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Low-Power Millimeter Wave Transmitters for High Data Rate Applications

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Abbreviations

AM	Amplitude modulation
BB	Baseband
BBBW	Baseband bandwidth
BW	Bandwidth
DAC	Digital-to-analog converter
DCO	Digitally controlled oscillator
DE	Drain efficiency
ENOB	Effective number of bits
EVM	Error vector magnitude
FR	Full rate
FSPL	Free space path loss
LNA	Low-noise amplifier
LO	Local oscillator
LSB	Least significant bit
NF	Noise figure
OFDM	Orthogonal frequency division multiplexing
OSF	Oversampling factor
P1dB	Output-referred 1 dB compression point
PA	Power amplifier
PAE	Power-added efficiency
PAPR	Peak-to-average power ratio
PD	Predistortion
PM	Phase modulation
RFBW	Radio frequency bandwidth
RX	Receiver
SC	Single carrier
SNR	Signal-to-noise ratio
SNRq	Signal-to-quantization-noise ratio
SPI	Serial peripheral interface

TL	Transmission line
TX	Transmitter
VCO	Voltage-controlled oscillator
VGA	Variable-gain amplifier
ZOH	Zero-order hold

Nomenclature

θ	Angle
λ	Wavelength
ϕ	Phase
φ	Phase
π	3.14
η_d	Drain efficiency
f	Frequency
t	Time
d	Distance
I	In-phase signal
Q	Quality factor or quadrature signal
k	Coupling factor or Boltzmann constant
T	Temperature in kelvin
B	Bandwidth in hertz
A	Amplitude
N	Number of bits
N_A	Number of bits in the amplitude path
N_{Ph}	Number of bits in the phase path
g_m	Transconductance
A_v	Voltage gain
G_p	Power gain
G_{max}	Maximum available gain
G_{msg}	Maximum stable gain
C_{neut}	Neutralization capacitor
K_f	Stability factor
f_T	Transit frequency
P_{sat}	Saturation power
K_{vco}	Voltage-controlled oscillator gain

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