The following QuickGuide provides step by step instructions on how to use the RX DFE simulation (simulating RF input taken from the memory).

DDR Memory with 10 Sub frame data

FFT H/W Module

CB Memory

Rest of PUSCH Processing

Fig: Processing of RX chain (PUSCH) after separating DFE and taking input samples from DDR Memory.

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A full description of the utility and usage may be found in:

* DFE\_Separate\_RX.doc

Sample scripts (macsim, binary files and matlab xml) may be found under

..\Boot\Flash\_bootloader\scripts\Test\_Scripts\10Mhz\scriptX

Or

..\Boot\Flash\_bootloader\scripts\Test\_Scripts\20Mhz\scriptX

**Step1 (Matlab Data preparation)**

The data for the test is prepared using *matlab* based on the following information (as specified in a XML file):

* BW
* SF number (usually 0:9)
* RNTI
* RB start and RB Num
* MCS
* Number of Antennas

The data prepared is in text format and contains files in the name *frame0\_subframe0\_rx\_fft\_in.txt,* *frame0\_subframe1\_rx\_fft\_in.txt so on till frame0\_subframe9\_rx\_fft\_in.txt* for both the antennas copy the matlab generated file and place them in the appropriate folder (depending on the BW and Antenna)  i.e. ..\Boot\Flash\_bootloader\scripts\Test\_Scripts**\**TextToBinary\10Mhz\Ant0and..\Boot\Flash\_bootloader\scripts\Test\_Scripts**\**TextToBinary\10Mhz\Ant1

or

..\Boot\Flash\_bootloader\scripts\Test\_Scripts**\**TextToBinary\20Mhz\Ant0and..\Boot\Flash\_bootloader\scripts\Test\_Scripts**\**TextToBinary\20Mhz\Ant1

**Step2 (Convert files to Binary)**

Use **textToBinaryLinux** for linux or **textToBinaryWindows.exe** for windows to create a binary for the 10 sub frame data for 10 and 20 Mhz bandwidth and both antennas. Use command **textToBinaryWindows.exe <BW> <antId>** to generate binary files. **textToBinaryWindows.exe help** can be used to get help on the usage.

For example, generating binary files for single antenna 10MHz:

* ./textToBinaryLinux 10 0

The binary files shall be generated in ..\Boot\Flash\_bootloader\scripts\Test\_Scripts**\**TextToBinary\outputBinary

For Example: 10\_Subframe\_Data\_10Mhz\_Ant0.bin

Rename the binary file to be like the macsim script file bellow:

scriptXant0.bin [and scriptXant1.bin]

**Step3 (Create a matching macsim script)**

Create a macsim script file name scriptX matching to the binary data prepared (e.g. the PUSCH requests of every sub-frame should match the value defined in step1)

**Step4 (Move file to the release directory)**

It is best to copy the macsim script file with the corresponding binary files into the branch release folder (the one tftp points when code is executed). i.e.

scriptX

scriptXant0.bin

scriptXant1.bin

**Step5 (SW preparation)**

Compile the SW under test with the following modifications (I\_phy.h):

* MAC-SIM mode
* Comment #define DFE\_ENABLE\_RX (to force the code to take data from the DDR)

**Step6 (Test execution)**

In uMon prompt type:

* Dasim –s script

This will load both mac-sim script and the given binary files into the DDR

* Run

To execute the code in test mode