**深 圳 大 学 实 验 报 告**

**课程名称： 现代通信原理**

**实验项目名称： 实验一**

**学院： 电子与信息工程学院**

**专业： 电子信息工程**

**指导教师： 陈真**

**报告人： 余韦藩 学号： 202028510 班级： 文华班**

**实验时间： 2023.03.02-2023.03.09**

**实验报告提交时间： 2023年3月9日**

**教务部制**

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| **实验目的与要求：**  微信图片_20230308204951 |
| **内容和步骤：**  In this experiment, we set the transmit signal s\_=sin(4t). The signal transmitted in the first path is s1=sin(4t+) whose and the signal transmitted in the second path is s2=sin(4t++)=sin(4t+). In addition, we set attenuation coefficient a=0.8 .   1. **Plot the transmit signal and receiving signal in time domain**   微信截图_20230308230732   1. **Plot the transmit signal and receiving signal in frequency domain**   微信截图_20230308230718   1. **Plot the amplitude-frequency and phase-frequency characteristic of the channel**   First we should calculate the channel expression in frequency domain according to the following formula.  微信图片_20230308232216  Then we plot the corresponding characteristic as shown in the following figure.  微信截图_20230308230705  All the codes are shown in the following figure. The notes have been detailed remarked so It is clear to read the codes without any additional words.  微信截图_20230308230958  微信截图_20230308231011  微信截图_20230308231021  微信截图_20230308231030 |
| **实验结论：**   1. For multi-path transmission, the transmit signal will decay with the attenuation coefficient. The receiving signal is obtained by adding the two different transmitted signals with different time delay. 2. In addition, the frequency of the receiving signal is equal to the transmit signal. 3. The characteristic of channel only depends on the time delay which has no relationship with the transmit signal. |
| **指导教师批阅意见：**    **成绩评定：**  **指导教师签字：**  **年 月 日** |
| **备注：** |

注：1、报告内的项目或内容设置，可根据实际情况加以调整和补充。

2、教师批改学生实验报告时间应在学生提交实验报告时间后10日内。