NEW Signals & Systems Experiments Option Board for the ETT-101/C Telecoms Experimenter

Model number ETT-101-40

Hardware experiments bring together the worlds of mathematical theory and practical implementation.



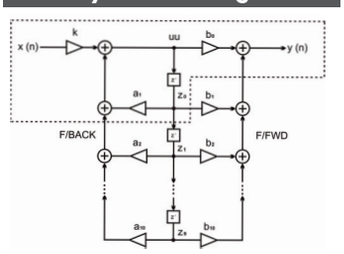
The experiments covered by the EMONA Signals & Systems board bring together the worlds of mathematical theory and practical implementation.

Students are able to explore, in a hands-on manner, the representation of physical processes by mathematical models and test and measure the benefits and limitations of such models.

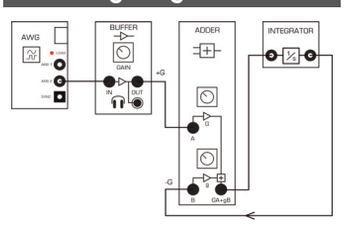
Through measurements, calculations and observations students are able to consolidate understanding the complementarity of time and frequency domains.



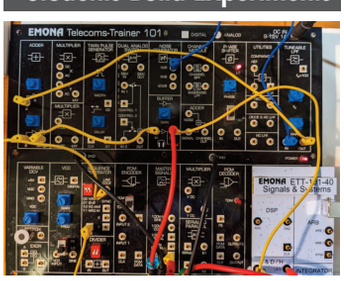
Theory - Block Diagrams



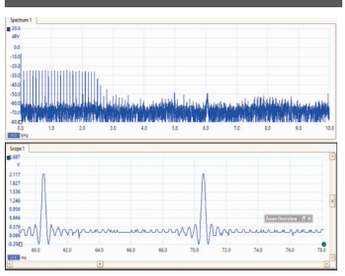
Patching Diagrams



Students Build Experiments



Student Measurements



COMPREHENSIVE LAB MANUAL - with chapters correlated to the most popular Signals & Systems text books

Students are guided through each experiment via a comprehensive *ETT-101-40 Experiment Control Panel* program with one TAB/window per experiment. Hardware parameters such as filter coefficients and required experiment signals (from an integrated AWG) are controlled via the *ETT-101-40 Experiment Control Panel* program.



- ***Lab 1:*** *Special signals – characteristics and applications*
- ***Lab 2:*** *Systems: Linear and non-linear*
- ***Lab 3:*** *Unraveling convolution*
- ***Lab 4:*** *Integration, convolution, correlation & matched filters*
- ***Lab 5:*** *Exploring complex numbers and exponential functions*
- ***Lab 6:*** *A Fourier series analysis*
- ***Lab 7:*** *Spectrum analysis of various signals*
- ***Lab 8:*** *Time domain synthesis of RC networks*
- ***Lab 9:*** *Poles and zeros in Laplace domain*
- ***Lab 10:*** *Sampling and Aliasing*
- ***Lab 11:*** *Getting started with analog-to-digital conversion*
- ***Lab 12:*** *Discrete-time structures: Finite Impulse Response (FIR) filters– FIR*
- ***Lab 13:*** *Poles and zeros in the z-plane: IIR systems*
- ***Lab 14:*** *Practical aspects of discrete time structures*
- ***Lab 15:*** *Design & implement filters from specification*
- ***Lab 16:*** *Exploring different digital filter structures, and comparing floating point and fixed point implementations*

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