List of Acronyms

2G 2nd Generation 3G 3rd Generation 4G 4th Generation

AMPS Advanced Mobile Phone System

BMA Bended Monopole Antenna

BSO-NM Bacterial Swarm Optimization And Nelder-Mead

CDMA Code Division Multiple Access

CST MWS Computer Simulation Technology Microwave Studio

CTIA Cellular Telecommunication Industry Association

DBS Direct Broadcast Satellite

DCS Digital Cellular Service

DCS Digital Communication System

DMB Digital Multimedia Broadcasting

EMC Electromagnetic Compatible

FCC Federal Communications Commission

FEM Finite Element Method

FIT Finite Integration Technique

F-PIFA Fractal Planar Inverted F Antenna

FS-PIFA Full Short Circuit Planar Inverted-F Antenna

GLONASS Global Navigation Satellite System

GPS Global Positioning System

GSM Global System For Mobile Communications

HAC Hearing-Aid Compatibility

HFSS High Frequency Structure Simulator

HWLLS Half-Wavelength Loaded Line Structure

IFA Inverted-F Antenna

IHA Internal Handset Antenna

IMT International Mobile Telecommunications

ISM Industrial, Scientific And Medical

LCD Liquid Crystal Display

LTCC Low Temperature Co-Fired Ceramic

LTE Long Term Evolution

MEMS Micro Electro Mechanical Systems

MSA Microstrip Antennas

MSS Mobile Satellite Service

PCB Printed Circuit Board

PCS Personal Communications Service

PDA Personal Digital Assistant

PEC Perfect Electric Conductor

PIFA Planer Inverted-F Antenna

PIL Planar Inverted-L

RCDLA Radiation-Coupled Dual-L Antenna

SAM Specific Anthropomorphic Mannequin

SAR Specific Absorption Rate

SC-MSA Short - Circuit Rectangular Microstrip Antennas

TRP Total Radiated Power

UMTS Universal Mobile Telecommunications Systems

USPCS US Personal Communications Service

UWB Ultra Wideband

VLP Very-Low-Profile

VNA Vector Network Analyser

VSWR Voltage Standing Wave Ratio

WCDMA Wideband Code Division Multiple Access

WiBro Wireless Broadband

Wi-Fi Wireless Fidelity

WiMAX Worldwide Interoperability For Microwave Access

WLAN Wireless Local Area Network