**Project 2: OFDM Technology**

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| **Author** | Name： Student ID: |
| **Introduction**  In this project, we will design a OFDM communication system and test its function in MATLAB. The OFDM communication system can be divided into three parts, DAC and transmitter, the channel, receiver and ADC. Here transmitter will encode the imagery and real part into real signal, and receiver will extract then and reconstruct the initial signal.  **Lab results & Analysis**：  Task a:  In this task, we will design a receiver and ADC, which is described in Block 4.  The receiver here is used to extract the signal. In receiver, we have:  Then we apply a low pass filter to the signal before merging them together.  Task b:  We have  The channel impulse response is  So CP > 3T =3us, so CP = 4us  T is the sampling period.  After demodulation the signal passed the channel, we get signal , here we apply sampling to the signal  Omit the modulation process, we have:  During the transmitting process, we have:  So we replace the part in y[n]  So we get  **Note**: Please indicate meaning of the symbols in all expressions. Please indicate the coordinate and unit in all figures. | |
| **Experience**  You can write your experience with this project. Any comment and suggestion on this course are also very welcome. | |
| **Score** |  |

字体：英文Times new Roman；中文宋体，正文五号

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