

Advance Broadcast Measurements

Maximise your broadcast test and measurement efforts by attending this practical 2-days course.

Benefits:

- This course teaches you to use the appropriate tools to perform:
- Measure key digital system parameters.
- System proof of performance testing
- Alignment and calibration.
- Acceptance testing.
- Diagnostics and troubleshooting.
- Quality control – focusing on colour space compatibility or gamut errors.
- Preventive maintenance – gauging the health of the systems, predicting impending failure and taking pre-emptive measures.

What you will learn:

- Video concepts and related measurements: Gamma, Y Cb Cr, Y'C'b C'r and Y Pb Pr, SC/H phase, Differential Phase/Gain, 2T pulse and bar etc.
- Audio concepts and related measurements: Harmonic distortion, SNR (Signal to Noise Ratio), weighting networks, dBu, dBFS, Audio to video delay etc.
- Digital Measurements: Eye-height, jitter, error Seconds Bit Error Rate, Forward Error Correction techniques, Constellation display etc.
- Using the tool of the trade: Waveform and vector monitors, test signal generators, audio to video synchronizers and MPEG analysers.
- Design a measurement plan for your broadcast facility.

For who:

Maintenance engineers, Senior operations staff, Senior QC staff or anyone wishing to gain in depth knowledge of advance broadcast measurements.

Participants should have attended DigiWorkz Broadcast Operations Refresher or have equivalent experience.

Supported by:

Course Outline:

Overview: Measurement in a broadcast system.

- Signal formats and applicable tools
- Jargon buster: Impulse response. 2T pulse and bar, gamut, colour space, S/N ratios, dB, dBu, dBFS, dBi, dBd, dBm, dBW, Modulation Depth, EDH, jitter, SI/PSI, PSIP.

Measurement plan and strategy (discussion/project work)

- Purpose for making measurements.
- Manual and automated measurement plan for your facility.
- Propose a measurement plan for your facility

Video Concepts.

- RGB, Y Cb Cr, Y' C'b C'r, Y Pb Pr and Gamma (demo)
- Encoded video: PAL/NTSC and SDI (demo)
- Colour spaces, Gamut and colour temperature

Video measurements (practical)

- Signal to noise, weighted and weighted,
- Return loss
- Composite Video Non-Linearity: Differential Gain, Differential Phase and group Delay
- Frequency response: Multi-burst, 2T pulse and bar

Audio Concepts

- Human hearing model: frequency response and weighting networks.
- Sound pressure vs power, microphone and resulting audio signal
- Balanced vs Unbalanced audio (demo)
- Distortion noise, Harmonic distortion, frequency response/ EQ

Audio Measurements (practical)

- Gain
- Signal to noise ratio
- Frequency response

Digital concepts

- Quick revision: ADC, DAC, sampling: bit-depth and sampling frequency
- Encoding: bits per symbol, QPSK, QAM
- Discrimination and decision thresholds
- Amplitude variations: Cable/channel loss
- Waveform distortion: Eq, return loss

Digital Measurements (practical)

- BER, Error Second and EDH
- Jitter measurements: eye display
- PCR jitter
- Constellation display
- Modulation error ratio

Supported by:

Venue:

DigiWorkz, located at The School of Film & Media Studies in Ngee Ann Polytechnic, to provide broadcasters and production house with hands on skills taught by expert trainers.

Duration:

2 days course (9.30 am to 5.30 pm)

Fees:

S\$ 950.00 (before 7% GST)

Contact:

Ho Siew Mun
siewmun@editecintl.com

Supported by:

REGISTRATION FORM

Please fax this form to (65) 62828 039 to book your place

Yes! Please register the following participant(s) for this course.

Advance Broadcast Measurements

Course fees: **S\$ 9500.00** (before 7% GST) Duration: **2 days**

Course dates: ____/____/____ to ____/____/____

1) Name (Dr/Mr/Mrs/Ms).....
Title:
Email:

2) Name (Dr/Mr/Mrs/Ms).....
Title:
Email:

Company:

Address:

Email:

Tel: Fax:

Nature of Business:

Important notice:

Payment must be received **7 days prior to the course** to guarantee your place.

Method of payment:

Please arrange a crossed cheque or bank draft made payable to EDITEC INTERNATIONAL PTE LTD.
And mail your payment together with a copy of this registration to:

61 Tai Seng Avenue,
#05-01 UE Print Media Hub,
Singapore 534167

Enclosed is our cheque /draft for S\$

Overseas delegates may pay by **telegraphic transfer** into the account of Editec International Pte Ltd to the following account:

Account No.932-343-086-8
United Overseas Bank
Block 803 King George's Avenue
#01-242/244
Singapore 200803

Please quote "name of course" and your company name in your payment instructions.

Cancellation and transfers:

If you are unable to attend, a substitute delegate is welcome at no extra charges. Please provide the name and title of the substitute delegate at least 3 days prior to the seminar.

A full refund less 10% admin charge will be given for cancellation received in writing 14 days before commencement of the course.

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