

List of abbreviation

ADS	Agilent Design System
AM0	Air Mass 0
AR	Axial Ratio
BPF	Band Pass Filter
CMRC	Compact Microstrip Resonant Cell
CP	Circularly Polarized
DC	Direct Current
DCM	Discontinuous Current Mode
DOE	Department Of Energy
DSFR	Differential Source Fed Rectenna
GEO	Geosynchronous Equatorial Orbit
HF	High Frequency
ISM	Industrial Scientific And Medical
JAXA	Japan Aerospace Exploration Agency

LCOE	Levelized Cost Of Energy
LEO	Low Earth Orbit
LNG	Liquefied Natural Gas
LP	Linearly Polarized
MBK	Multiple Beam Klystron
MPPT	Maximum Power Point Tracking
MTBF	Mean Time Between Failures
NASA	National Aeronautics And Space Administration
RF	Radio Frequency
RFID	Radio Frequency Identification
SSFR	Single Source Fed Rectenna
SSPA	Solid-State Power Amplifier
SSPS	Satellite Solar Power Station
TWT	Traveling Wave Tube
USEF	Unmanned Space Experiment Free Flyer
WPT	Wireless Power Transfer

List of symbols

$\$$	United States dollar
η_{sm}	Photovoltaic conversion efficiency
A_r	Rectenna area
A_t	Transmission antenna area
P_r	Power received on rectenna
P_t	Transmitted power
a_r	Cost of ground rectenna per unit area
a_t	Cost of transmission antenna per unit area
m_r	Cost of ground equipment to convert received power per kW
m_s	Cost of Photovoltaic power per kW
m_t	Cost of equipment to convert microwave power per kW
n_{beam}	Beam efficiency
A_r	Receiving antenna area

A_t	Transmitting antenna area
D	The distance between
E_r	Electric field at receiving station
E_t	Electric field at transmitting station
G_r	Receiving antenna gain
G_t	Transmitting antenna gain
P_d	Average power density
P_r	Power at receiving station
P_t	Power at transmitting station
$R(z)$	Radius of curvature at z
T_{HF}	High-frequency period
T_{LF}	Low-frequency period
V_1	Fundamental rectifier output voltage
V_{HH}	Harmonic rectifier output voltage

z	Distance of transmission
Z_0	Rayleigh length
ϵr	Dielectric constant
λ	The operating wavelength
λ_g	Guided wavelength
τ^2	Power transmission efficiency
$\omega(z)$	Beam waist changes with z
ω_0	Beam waist at the transmission level
C	Initial cost
Q	Quality Factor
$\mathcal{R}\{x\}$	Real part of x