

Lab 2 Demo

1. Matlab decoder (40%)
 - a. Plot average SNR for each data symbol.
(only consider **data subcarriers**; pilot subcarriers are excluded)
 - b. Plot average SNR for each subcarrier.
 - c. Plot the real part of channel

[PS] Be careful! The index of subcarriers should be [-32 ~ -1, 1 ~ 32]
2. Report (20%)
 - a. Attach the results (figures) mentioned in part 1.
 - b. Also, write down the obstacles / challenges you encountered in this lab assignment.
 - c. What have you learned in this lab assignment
3. USRP Demo (30%)
 - a. Each group has 15 chances to do synchronization.
 - b. If the synchronization successes, you can get the score (30%).
4. Bonus (10%)
 - a. The synchronization in part 2 is limited to at most 15 times.
 - b. However, you can modify the cpp code to do synchronization.
(Use your innovation!)
 - c. If you succeed synchronization in x trials, the bonus score is $\max\{(11-x), 0\}$

[Hint] The original synchronization uses the *thres* value to detect the pulse. You can try to modify the value smartly; or you can design another kind of "pulse."

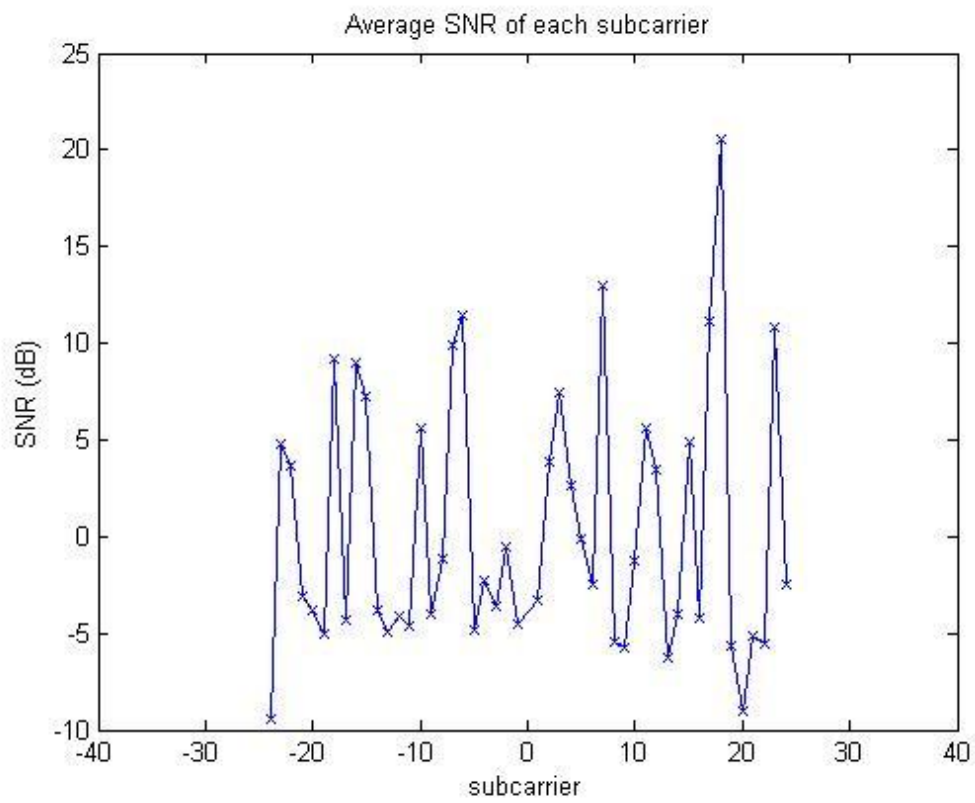
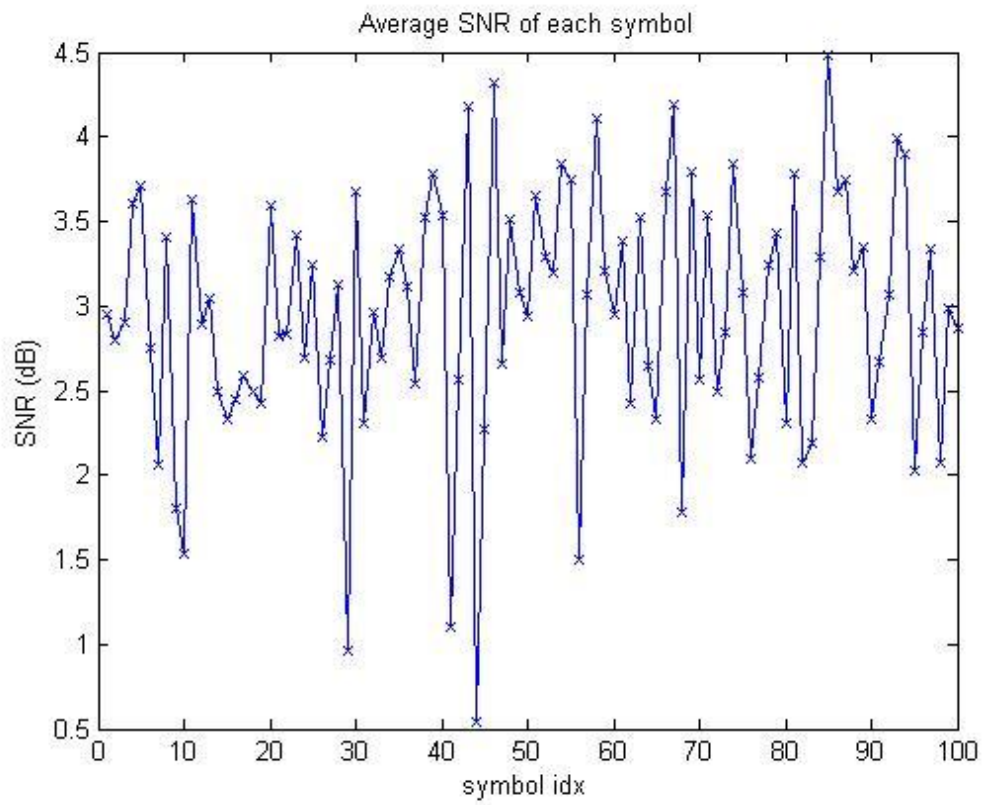
File required: [zip them, and e-mail to wn@csie.ntu.edu.tw]

1. The decoder matlab file:
 single_transmission_decode.m
 phaseTrack.m
2. Your cpp code:
 single_tx_sync.cpp
3. Your report
4. Do **NOT** submit any trace file.

Demo:

1. **Time / date:** 19:00 ~ 20:00, 4/9 (Wed.), @ R202
2. Prepare your own computer and source code.

(Sample output of part 1)



Channel Estimations

