EERI423 Exam breakdown 2013-2016

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1   2016

- Question 1

    Elements of a communication system

    Block diagram of a phase locked loop synth

- Question 2

    Square law mixer

    Receiver noise calcs

    Image frequency

    Block diagram modern direct conversion Receiver

- Question 3

    Duplexing

    Shannon-Hartley eqn

    Fading margin

    LTE

- Question 4

    Power budget

- Question 5

    Cellular systems

2   2015

- Question 1

    Baseband vs broadband

    multiplexing

    Quantizing noise

- Question 2

    Block diagram of a modern digital transmitter

    Block diagram of a direct digital synthesizer

    Receiver noise calcs

    theory

      SDR

      Mixer in a digital synth

      Automatic gain control

- Question 5

    Cellular systems

3   2014

- Question 1

    Form factor of a band pass filter

    Insertion Loss

    Multiplexing

    Adding up gains

- Question 2

    Block diagram of a typical FM transmitter

    Variable modulus transmitter

    Block diagram of a double heterodyne transmitter

    Receiver noise calcs

4 2013

5 List of block Diagrams

6 Cellular systems

7 Path Loss

8 Receiver Noise

9 Shannon Hartley

- $C = 2B$ Where C is the capacity in bps and B is the bandwidth in Hertz

- It assumes only 2 encoding levels are used, i.e. High=1 and low=0

- $C = 2Blog_2 N$ Where N is the number of encoding levels

- $C = Blog_2\left(1 + \frac{S}{N}\right)$ Where $\frac{S}{N}$ is the SNR *As a ratio, not as DB*

Consider compiling exam theory questions into flash cards, current flash cards too many