

Application Datasheet

Visual System Simulator LTE Communication Standard - Specification Details

Long Term Evolution (LTE), often referred to as fourth-generation (4G) LTE, has become the worldwide standard for wireless communication of high-speed data for mobile devices and data terminals. For LTE to work with existing networks, designers must employ complex modulation schemes, multiple-input and multiple-output (MIMO), and other challenging features. The details of the LTE specification as implemented within Visual System Simulator™ (VSS) includes:

MIMO Downlink Sources & Receivers	Uplink Sources & Receivers	Channel Coding
<ul style="list-style-type: none"> FDD and TDD Encoding for physical data channel (PDSCH) Physical control channels (PDCCH, P-SCH, S-SCH and reference signals) Full flexibility in resource block allocations Downlink signal source for 1, 2, or 4 antennas with pre-coder and layer mapping supporting spatial multiplexing and transmit diversity Downlink signal sources/transmitters for 1, 2 or 4 antenna ports 	<ul style="list-style-type: none"> FDD Support for multiple PUSCH channels SRS Full flexibility in resource block allocations Scrambler, modulation mapper, transform precoder for SC-FDMA 	<ul style="list-style-type: none"> Convolutional Encoder Viterbi Decoder CRC Encoder/Decoder Scrambler/DeScrambler DL Channel Encoder/Decoder TurboCoder/TurboDecoder DL Frame Assembler/ Disassembler UL Channel Encoder/DecoderQW UL Channel Interleaver/ Deinterleaver
MIMO PreCoder	Modulation	Source
<ul style="list-style-type: none"> DL MIMO Precoder DL MIMO Layer Mapper DL MIMO Modulation Mapper DL MIMO Deprecoder DL MIMO Layer Demapper DL MIMO Modulation Detector 	<ul style="list-style-type: none"> DL Layer Mapper/Demapper DL Modulation Mapper DL Precoder DL OFDM Modulator DL Modulation Detector DL Deprecoder DL OFDM Demodulator DL MIMO Mapper UL Layer Mapper/Demapper UL SC-FDMA Modulator/ Demodulator UL DFT (Transform Precoder/Deprecoder) 	<ul style="list-style-type: none"> DL 1Ant Source DL MIMO 2Ant Source DL MIMO 4Ant Source DL TX UL Source
Multiplex	Receiver	Signaling
<ul style="list-style-type: none"> DL Frame Assembler/Disassembler DL OFDM Sym Extract DL Slot Extract DL MIMO DemuxCIR UL Frame Assembler/Disassembler UL SC-OFDM Sym Extract UL Slot Extract 	<ul style="list-style-type: none"> DL 1Ant Receiver DL MIMO 2Ant Receiver DL MIMO 4Ant Receiver DL Receiver UL Receiver 	<ul style="list-style-type: none"> PDSCH and PDCCH Generator P-SCH and S-SCH Generator DL REFSIG Generator PDSCH, PDCCH and PUSCH Scrambler UL PUSCH Generator UL REFSIG Generator
Sync Signal		
<ul style="list-style-type: none"> DL Pilot 		