

REVIEW FOR EXAMINATION NO.2

Examination No. 2 will be given during class on Friday, July 18, 2003 from 10:40am to 11:50am. It will last for 70 minutes and is open lecture notes. If relationships you need are not available, ask your proctor or make reasonable assumptions and continue with the problem. The exam will consist of approximately 4 problems. Below is a list of the material for which you are responsible. It covers Lectures 100 through 160 excluding Lecture 140.

Applications of Frequency Synthesizers

Modulation – amplitude, frequency and phase

SSB spurs

Noise in PLLs – VCO, reference

Use of the PLL for modulation and demodulation

Frequency synthesizers-

Multi-loop

Fractional-N

PLL Circuits

Analog multiplier circuits

Digital detector circuits

Filters

Charge pumps

Voltage controlled oscillators

Tuned – RC, LC

Untuned – Relaxation,

Frequency of oscillation

Gain of the loop

Amplitude stabilization principle

Varactors

Phase Noise

Jitter and phase noise in PLLs

Spurious sidebands in PLLs (phase detector)

Linear time invariant model of VCO phase noise

Linear time varying model of VCO phase noise

Phase noise in LC oscillators

Phase noise in ring oscillators

IC Frequency Synthesizers???

First topic

Second topic