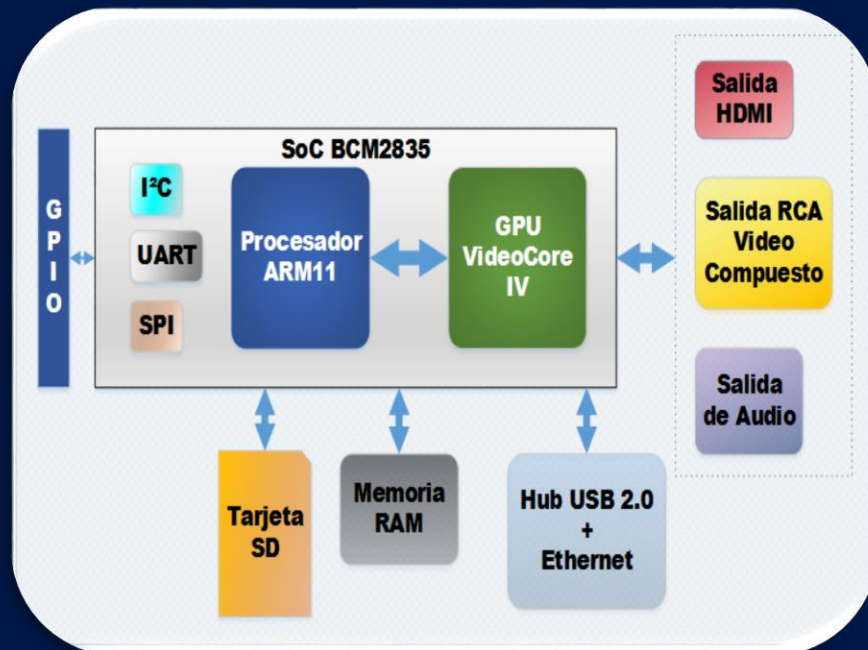
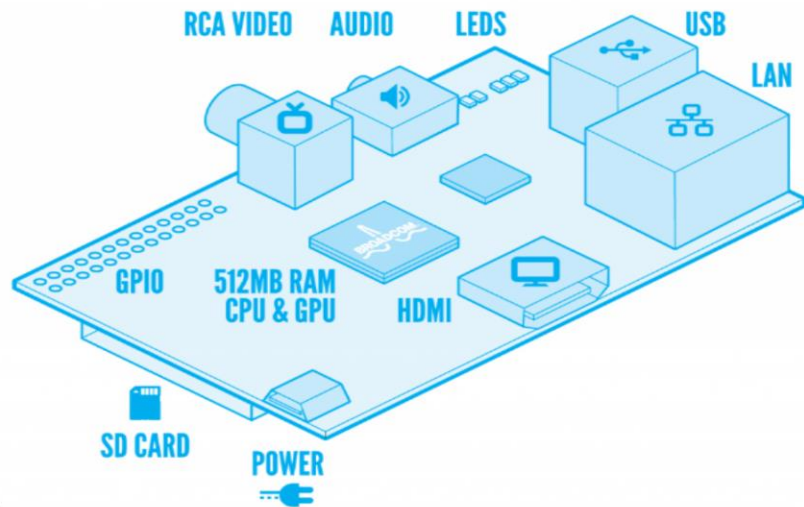
## Objective

Create a monitoring tool of DTMB signal using the development platform Raspberry Pi.

## Structure of the Proposed Design



## Raspberry Pi



## Raspberry Pi



Features	Details
SoC (System on Chip)	BCM2835 (Broadcom) CPU: ARM11 ARM1176JZF-S GPU: Broadcom VideoCore IV
System clock frequency	700 MHz
RAM	512 MB
Storage	SD memory Card
Network Interface	Fast Ethernet (10/100 Mbps)
Video	HDMI (1080p), CVBS (NTSC/PAL), DSI.
Audio	3.5mm jack
Camera Interface	CSI-2 Connector
USB	2 USB 2.0 Ports
I/O Interfaces	17 pin General purpose for I <sup>2</sup> C, UART and SPI.

## User Interface

The Raspberry Pi is able to work with different Operating Systems based on Linux distribution, as:

- Arch Linux ARM
- OpenELEC
- Pidora
- Raspbmc
- RISC OS (no Linux distribution)
- **Raspbian (recommended)**

## User Interface :: Overview

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### Herramienta de Análisis para Señales DTMB

Canal  

Fc 617 MHz

BW 6 MHz

Portadoras 3780

Constelación QAM64

P/N PN420

Entrelazado 720

FEC 0.6

Nivel Actual -53 dBm

SNR 32 dB

BER 0.0001

Resumen

Gráfica

Opciones

Última hora:

Nivel Máximo: -50 dBm

Nivel Promedio: -53 dBm

Nivel Mínimo: -56 dBm

Últimos 7 días:

Nivel Máximo: -50 dBm

Nivel Promedio: -53 dBm

Nivel Mínimo: -56 dBm

Últimas 24 horas:

Nivel Máximo: -50 dBm

Nivel Promedio: -53 dBm

Nivel Mínimo: -56 dBm

Registro de Eventos

03/02/2015 03:25:33: Pérdida de Señal  
03/02/2015 03:25:59: Restablecimiento de la Señal

Estado Actual: Registrando valores

Tiempo transcurrido: 1 d 01:03:35 h

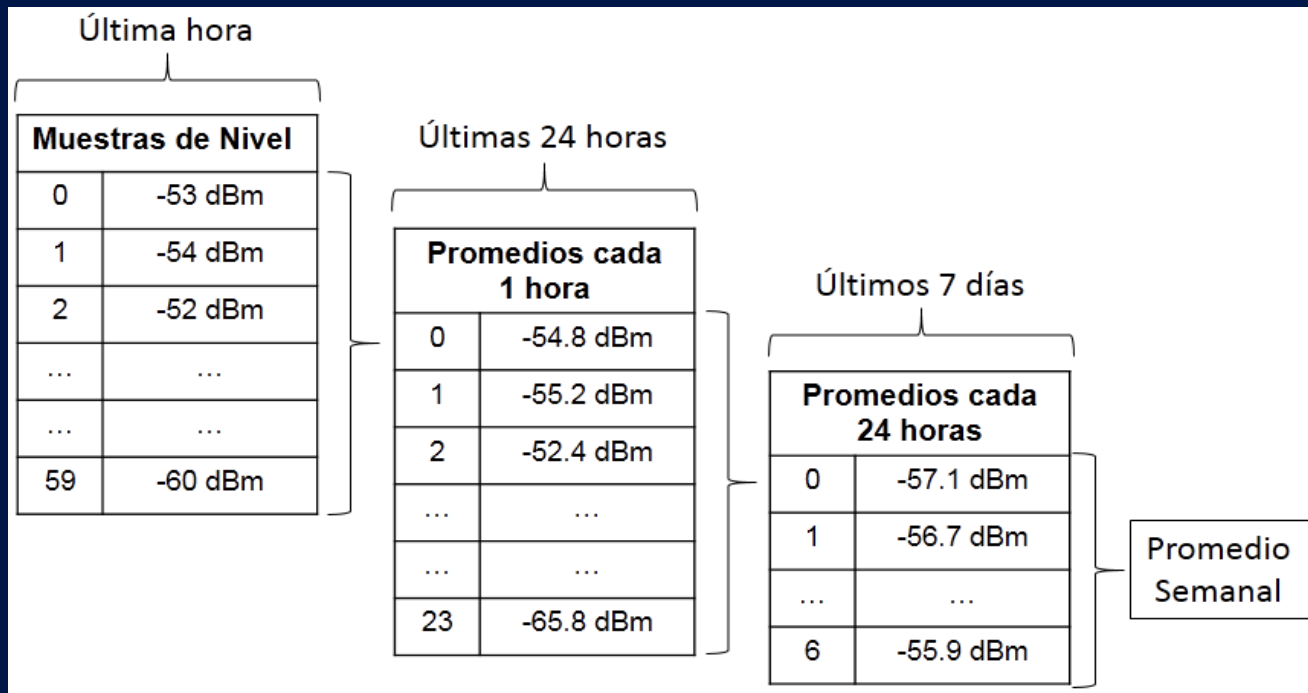
16-Sep-15

3<sup>rd</sup> Digital Television Forum

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## User Interface :: Design



## User Interface :: Chart View



## Additional Features

This system is using a computer, in this case is possible to add new features. One of them is, **export the measurements, historical graphs, event logs, etc. in a USB memory.**

## Conclusions

- The platform Raspberry Pi can be used as a DTMB signal analysis tool.
- Was presented an user interface design with basic information of the signal received during various time intervals.

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