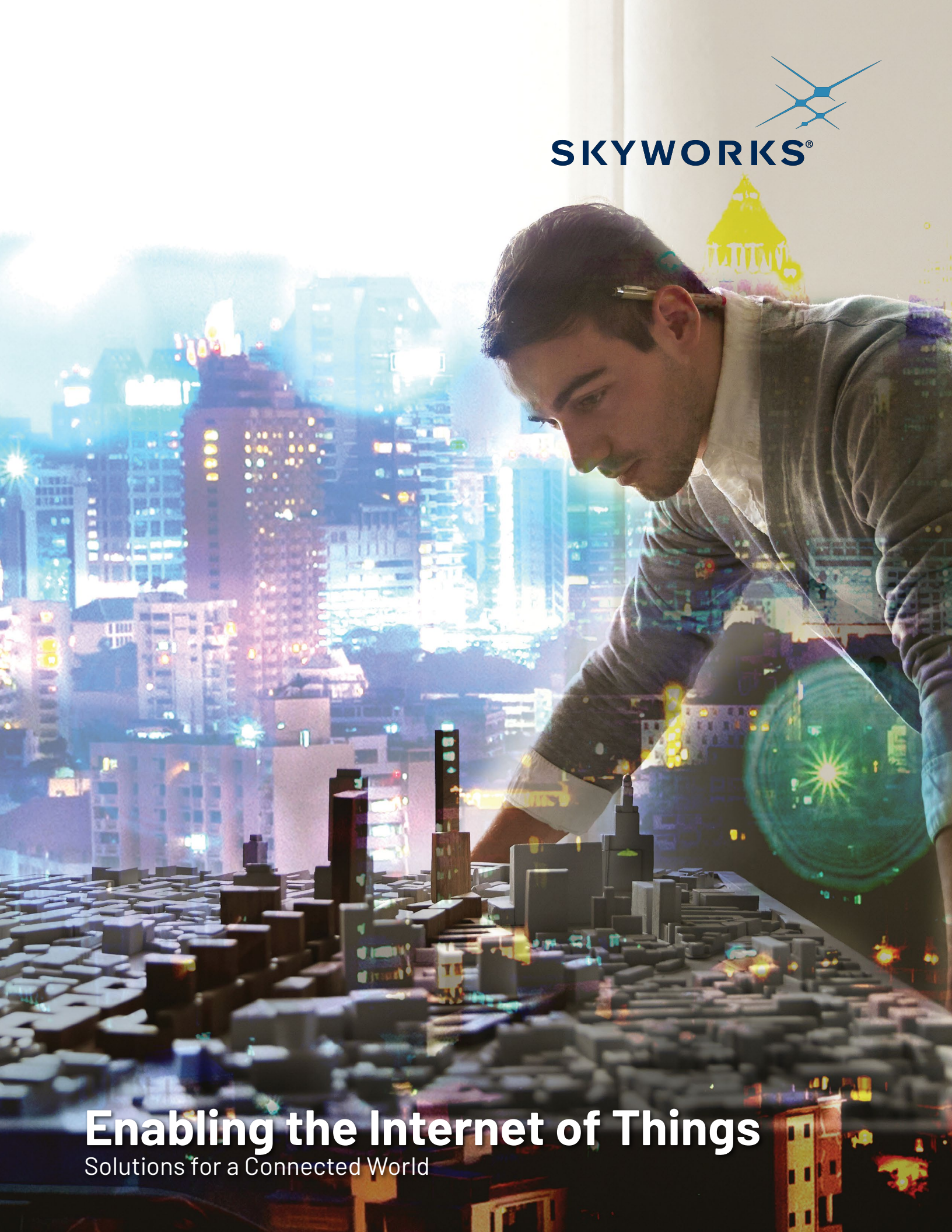


SKYWORKS®



Enabling the Internet of Things
Solutions for a Connected World

Leveraging Wireless Technology

Skyworks' broad portfolio offers many choices for engineers and developers working on products and systems for the Internet of Things (IoT). Our solutions leverage multiple wireless technologies making them suitable for a wide range of applications requiring different frequency ranges, data rates and battery life.



Featured Markets

The Journey to Smarter, Faster, Seamless Connectivity Starts Here!

Connectivity has expanded far beyond smartphones and person-to-person communications to now encompass device-to-device networks in smart homes, industrial IoT, autonomous transport and other diverse applications. Our market-leading solutions are providing the foundation for this vibrant ecosystem, resolving the daunting analog and RF complexities that challenge the capabilities of existing hardware and networks.



Automotive

Our innovative portfolio takes seamless connectivity in today's cars to the next level – making the driving experience increasingly smarter and safer. By leveraging our leadership and expertise in wireless to deliver cutting edge communication technologies such as 5G NR for cellular, vehicle-to-vehicle (V2V) communication and 802.11ax Wi-Fi to new vehicles, we can help you elevate the driver experience.



Connected Home

Our products allow homeowners greater control over their environment with a host of connected devices including thermostats, security systems, touch pads, security sensors, light switches, smoke and CO alarms, major appliances, and door locks. Our wireless solutions, from Wi-Fi (802.11) to Zigbee®, Thread and Bluetooth® (including low energy), deliver advanced short and long range connectivity—making the connected home that much smarter.



Industrial

With global market demand for industrial semiconductors accelerating, Skyworks is well positioned to deliver viable options that leverage LoRa® and SigFox wireless standards as well as meet a wide-range of frequency, data rate and battery performance requirements. Our products support smart cities, factory automation, building controls, asset tracking, smart metering, LED lighting, security cameras and smart agriculture functions.



Machine-to-Machine (M2M)

Innovations from Skyworks have the power to transform the way organizations do business. From manufacturing automation to telemetry, remote control devices and asset management, Skyworks offers a diverse portfolio of cellular, short-range, and global positioning solutions.



Medical

At Skyworks, we are advancing medical devices and the sharing of information that is improving the care of millions of people worldwide. Skyworks integrates cutting-edge technologies into product designs that facilitate the miniaturization of medical instruments and enhance data transmission. Further, many of our amplifiers, diodes, optoelectronic solutions and dielectric materials serve as key components in the healthcare industry.



Mobile Devices

Consumers want fast, seamless mobile connectivity – anywhere, anytime. Our 5G leadership, technology expertise, global scale and quality allow us to create highly-integrated, cost-efficient solutions that meet the size, energy and performance constraints of smartphones, tablets, WLANs and other emerging applications.



Smart Energy

Utility company initiatives to modernize their infrastructure with remote control and automation is made possible by two-way communication enabled in part by Skyworks. Our devices support smart meters, smart thermostats, in-home displays, Zigbee® / 802.15.4, Bluetooth® and Bluetooth® low energy applications that help optimize energy efficiency.



Wearables

When it comes to today's sleek wearables – from smartwatches to smart eyewear, fitness trackers and health monitors – Skyworks offers superior, small form factor solutions that consume minimal power and enable always on connectivity, allowing applications to run in the background for lengthy periods of time without a battery recharge.

Enabling the Internet of Things (IoT)

Wearables

- Fitness Trackers
- Health Monitors
- Smart Watches
- Smart Scales

Mobile Devices

- Smartphones
- Tablets
- Notebooks
- Data Cards
- Wi-Fi Systems



Media

- Ultra HDTV
- Set-top Boxes
- Wireless Audio
- Streaming Platforms

Consumer Electronics

- Handheld Gaming
- Personal Navigation

Automotive

- Infotainment
- Telematics

Computing

- Desktops
- Servers

Smart Utilities

- Gas
- Water
- Electric

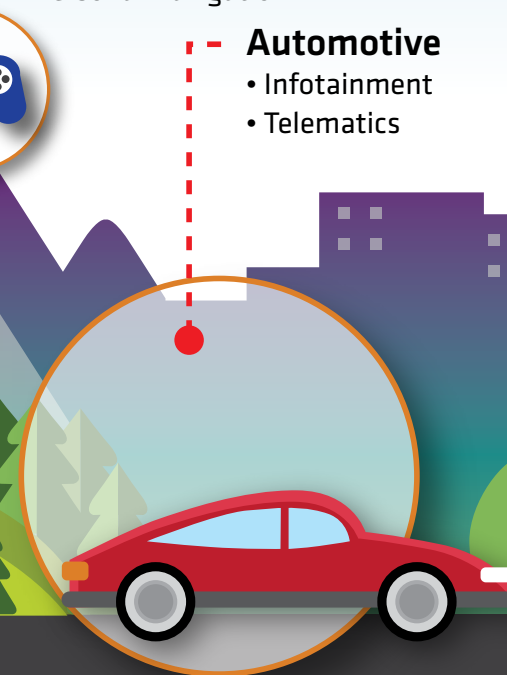
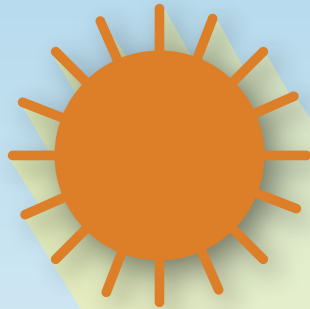
Automation

- Smart Thermostats
- In-Home Displays
- Fire / CO Detectors
- Security Systems

Networking

- Routers
- Gateways
- Modems

Connected Home





Wireless Infrastructure

- Macro Cell:
 - FDD/TDD Remote Radio Head
 - FDD/TDD Tower Mount Amplifier (RX)
 - Repeaters
- Small Cells

Medical

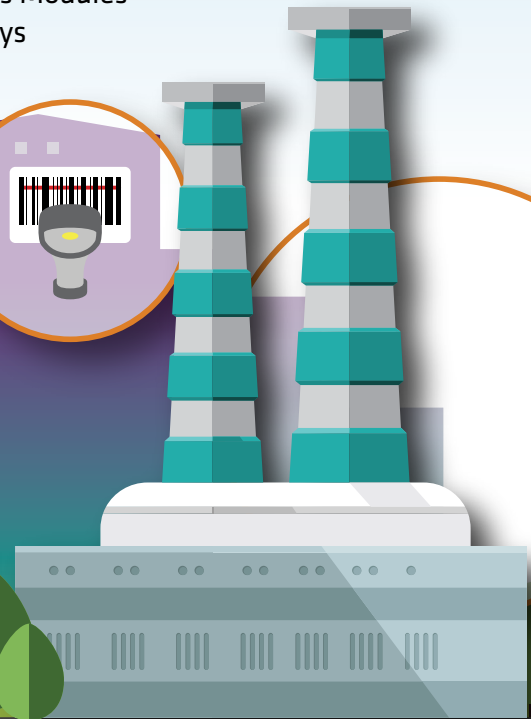
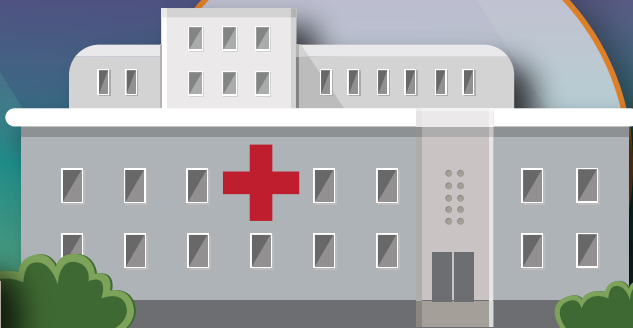
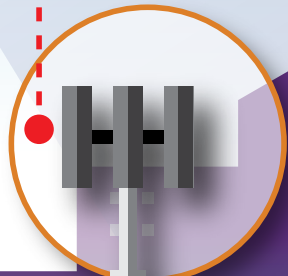
- Heart Monitors
- Patient Telemetry
- Defibrillators

Machine-to-Machine

- Asset Management
- Wireless Modules
- Gateways

Industrial

- Smart City
- GPS Tracking
- Building Controls
- Smart Agriculture
- Intelligent/Connected Lighting











New and Featured IoT Products by Market

The Right Design Choice Starts Here

Specification tables for products in this brochure are provided on the following pages.

New products (purple, bold) are continually being introduced at Skyworks. For up-to-date information on products in development, please contact your local Skyworks sales representative.

Coming Soon products (blue, bold) indicate devices that will be available soon for purchase.

									
Description		Automotive	Connected Home	Industrial	Machine-to-Machine	Medical	Mobile Devices	Smart Energy	Wearables
Amplifiers									
SKY77368-11	Power Amplifier Module for Quad-band GSM / GPRS / EDGE / TD-SCDMA / TDD LTE / HD-FDD LTE				Machine-to-Machine		Mobile Devices		
SKY77733-11	SkyHi™ Power Amplifier Module for LTE				Machine-to-Machine		Mobile Devices		
SKY77762-81	PAM for CDMA / WCDMA / HSDPA/ HSUPA / HSPA+ / LTE – Band 2		Connected Home	Industrial					Wearables
SKY77638-11	SkyLiTE™ Multimode Multiband Power Amplifier Module				Machine-to-Machine		Mobile Devices		
SKY77680-11	Multimode Multiband Power Amplifier Module for Dual Mode / Quad-band GSM/ EDGE and WCDMA / HSDPA / HSUPA / HSPA+ / LTE Band 40/41 HPUE				Machine-to-Machine		Mobile Devices		
SKY77661-11	MMMB PAM for for Dual Mode Quad-band GSM / EDGE – WCDMA / HSDPA / HSUPA / HSPA+ / LTE				Machine-to-Machine		Mobile Devices		
SKY77757-11	SkyLiTE™ Multimode Multiband Power Amplifier Module				Machine-to-Machine		Mobile Devices		
SKY77769-11	Multimode Multiband Power Amplifier Module for Penta-band WCDMA / HSDPA / HSUPA / HSPA+ / LTE				Machine-to-Machine		Mobile Devices		
SKY85204-11	2.4 GHz, 802.11ac Switch / LNA Front End		Connected Home	Industrial				Smart Energy	Wearables
SE2433T	2.4 GHz Zigbee® / 802.15.4 Power Amplifier		Connected Home	Industrial		Medical		Smart Energy	Wearables
SKY65623-682LF	GPS / GLONASS / Galileo / Compass LNA			Industrial	Machine-to-Machine	Medical	Mobile Devices		Wearables
Front-end Modules									
SKY68000-31	LTE Dual-band FEM			Industrial	Machine-to-Machine			Smart Energy	Wearables
SKY68001-31	LTE Universal Multiband FEM			Industrial	Machine-to-Machine			Smart Energy	Wearables
SKY68020-11	LTE Universal Multiband FEM			Industrial	Machine-to-Machine			Smart Energy	Wearables
SKY66430-11	5G Massive IoT System-in-Package			Industrial	Machine-to-Machine	Medical		Smart Energy	Wearables
SE2435L	860 to 930 MHz High Power RF FEM			Industrial		Medical		Smart Energy	Wearables
SKY65364-21	900 MHz Transmit / Receive High Power FEM			Industrial		Medical		Smart Energy	Wearables
SKY65366-21	400 MHz Transmit / Receive FEM			Industrial				Smart Energy	Wearables
SKY65367-11	169 to 170 MHz Transmit / Receive FEM			Industrial				Smart Energy	Wearables
SKY65378-11	860 to 930 MHz RF FEM			Industrial		Medical		Smart Energy	Wearables



Automotive

Connected Home

Industrial

Machine-to-Machine

Medical

Mobile Devices

Smart Energy

Wearables

Description

Front-end Modules

SKY66100-11	Low Power 169 to 170 MHz Transmit / Receive FEM									
SKY66101-11	902 to 928 MHz High Power RF FEM									
SKY66105-11	902 to 931 MHz High Power RF FEM									
SKY66109-11	2.4 GHz Zigbee® / Smart Energy FEM									
SKY66111 / 112	Low-Power Bluetooth® Low Energy / FEM									
SKY66113 / 114	2.4 GHz Bluetooth® Low Energy / 802.15.4 / Thread / Zigbee® FEM									
SKY66118-11	2.4 GHz Bluetooth® Low Energy FEM									
SKY66119-11	460 MHz Transmit / Receive FEM									
SKY66121-11	169 to 170 MHz Transmit / Receive FEM									
SKY66403 / 404 / 405	2.4 GHz Front-end Module for Zigbee® / Thread / Bluetooth® Applications									
SKY66407-11	2.4 GHz Low Power, Low Profile FEM for Bluetooth® IoT Applications									
SKY66420 / 421 / 422 / 423	860 to 930 MHz RF FEMs									
SKY65383-11	2400 to 2483 MHz Transmit / Receive FEM									
SKY65724-11	Low Noise Amplifier Front-end Module with BDS / GPS / GNSS Pre-filter									
SKY65933 / 943	GNSS LNA FEM with Integrated Pre- and Post-filter									

Switches

SKYA21003	AEC-Q100 Qualified 20 MHz to 3.0 GHz SPDT Switch									
SKY13374-397LF	Wi-Fi 802.11a/b/g/n 300 kHz to 6.0 GHz SPDT Switch									
SKY13453-385LF	0.01 to 6.0 GHz Single Control SP2T (SPDT) Switch									
SKY13489-001	0.7 to 2.7 GHz SPDT High Power Switch (Single Bit Control)									
SKY13522-644LF	0.7 to 3.0 GHz High Isolation (Single Bit Control) SPDT Switch									
SKY13587-378LF	20 MHz to 6 GHz GaAs SPDT Switch									
SKY13582-676LF	0.4 to 3.8 GHz SP3T Switch									
SKY13586-678LF	2.4 to 2.5 GHz SP3T Switch									
SKY13560-485LF	0.4 to 2.7 GHz SP4T LTE Transmit / Receive Switch									
SKY13626-685LF	0.4 to 3.8 GHz SP4T Switch									
SKY13567-666LF	0.7 to 2.7 GHz SP5T Switch									
SKY13636-695LF	0.7 to 3.8 GHz SP6T LTE Transmit / Receive Switch with MIPI®									
SKY13637-695LF	0.7 to 3.8 GHz SP8T LTE Transmit / Receive Switch with MIPI®									
SKY13638-700LF	0.4 to 3.8 GHz SP10T LTE Transmit / Receive Switch with MIPI®									

Product Specifications

Specification tables for products in this brochure are provided on the following pages. For the latest information, please visit the New Products section of our website at www.skyworksinc.com.

Amplifiers

Cellular

LTE PAs

Part Number	Frequency (MHz)	Description	Typical PAE (%)	Typical Gain (dB)	Typical Linear LTE Power (dBm)	Supply Voltage (V)	Package (mm)
SKY77368-11	663-915 1710-1920 2010-2025	Power Amplifier Module for Quad-band GSM / GPRS / EDGE / TD-SCDMA / TDD LTE / HD-FDD LTE	–	–	–	–	12-pad MCM 3 x 3 x 0.67
SKY77733-11	777–798	SkyHi™ Power Amplifier Module for LTE	43	32	–	3.0–4.5	10-pad MCM 3 x 3 x 0.9
SKY77762-81	1850–1910	PAM for CDMA / WCDMA / HSDPA / HSUPA / HSPA+ / LTE – Band 2	46	28	–	3.4–4.5	10-pad MCM 3 x 3 x 0.9

Multimode Multiband (MMMB) PAs

Part Number	Frequency (MHz)	Description	Typical PAE LTE (%)	Typical I _{MAX} (mA)	Typical Gain (dB)	Supply Voltage (V)	Package (mm)
SKY77638-11	Low, Mid and High Bands	SkyLiTE™ Multimode Multiband Power Amplifier Module	–	–	–	–	42-pad MCM 4 x 6.8 x 0.71
SKY77680-11	Low, Mid, High and 2G Bands	Multimode Multiband Power Amplifier Module for Dual Mode / Quad-band GSM / EDGE and WCDMA / HSDPA / HSUPA / HSPA+ / LTE Band 40/41 HPUE	–	–	–	–	48-pad MCM 7.4 x 4.4 x 0.75
SKY77661-11	Low, Mid, and High Bands	MMMB PAM for for Dual Mode Quad-band GSM / EDGE – WCDMA / HSDPA / HSUPA / HSPA+ / LTE (Bands 1, 3, 4, 7, 8, 12, 13, 20, 25, 26, 28, 30, 38, 34/39, 40, 41)	–	–	–	–	44-pad MCM 7 x 4 x 0.8
SKY77757-11	Low and Mid Bands	SkyLiTE™ Multimode Multiband Power Amplifier Module	–	–	–	–	42-pad MCM 4 x 6.8 x 0.71
SKY77769-11	699–915 1710–1910	Multimode Multiband PAM for Penta-Band (1, 2, 4, 5, 8) WCDMA / HSDPA / HSUPA / HSPA+ / LTE Bands 1, 2, 4, 5, 8, 26, 27, 34, 39	–	–	–	–	14-pad MCM 3 x 4.2 x 0.9

Wi-Fi Connectivity

2.5 GHz Low Noise Amplifiers

Part Number	Frequency Range (GHz)	Typ. Gain (dB)	V _{DD} (V)	Typ. Noise Figure (dB)	Package (mm)
SKY85204-11	2.4–2.5	13	3.3	2	11-bump Flip Chip Die 0.76 x 0.97

Smart Energy, Connected Home and Automation 802.15.4, ISM, Thread and Zigbee®

Part Number	Frequency Range (GHz)	Test Frequency (GHz)	Typ. Gain (dB)	OIP3 (dBm)	IP _{1dB} (dBm)	PAE (%)	V _{CC} (V)	Typ. Quiescent Current (mA)	Typ. Noise Figure (dB)	Package (mm)
SE2433T	2.4–2.5	2.45	22	–	24	31	2.0–3.6	30	–	12-pin QFN 2 x 2.5 x 0.55

Product Specifications

Amplifiers

BDS / GPS / GNSS Low Noise Amplifiers

Part Number	Frequency Range (MHz)	Test Frequency (MHz)	Description	Gain (dB)	V _{DD} (V)	IP _{1dB} (dBm)	Noise Figure (dB)	Package (mm)
SKY65605-21	1559–1606	–	BDS / GPS / GNSS Low Noise Amplifier	19	1.5–2.85	14.5	0.6	6-pin QFN 0.7 x 1.1 x 0.55
SKY65623-682LF	1559–1660	–	GPS / GLONASS / Galileo / Compass Low Noise Amplifier	16.5	1.5–3.6	-30	0.85	5-pin QFN 0.8 x 0.8 x 0.32

Front-end Solutions

Cellular

LTE Front-end Modules

Part Number	Frequency (MHz)	Description	Typical Linear LTE Power (dBm)	Supply Voltage (V)	Package (mm)
SKY68000-31	777–787 1710–1755	LTE Dual-band Front-end Module for IoT	23.5	2.85–4.5	24-pad MCM 4 x 5 x 0.9
SKY68001-31	699–915 1710–1910	LTE Universal Multiband Front-end Module for IoT	23.5	2.85–4.5	24-pad MCM 4 x 5 x 0.9
SKY68020-11	663–915 1695–1980	LTE Universal Multiband Front-end Module for IoT	23.5	2.85–4.5	24-pad MCM 4 x 5 x 0.9

System-in-Package

Part Number	Frequency (MHz)	Description	Typical Linear LTE Power (dBm)	Supply Voltage (V)	Package (mm)
SKY66430-11	700–2200	5G Massive IoT System-in-Package	23	3.1–5.5	320-pin BGA 8.8 x 10.8 x 0.95

Smart Energy, Connected Home and Automation 802.15.4, ISM, Thread and Zigbee®

Part Number	RF Frequency (MHz)	Typ. Rx Insertion Loss (dB)	Typ. Rx Gain (dB)	Tx I _{CC} (mA)	Tx Gain (dB)	Typ. Saturated Output Power (dBm)	Supply Voltage (V)	Package (mm)
SE2435L	860–930	2	16	–	28	28	2.0–4.5	24-pin QFN 4 x 4 x 0.9
SKY65364-21	890–960	0.5	15	–	22	30	3.0–3.8	28-pin MCM 6 x 6 x 0.9
SKY65366-21	400–500	0.4	21	–	22	30.2	3.0–4.0	28-pin MCM 6 x 6 x 0.9
SKY65367-11	169–170	0.7	-0.7	–	35	30	3.3	16-pin MCM 4 x 4 x 0.9
SKY65378-11	860–930	-1.5	17	–	-1.5	N/A	2.0–4.8	24-pin QFN 4 x 4 x 0.9
SKY66100-11	169–170	0.4	-0.5	–	30	24	2.0–3.6	16-pin MCM 4 x 4 x 0.9
SKY66101-11	902–928	–	16	–	33	30	2.0–4.8	36-pin MCM 6 x 6 x 0.9
SKY66105-11	900–930	0.7	–	–	29	29.5	2.0–4.8	12-pin MCM 6 x 8 x 1.05

Product Specifications

Front-end Solutions

Smart Energy, Connected Home and Automation 802.15.4, ISM, Thread and Zigbee®

Part Number	RF Frequency (MHz)	Typ. Rx Insertion Loss (dB)	Typ. Rx Gain (dB)	Tx I _{cc} (mA)	Tx Gain (dB)	Typ. Saturated Output Power (dBm)	Supply Voltage (V)	Package (mm)
SKY66109-11	2400–2483	–	11.5	–	22	21	2.0–3.6	20-pin MCM 3 x 4 x 0.9
SKY66111-11	2400–2485	0.5	-0.5	–	10	10	3	20-pin MCM 3.3 x 3.0 x 0.8
SKY66112-11	2400–2500	2	11	–	22	–	1.2–3.6	22-pin MCM 3.5 x 3.0 x 0.9
SKY66113-11	2400–2500	2	12	–	22	22	1.2–3.6	16-pin MCM 2.4 x 2.4 x 0.7
SKY66114-11	2400–2483	2	12	–	24	22	1.8–3.6	16-pin MCM 2.4 x 2.4 x 0.8
SKY66118-11	2400–2500	1.3	-1.3	–	20	20	1.7–3.3	18-pin MCM 2.6 x 2.4 x 0.75
SKY66119-11	450–470	–	15.5	–	25	30.5	3.6	28-pin MCM 6 x 6 x 1.05
SKY66121-11	169–170	0.9	–	–	–	31	2.0–4.0	16-pin MCM 4 x 4 x 0.76
SKY66403-11	2400–2500	2	11	–	22	22	1.7–3.6	22-pin MCM 3.3 x 3.0 x 1.0
SKY66404-11	2400–2500	–	–	–	–	–	1.7–3.6	22-pin MCM 3.5 x 3.0 x 0.82
SKY66405-11	2400–2500	2	12	–	10	10	1.8–3.6	22-pin MCM 1.9 x 1.9 x 0.48
SKY66407-11	2400–2500	1.1	-1.1	–	10	10	1.7–3.6	9-pin CSP 1.2 x 1.2 x 0.35
SKY66420-11	860–930	1.5	18	–	16	27	2.0–4.8	16-pin MCM 3 x 3 x 0.75
SKY66421-11	860–930	0.6	-0.6	–	16	27	2.0–4.8	16-pin MCM 3 x 3 x 0.75
SKY66422-11	860–930	–	–	–	–	–	2.5–3.6	16-pin MCM 3 x 3 x 0.75
SKY66423-11	860–930	1.5	18	–	29	27	2.0–4.8	16-pin MCM 3 x 3 x 0.75
SKY65383-11	2400–2483	–	12	–	34	30	3.0–4.0	28-pin MCM 6 x 6 x 0.85

BDS / GPS / GNSS Front-end Modules

Part Number	Frequency Range (MHz)	Test Frequency (MHz)	Description	Gain (dB)	V _{DD} (V)	IP _{1dB} (dBm)	NF (dB)	Package (mm)
SKY65724-11	1559–1606	1575	Low Noise Amplifier Front-end Module with BDS / GPS / GNSS Pre-filter	16	–	–	1.8	8-pin MCM 1.1 x 1.5
SKY65933-11	1559–1606	1575	GNSS LNA Front-end Module with Integrated Pre- and Post-filters	14.5	1.50–2.85	-13	1.9	16-pin MCM 2.5 x 2.5 x 0.7
SKY65943-11	1559–1606	1575	GNSS Low Noise Amplifier Front-end Module with Integrated Pre- and Post-filter, External Input Match	15	1.62–3.3	-9	2.0	10-pin MCM 2.5 x 2.5 x 0.65

Product Specifications

Switches

SPDT (SP2T) RF Switches

Part Number	Description (Absorptive/ Reflective)	Frequency (GHz)	Typ. IL (dB)	Typ. Isol. (dB)	Typ. IIP3 (dBm)	Typ. IP _{1dB} (dBm)	Package (mm)
SKYA21003*	SPDT (R)	0.1–6.0	0.3–0.35	40–42	70	38.5	12-pin QFN 2 x 2 x 0.55
SKY13374-397LF	SPDT (R)	0.03–6.0	0.35–0.8	22–34	68	39	12-pin QFN 2 x 2 x 0.55
SKY13453-385LF	SPDT (R)	0.01–6.0	0.4–0.7	27–15	57	33	6-pin QFN 1 x 1 x 0.45
SKY13489-001	SPDT (R)	0.7–2.7	0.25	32	IMD3, -120	39	6-bump WLCSP 0.7 x 1.1 x 0.41
SKY13522-644LF	SPDT (R)	0.7–3.0	0.6	53	57	32	8-pin QFN 1.1 x 1.1 x 0.45
SKY13587-378LF	SPDT (R)	0.02–6.0	–	–	–	–	6-pin MLPD 1 x 1 x 0.5

*This product is AEC-Q100 qualified.

SP3T RF Switches

Part Number	Description (Absorptive/ Reflective)	Frequency (GHz)	Typ. IL (dB)	Typ. Isol. (dB)	Typ. IIP3 (dBm)	Typ. IP _{1dB} (dBm)	Package (mm)
SKY13852-676LF	SP3T (R)	0.4–3.8	–	–	–	–	9-pin QFN 1.1 x 1.1 x 0.5
SKY13582-676LF	SP3T (R)	0.4–3.8	–	25 @ 2.7 GHz	–	–	9-pin QFN 1.1 x 1.1 x 0.5
SKY13586-678LF	SP3T (R)	2.4–2.5	0.75	35	46	29	8-pin MLPD 1.1 x 1.1 x 0.33

SP4T RF Switches

Part Number	Description (Absorptive/ Reflective)	Frequency (GHz)	Typ. IL (dB)	Typ. Isol. (dB)	Typ. IIP3 (dBm)	Typ. IP _{1dB} (dBm)	Package (mm)
SKY13560-485LF	SP4T (R)	0.4–2.7	0.4–0.7	23–34	–	–	14-pin QFN 2 x 2 x 0.55
SKY13626-685LF	SP4T	0.7–3.8	–	–	–	–	12-pin QFN 1.1 x 1.1 x 0.5

High Throw Count (>4T) Switches / Antenna Switch Modules (ASMs) (GPIO and MIPI® RFFE)

High Throw Count Switches

(Band Distribution, Linear Tx / Rx, Rx Diversity, General Purpose Signal Routing)

Part Number	Description (Absorptive/ Reflective)	Frequency (GHz)	Typ. IL (dB)	Typ. Isol. (dB)	Typ. IIP3 (dBm)	Typ. IP _{1dB} (dBm)	Package (mm)
SKY13567-666LF	SP5T (R)	0.7–2.7	0.3–0.6	30–38	61	–	12-pin QFN 1.9 x 1.1 x 0.55
SKY13636-695LF	SP6T (R)	0.7–3.8	0.55 @ 2.7 GHz	24 @ 2.7 GHz	68	37	14-pin QFN 2 x 2 x 0.55
SKY13637-695LF	SP8T (R)	0.7–3.8	25 @ 2.7 GHz	0.59 @ 2.7 GHz	68	38	14-pin QFN 2 x 2 x 0.55
SKY13638-700LF	SP10T (R)	0.7–3.8	0.75 @ 2.7 GHz	30 @ 2.7 GHz	69	38	20-pin QFN 2.4 x 2.4 x 0.5



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Skyworks Solutions, Inc. | Nasdaq: SWKS | sales@skyworksinc.com

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