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SKEE 3732
FACULTY OF ELECTRICAL ENGINEERING,
UNIVERSITI TEKNOLOGI MALAYSIA, JOHOR BAHRU

BASIC COMMUNICATION LABORATORY

AMPLITUDE MODULATION (AM) PRE-LAB

Prepared by : HEAD OF BASIC COMMUNICATION LABORATORY		Approved by : HEAD OF COMMUNICATION ENGINEERING DEPARTMENT	
Name	: DR. NURUL ASHIKIN DAUD : TS. DR. NIK NOORDINI NIK ABD MALIK	Name	: ASSOC. PROF. IR. TS. DR. NURUL MU'AZZAH BINTI LATIFF
Assisted by	: PN. NORHIDAYU BASIR : CIK NORAZAH ADZHAR : PN. SYUKHIRIZA ALI		
Signature & Stamp	:  DR. NURUL ASHIKIN BINTI DAUD Senior Lecturer Faculty of Electrical Engineering Universiti Teknologi Malaysia 81310 Skudai, Johor, Malaysia Tel: +607-6557114 Email: nurulashikindaud@utm.my.	Signature & Stamp	:  PROF. MADYA IR. TS. DR. NURUL MU'AZZAH BINTI ABDUL LATIFF Ketua Jabatan Jabatan Kejuruteraan Komunikasi Fakulti Kejuruteraan Elektrik Universiti Teknologi Malaysia 81310 Johor Bahru, Johor
Date	:	Date	:

4.0 PRE-LAB PROCEDURE

- Each group **must complete the Pre-Lab experiment and discussion before attending the laboratory session**. The completed answers (including flow graph and output signals) must be **printed**, brought **to the lab** and **shown to the supervisor for verification** at the beginning of the session.
- Students **must** save all flow graph files on a **portable storage device** (e.g., pendrive, external hard disk, or other suitable media) or **cloud storage** (gdrive) to ensure they can be readily accessed and executed during the lab session.

Experiment 4.1: Full AM Modulator/Transmitter

- (1) Install the windows-based GNUradio by referring to the link provided

Link: <https://drive.google.com/drive/u/1/folders/1N0SzktKDeLhIFOKOJ9C608CLeK9litxl>

- (2) Start a new file in GNU Radio Companion (GRC). There will be two blocks in the workspace, i.e. **Options** block and **Variable** block. Open **Variable** block. Set the **Sampling Rate** in the **Variable** block to 200 kHz and variable name to **samp_rate**. In **Options** block, select **WX GUI**.
- (3) Create a signal source block by selecting **Signal Source** block. It should already be set to generate a cosine of frequency 1 kHz and amplitude 1. Change the frequency to 4kHz. Change the output type from "**Complex**" to "**Float**".
- (4) Connect the signal source block to a **Throttle** block. Then connect the **Throttle** output to a **WX GUI Scope Sink** and **WX GUI FFT Sink**. (Ensure all block types are set to **Float**, and the sampling rate is set to **samp_rate**).
- (5) Execute the file by hitting the gear icon in the GRC menu (taskbar), then click run. Observe the signal in both **time domain (Scope Sink)** and the **frequency domain (FFT Sink)**.
- (6) Take the save screenshots of both outputs. Save the GRC flow graph as **PreLab_AM.grc** for use in the in-lab session.