



Basic on Digital Radio (IMC0018METD)

Brief Description

- In this course, you'll acquire an overview of the basic concept of data transmission through Microwave Radios, various multiplexing methods of PDH and SDH including the appropriate bit rates. Participants will learn the processes through which a digital base band signal is converted in a microwave signal suitable to be transmitted through the atmosphere with a minimum quantity of "errors"

Target Group

- All personnel starting a sequence of PDH and SDH training, from Planning and Engineering to Management and Service should attend.

Learning Target

- The main objective is to introduce the many concepts used in PDH and SDH data transport. It gives the students the building blocks for the courses to follow. This course is fundamental and should not be bypassed.

Prerequisite

- Participants must have some technical knowledge in telecommunications.

Contents

- DIGITAL RADIO - block diagram
- DIGITAL RADIO - PSK
- 2 PSK, 4PSK, MODULATOR & DEMODULATOR
- 4PSK = QPSK = 4QAM
- 4PSK : Effect of TX Filtering on the Constellation
- DIGITAL RADIO - 4 QAM RADIOS - QAM
- 16QAM MODULATOR & DEMODULATOR
- QAM RADIOS
- DIGITAL RADIO - DIFFERENTIAL MODULATION
- DIGITAL RADIO - BANDWIDTH
- BANDWIDTH : Square pulse spectrum
- BANDWIDTH: Nyquist filter
- BANDWIDTH : Raised cosine filter
- BANDWIDTH : Linear modulation
- BANDWIDTH : PSK spectrum
- BANDWIDTH : QAM filtered spectra
- DIGITAL RADIO - BIT TRANSVERSAL FILTER
- DIGITAL RADIO - SCRAMBLER - DESCRAMBLER
- DIGITAL RADIO - PSK/QAM ERROR PERFORMANCE
- DIGITAL RADIO - TCM MODULATION
- TCM MODULATION : 8TCM versus 4PSK



- TCM MODULATION : VITERBI example
- TCM MODULATION : BER monitoring
- TCM MODULATION : 16 TCM
- TCM MODULATION : 32 TCM
- DIGITAL RADIO - FSK
- FSK : CPFSK
- DIGITAL RADIO - MSK
- DIGITAL RADIO - GMSK
- DIGITAL RADIO - GTFM
- DIGITAL RADIO - MODULATION INDEX
- DIGITAL RADIO - BER MEASUREMENT METHODS
- PARITY CHECK CODING
- CYCLIC REDUNDANCY CODE
- CRC : a simple example
- CRC : conclusion
- dbm
- POWER and dbm.
- NOISE POWER
- BER versus RX POWER

Duration

3 – 5 days

Maximum number of participants (suggested)

10

Course Type

Theoretical course
