



**Circularly Polarized Dedicated Short Range
Communications Antenna for Vehicle-to-Everything
Applications**

by

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LIST OF ABBREVIATIONS

2D	Two Dimensional
3D	Three Dimensional
2G	Two Generation
3G	Third Generation
3GPP	Third Generation Partnership Program
ADAS	Advanced Driver Assistance Systems
AMC	Artificial Magnetic Conductor
AR	Axial Ratio
AP	Access Point
AUT	Antenna Under Test
BSM	Basic Safety Message
C-ITS	Cooperative Intelligent Transportation System
C-V2X	Cellular Vehicle-to-Everything
C2C-CC	Car-to-Car Communication Consortium
CAMP	Crash Avoidance Metric Partnership
CAV	Connected and Automated Vehicles
CP	Circularly Polarized
CPR	Circular Polarization Ratio
CST	Computer Simulation Technology
DAB	Digital Audio Broadcasting
dB	Decibels
DCF	Distributed Coordination Function
DOT	Department of Transportation
DSRC	Dedicated Short Range Communications

DVB	Digital Video Broadcasting
ECC	Electronic Communication Committee
ETC	Electronic Toll Collection
ETSI	European Telecommunications Standards Institute
FBR	Front to Back Ratio
FCC	Federal Communications Commission
FCW	Forward Collision Warning
FHWA	Federal Highway Administration
FMVSSs	Federal Motor Vehicle Safety Standards
FOT	Field Operational Test
GHz	Giga Hertz
GPS	Global Positioning System
GNSS	Global Navigation Satellite System
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
ISO	International Organization for Standardization
ITS	Intelligent Transportation System
ITU	International Telecommunication Union (ITU)
IoT	Internet of Things
JTC	Joint Technical Committee
KHz	Kilo Hertz
LCP	Liquid Crystal Polymer
LHCP	Left Hand Circular Polarization
LOS	Line of Sight

LTE	Long Term Evolution
MAC	Medium Access Control
MHz	Mega Hertz
mm	Millimeter
MPA	Microstrip Patch Antenna
MPs	Metallic Posts
NHTSA	National Highway Traffic Safety Administration
NLOS	Non Line of Sight
OBU	On Board Unit
OEM	Original Equipment Manufacturer
OFDM	Orthogonal Frequency Division Multiplex
PCB	Printed Circuit Board
PDMS	Polydimethylsiloxane
PET	Polyethylene Terephthalate
PHY	Physical
PI	Polyimide
PSDO	Partnership Standards Development Organization
QoS	Quality of Service
RF	Radio Frequency
RFID	Radio Frequency Identification
RHCP	Right Hand Circular Polarization
RPM	Relative Positioning Module
RSS	Radio Standards Specification
RSU	Road Side Unit
RTTT	Road Transport and Traffic Telematics

SAE	Society of Automotive Engineers
SAR	Specific Absorption Rate
SDARS	Satellite Digital Audio Radio Service
SDK	Software Development Kit
SLL	Side Lobe Level
SP	Sequential Phase
SR	Sequentially Rotated
TDMA	Time Division Multiple Accesses
TPMS	Tyre Pressure Monitoring System
TPU	Thermoplastic Polyurethane
U-NII	Unlicensed-National Information Infrastructure
USDOT	United States Department of Transportation
V2D	Vehicle-to-Device
V2I	Vehicle-to-Infrastructure
V2N	Vehicle-to-Network
V2P	Vehicle-to-Pedestrian
V2V	Vehicle-to-Vehicle
V2X	Vehicle-to-Everything
VANETS	Vehicular Ad-hoc Networks
VSWR	Voltage Standing Wave-Ratio
WAVE	Wireless Access for Vehicular Environments
Wi-Fi	Wireless Fidelity
WLAN	Wireless Local Area Network
WSMP	WAVE Short Message Protocol
XPD	Cross Polar Discrimination