Emona TIMS - TutorTIMS-R2 - Typical Experiment Capabilities (V2.0)

web: www.webtims.com www.tims.com.au

KEY: A = TutorTIMS-Advanced
B = TutorTIMS-Basic
SS = TutorTIMS with Signals & Systems
FW = TutorTIMS-FreeWare

A, B, FW - Introduction to TIMS
A, B, FW - Modelling equations and block diagrams
A, B, FW - Double Side Band Suppressed Carrier - generation
A, B, FW - Product demodulation
A, B, FW - AM - amplitude modulation - I
A, B, FW - AM - amplitude modulation - II
A, B - Envelopes
A, B, FW - Envelope detection
A, B - Sing Sideband (SSB) generation - phasing method
A, B - SSB demodulation - phasing method
A, B - ISB - independent sideband
A, B, FW - Weaver`s SSB generator
A, B - Weaver`s SSB demodulator
A, B, FW - Armstrong`s phase modulator
A, B - FM - generation by VCO
A, B - FM - demodulation by PLL
A, B - FM - demodulation by zero crossing counting
A, B - Sampling theorem
A, B - PAM and TDM
A - Power measurements
A, B - FDM - frequency division multiplex
A, B - Phase division multiplex - generate
A, B - Phase division multiplex - demodulation
A, B - PWM - pulse width modulation
A, B - Carrier acquisition - PLL
A, B, FW - Complex analog messages
A - PCM - encoding
A - PCM - decoding
A, B, FW - ASK - generation
A, B - ASK - demodulation
A, B, FW - BPSK - modulation
A, B - BPSK - demodulation
A, B - The Costas loop
A, B - QPSK - generation
A, B - QPSK - demodulation
A, B - FSK - generation
A - Signal constellations
A - DSSS - spread spectrum
A, B, FW - Eye patterns
A, B, FW - PRBS messages
A - Detection with the DECISION MAKER (hard decisions)
A - The noisy channel
A - Bit Error Rate (BER) instrumentation
A - BER measurement
A - Line coding & decoding
A, B, FW - QAM - generation
A, B - QAM - demodulation
A - QAM and 4-PSK
A - DPSK
A - PCM-TDM 'T1'
A - DPSK & BER
A - DPSK and carrier acquisition
A - CDMA - introduction
A - CDMA - processing gain
A - CDMA - 2 channel
A - CDMA multichannel (4-ch send & receive)
A - CDMA at carrier frequencies
A - non-linearity & distortion
A, B - PPM - pulse position modulation
A - speech in telecommunications
A - binary data via voiceband*
A - multi-level data via voiceband
A - data rates & voiceband modems – xmsn
A - data rate & voice - xmsn & demod
A - Frequency synthesis with the PLL
A - block code encoding (method 1)
A - Block coding gain
A - block code decoding
A - superheterodyne - (two channels)
A - ISI: PAM & ASK - band limited channels
A - equalization for ISI
A - ISI: pulse shaping for band limited channel
A - baseline wander & line coding
A - timing jitter in band limited systems
SS - Special signals – characteristics and applications
SS - Special signals – characteristics and applications
SS - Modeling linear and nonlinear systems
SS - getting started with poles and zeros in the Laplace domain
SS - Using poles and zeros in the z plane – discrete – time filters
SS - Discrete – time filters – practical applications
SS - Getting started with the FIR module
SS - Getting started with the Laplace Biquad module
SS - Getting started with the z – biquad module

Note: Many other Emona TIMS Signals & Systems (SS) experiments can also be implemented by the user using the modules supplied.