

WCDMA_DL_source

Where To Find This Example

Select **Help > Open Examples...** from the menus and type either the example name listed above or one of the keywords below.

Or in Version 13 or higher you can open the project directly from this page using this button. Make sure to select the **Enable Guided Help** before clicking this button.

Open Install Example

Design Notes

Downlink WCDMA Signal Source:

This project implements a downlink WCDMA signal source according to ETSI TS 125 101 V6.11.0 (2005-09) Technical Specification. The measurement DPCH channel of the WCDMA source is configured as a 12.2 kbps DL reference measurement channel, defined in Annex A.3.1. The source contains all physical channels used for connection setup (Annex C.2) and during connection (Annex C.3). Since measurements are performed during connection, the physical channels in the WCDMA source are configured according to Annex C.3.

Source Configuration:

The WCDMA source may be configured by setting appropriate parameters in the Global Definitions window. These parameters, which are boxed for easy access, are:

OutPowerLevel_dBm: Output Power Level (dBm)

CarrierFreq_MHz: Carrier Frequency (MHz)

The value of samples/symbol may be changed by clicking on the Options/Default System Options in the Menu bar, then changing the Oversampling (_SMPSYM) parameter in the Simulator tab.

The following parameters are defined in the HSDPA specification document mentioned above and, in most cases, should not be changed:

Ch_levels: Channel relative power levels, format given below
(SCH, P-CCPCH, P-CPICH, PICH, S-CCPCH, AICH, DPCH, OCNS, HS-SCCH, HS-PDSCH)

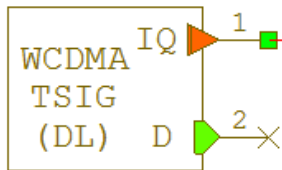
DPCH_SlotFmt: Slot format used for measurement DPCH channel

DPCH_Code: Channelization code used for measurement DPCH channel

System Diagram - WCDMA Downlink Signal Source

$\text{CarrierFreq_Hz} = \text{CarrierFreq_MHz} * 1e6$
 $\text{OutPowerLevel_dBW} = \text{OutPowerLevel_dBm} - 30$

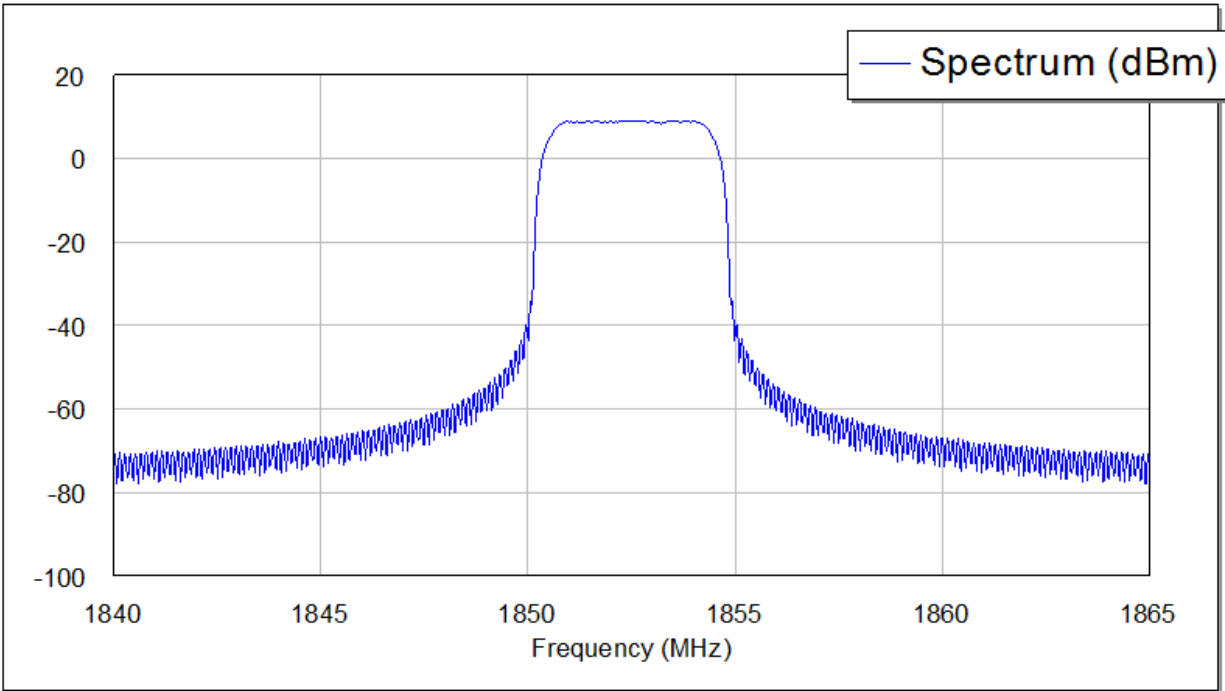
SUBCKT
ID=S1
NET="WCDMA_DL_TSIG"
TXOutLevel=OutPowerLevel_dBW dBW
TXCarrierFreq=CarrierFreq_Hz Hz
Ch_levels=Ch_levels dB
DPCH_SlotFormat=DPCH_SltFmt
DPCH_Code=DPCH_Code
DPCH_SF=128



TP
ID=TP1

Downlink WCDMA Source

Graph - Spectrum



Graph - Waveforms

