

Summary Information

Module Code	5201AMP
Formal Module Title	Broadcast Standards
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Sebastian Chandler-Crnigoj	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Colin Robinson	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	30
Practical	4
Tutorial	11

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To explain the nature and composition of primarily baseband broadcast quality signals; to describe the operation of (and standards required for) broadcast equipment to recognised professional industry practice.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Identify and measure parameters of typical examples of broadcast quality signals.
MLO2	Explain the principles of studio and portable equipment and evaluate trade-offs in their selection and operation
MLO3	Analyse the nature of broadcast signals

Module Content

Outline Syllabus
<p>Audio signals, transduction and parameters Alignment and permitted maximum levels, signal decibels, international measurement scales Phantom power arrangements, patching and connector systems to broadcast standards Peak vs loudness monitoring, headroom standards, dynamic range compression Digital audio sampling frequencies, aliasing and filtering, quantisation levels & noise Inter- and Intra-studio Tx systems (e.g. AES/EBU) Audio file formats, data rate, bit rate reduction & acceptable contribution delivery standards Maximum Coding Level and digital headroom Relationship between video and audio signals Scanning, resolution, effect of Interlace, flicker, frame rates, shutter speeds, gamma Blanking, active line, visible lines, synchronisation & frame stores Colour vision and standards, luma & chroma signals Component and composite signals, terminology, standard test signals, calibration Digital video signals, (e.g. Rec 601/709), Sampling formats (e.g. 4:2:2) and harmonised sampling frequency, video quantisation levels & noise DVE, captions, studio & OB layout and operations Inter- and Intra-studio Tx (e.g. HD-SDI), signal paths: studio to consumer, storage, play-out Image file formats, data rate, bit rate reduction, concept of asymmetric encoding/decoding & acceptable contribution delivery standards Networks: What are they? Why do we use them? Packets; addressing; data; capacity; storage; bandwidth; delay; errors/corruption, data loss, QoS, Internet. Nomenclatures, EBU emission recommendations, acquisition & storage</p>

Module Overview

Additional Information

This module provides information on the nature and composition of primarily baseband broadcast quality signals. It covers the professional operation of broadcast equipment and the standards required by broadcast organisations.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Practice	Signal measurements	50	0	MLO1
Centralised Exam	Examination	50	2	MLO3, MLO2