



# LTE

The UMTS Long Term Evolution

FROM THEORY TO PRACTICE

Edited by: Stefania Sesia • Issam Toufik • Matthew Baker

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# LTE – The UMTS Long Term Evolution

From Theory to Practice

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# List of Acronyms

|   |   |
|---|---|
| <b>3GPP</b> 3 <sup>rd</sup> Generation Partnership Project    | <b>AS</b> Angular Spread*   |
| <b>3GPP2</b> 3 <sup>rd</sup> Generation Partnership Project 2 | <b>A-SEM</b> Additional SEM   |
| <b>AC</b> Access Class  | <b>ATDMA</b> Advanced TDMA  |
| <b>ACI</b> Adjacent Channel Interference                      | <b>ATIS</b> Alliance for Telecommunications Industry Solutions                  |
| <b>ACIR</b> Adjacent Channel Interference Ratio               | <b>AuC</b> Authentication Centre  |
| <b>ACK</b> Acknowledgement                                    | <b>AWGN</b> Additive White Gaussian Noise                                       |
| <b>ACLR</b> Adjacent Channel Leakage Ratio                    | <b>BCC</b> Base station Colour Code   |
| <b>ACS</b> Adjacent Channel Selectivity                       | <b>BCH</b> Broadcast CHannel  |
| <b>ADC</b> Analogue to Digital Converter                      | <b>BCCH</b> Broadcast Control CHannel   |
| <b>ADSL</b> Asymmetric Digital Subscriber Line                | <b>BCJR</b> Algorithm named after its inventors, Bahl, Cocke, Jelinek and Raviv |
| <b>AGI</b> Antenna Gain Imbalance                             | <b>BER</b> Bit Error Rate   |
| <b>AM</b> Acknowledged Mode                                   | <b>BLER</b> BLock Error Rate  |
| <b>AMC</b> Adaptive Modulation and Coding                     | <b>BM-SC</b> Broadcast-Multicast Service Centre                                 |
| <b>AMPS</b> Analogue Mobile Phone System                      | <b>BP</b> Belief Propagation  |
| <b>AMR</b> Adaptive MultiRate                                 | <b>BPRE</b> Bits Per Resource Element   |
| <b>ANR</b> Automatic Neighbour Relation                       | <b>bps</b> bits per second  |
| <b>ANRF</b> Automatic Neighbour Relation Function             | <b>BPSK</b> Binary Phase Shift Keying   |
| <b>AoA</b> Angle-of-Arrival                                   | <b>BSIC</b> Base Station Identification Code                                    |
| <b>AoD</b> Angle-of-Departure                                 | <b>BSR</b> Buffer Status Reports  |
| <b>APN</b> Access Point Name                                  | <b>CAZAC</b> Constant Amplitude Zero AutoCorrelation                            |
| <b>APP</b> A-Posteriori Probability                           | <b>CB</b> Circular Buffer   |
| <b>ARFCN</b> Absolute Radio Frequency Channel Number          | <b>CCCH</b> Common Control CHannel  |
| <b>ARIB</b> Association of Radio Industries and Businesses    | <b>CCE</b> Control Channel Element  |
| <b>ARP</b> Almost Regular Permutation*                        | <b>CCI</b> Co-Channel Interference  |
| <b>ARP</b> Allocation and Retention Priority*                 | <b>CCO</b> Cell Change Order  |
| <b>ARQ</b> Automatic Repeat reQuest                           | <b>CCSA</b> China Communications Standards Association                          |
| <b>AS</b> Access Stratum*                                     |   |

xxx

**CDD** Cyclic Delay Diversity  
**CDF** Cumulative Distribution Function  
**CDL** Clustered Delay Line  
**CDM** Code Division Multiplex(ed/ing)  
**CDMA** Code Division Multiple Access  
**C/I** Carrier-to-Interference ratio  
**CF** Contention-Free  
**CFI** Control Format Indicator  
**CFO** Carrier Frequency Offset  
**CINR** Carrier-to-Interference-and-Noise Ratio  
**CIR** Channel Impulse Response  
**CM** Cubic Metric  
**CMHH** Constant Modulus HouseHolder  
**CN** Core Network  
**CODIT** UMTS Code Division Testbed  
**COFDM** Coded OFDM  
**CP** Cyclic Prefix  
**CPICH** Common Pilot CHannel  
**CPR** Common Phase Rotation  
**CPT** Control PDU Type  
**CQI** Channel Quality Indicator  
**CRC** Cyclic Redundancy Check  
**C-RNTI** Cell Radio Network Temporary Identifier  
**CS** Circuit-Switched  
**CSG** Closed Subscriber Group  
**CSI** Channel State Information  
**CSIT** Channel State Information at the Transmitter  
**CTF** Channel Transfer Function  
**CVA** Circular Viterbi Algorithm  
**CVQ** Channel Vector Quantization  
**CW** Continuous-Wave  
**DAB** Digital Audio Broadcasting  
**DAC** Digital to Analogue Converter  
**dB** deci-Bel  
**d.c.** direct current  
**DCCH** Dedicated Control CHannel

## LIST OF ACRONYMS

**DCFB** Direct Channel FeedBack  
**DCI** Downlink Control Information  
**DFT** Discrete Fourier Transform  
**DFT-S-OFDM** DFT-Spread OFDM  
**Diffserv** Differentiated Services  
**DL** DownLink  
**DL-SCH** DownLink Shared CHannel  
**DMB** Digital Mobile Broadcasting  
**DMRS** DeModulation RS  
**DOA** Direction Of Arrival  
**DPC** Dirty-Paper Coding  
**DRB** Data Radio Bearer  
**DRX** Discontinuous Reception  
**DS-CDMA** Direct-Sequence Code Division Multiple Access  
**DSP** Digital Signal Processor  
**DTCH** Dedicated Traffic CHannel  
**DTX** Discontinuous Transmission  
**DVB-H** Digital Video Broadcasting – Handheld  
**DVB-T** Digital Video Broadcasting – Terrestrial  
**DwPTS** Downlink Pilot TimeSlot  
**ECM** EPS Connection Management  
**EDGE** Enhanced Data rates for GSM Evolution  
**EESM** Exponential Effective SINR Mapping  
**EMM** EPS Mobility Management  
**eNodeB** evolved NodeB  
**EPA** Extended Pedestrian A  
**EPC** Evolved Packet Core  
**EPS** Evolved Packet System  
**ESP** Encapsulating Security Payload  
**ETSI** European Telecommunications Standards Institute  
**ETU** Extended Typical Urban  
**E-UTRA** Evolved-UTRA  
**E-UTRAN** Evolved-UTRAN  
**EVA** Extended Vehicular A  
**EVM** Error Vector Magnitude  
**FACH** Forward Access CHannel  
**FB** Frequency Burst

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