

Reverse Costing® CATALOGUE

LED

IC

MEMS

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SYSTEM

POWER

REVERSE COSTING®

A complete set of information to understand the technology and cost of the electronic devices on the market. System Plus Consulting Reverse Costing® reports are based on in-house developed methodology and costing tools which ensure their single format. The full collection is regularly updated on our website. These reports can be ordered individually or under our Annual Subscription.

IC & RF

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
RF IC				
SP17316	2017/3 295		RF Front-End Modules	Review of RF Front-End modules & components found in flagships smartphones: Apple iPhone 7 Plus, Samsung Galaxy S7, Huawei P9, LG G5, Xiaomi Mi5
SP16283	2016/8 93	Murata FAJ15	SAW filter	The Samsung Galaxy S7 smartphone is the latest one to integrate Murata's front-end module with the FAJ15, featuring Murata's thermo-compensated technology
SP16274	2016/6 112	Avago AFEM9040	FBAR-BAW	Avago has introduced a new generation of film bulk acoustic resonator (FBAR-BAW) technology in the Samsung Galaxy S7
SP16263	2016/3 126	Freescale NXP MR2001	Radar Rx/Tx/VCO Fan-Out RCP Chipset	The new 77 GHz Radar Chipset for ADAS from NXP/Freescale. SiGe:C xHBT technology & Fan-Out RCP Wafer-Level Packaging.
SP16254	2016/3 86	Qorvo TQF6405	SMR BAW High Band Filter	Apple integrates in its smartphone the innovative solid mounted resonators developed by Qorvo
SP16254	2016/3 90	Avago AFEM8030	FBAR BAW Mid B and Filter	Apple integrates in its smartphone the innovative Film Bulk Acoustic Resonators developed by Avago.
SP15235	2015/10 104	Infineon RRN7745P-RTN7735P	Radar Receiver & Transmitter	New 77GHz Receiver & Transmitter components with a SiGe: CHBT technology from Infineon and eWLB Fan Out Package.
SP15220	2015/6 106	Cavendish Kinetics 32CK417R	MEMS Antenna Tuner	Cavendish Kinetics's extra small (only 2mm2) and very low insertion loss Antenna tuner using MEMS technology.
SP14172	2014/7 85	Paratek TCP-3027	Tunable Capacitor	The first Tunable Capacitor using Paratek technology in WLSCP.

INTEGRATED CIRCUIT

SP16285	2016/10 60	Texas Instruments Jacinto DRA726	Infotainment IC	Cost-optimized in-vehicle infotainment for entry- to mid-level automobile segments.
SP16270	2016/5 60	Broadcom BCM89501	Ethernet Switch	The BCM89501 uses Broadcom's high-performance BroadR-Reach Ethernet technology to deliver 100Mbps over unshielded single-twisted pair cable.
SP15217	2015/4 53	Mobileye eyeQ3	Mobileye eyeQ3	Automotive Vision-Based SoC.

IMAGING

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
VISIBLE				
SP17304	2017/3 165	Consumer Physics Scio	Spectrometer	World's first pocket size Molecular sensor that can be integrated into consumer smartphones

IMAGING

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP16293	2016/11 145	Apple iPhone 7 Plus	MEMS Microphone iPhone 7	In the iPhone 7 Plus, Apple introduced a new rear camera module : a dual camera. The module features two sensors, one closed to the sensor in the previous flagship, another with a totally new structure.
SP16278	2016/7 145	Huawei p9	Camera Module	The P9 camera module is equipped with two sub-modules each including a Sony CIS, a closed loop voice coil motor (VCM) and a 6-element lens.
SP16266	2016/5 130	Samsung Galaxy S7 Edge	Rear Camera	The Samsung Galaxy S7 camera module integrates a 12Mpixel resolution CMOS image sensor with a pixel size of 1.4µm and an aperture of f/1.7.
SP15242	2015/12 118	Apple iPhone 6s Plus	Rear Camera Module	For the iPhone 6s Plus Apple uses a new camera module: it has changed the supply chain, integrating some design changes.
SP15239	2015/12 209	Camera Module Industry 2015	Camera Module Review	19 Camera Modules from the main OEM analyzed and compared !
SP14192	2014/11 101	Apple iPhone 6	iPhone 6 front camera module	Very Innovative CMOS Image Sensor: new pixel array structure / Stacked ISP circuit based on Sony Exmor-RS process/ manufacturing cost adapted to camera performances.
INFRARED				
SP17305	2017/1 170	Lenovo	3D Time of Flight (ToF) Camera	World's first 3D tri-camera bundle including Infineon/pmd REAL3TM ToF image sensor integrated into a consumer smartphone
SP16264	2016/8 170	i3system Thermal Expert	IR camera and microbolometer	Based on a high definition microbolometer from I3system (I3BOL384_17A), the Thermal Expert infrared camera is a high-end product for smartphones.
SP16244	2016/2 260	FLiR One 2G & Lepton 3	Infrared Camera & IR sensor	Second Generation FLIR ONE for Android and iOS Platforms Featuring a Completely New LEPTON Core with 160x120 Pixels Resolution and 12µm Pixel Size
SP15246	2015/12 137	Fujitsu Arrows NX F-04G	IR Camera Module & IR LED	World's first iris recognition module for smartphones!
SP15221	2015/7 166	Opgal Therm-App	Infrared Camera	The highest resolution thermal camera for smartphone, 384x 288 pixels, using a microbolometer with 17 µm pixel from Ullis, compatible with Android 4.1 and up.
SP15201	2015/1 166	Seek Thermal - Raytheon EXC001	Seek Thermal Infrared Camera & Raytheon IR Microbolometer	The highest resolution thermal camera for smartphone, 156 x 206 pixels, using a microbolometer with 12 µm pixel from Raytheon, compatible with Android and IOS
SP14158	2014/1 95	Fluke VT02	Visual IR Thermometer	Blends thermal and visual images on a single display - Uses ceramic pyroelectric sensor array - Low resolution at low cost to make thermal imaging a common tool.

LED

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
WHITE/BLUE LED				
SP15224	2015/6 107	Toshiba TL1L4	GaN on Silicon LED	Third generation GaN on Silicon LED by Toshiba: new architecture without top electrode to increase the light extraction and a ceramic package with sintering.
SP14175	2014/6 82	CREE CXA1520	LED Array	High performance LED array with a luminosity x2 and a cost divided by 4 in 3 years.
SP13129	2013/6 75	Soraa Tri-LED	GaN on GaN LED	New: GaN substrate, triangular shape chip, and an original wafer level packaging. The first GaN on GaN LED in a 50W halogen equivalent MR16 lamp with several new features...
UV LED				
SP16273	2016/6 170	SETi UVTOP270TO39HS	UV LED	The UVTOP270TO39HS and SS35DF227513 are two 275nm UVC LEDs from Sensor Electronic Technology Inc. (SETi).
SP16272	2016/6 115	Crystal IS OPTAN280K-BL	UV LED	The OPTAN280K-BL and OPTAN-265N-SMD are two UVC LEDs, of 280nm and 265nm respectively, from Crystal IS.
LED LAMP				
SP14162	2014/7 99	OSRAM OSTAR Headlamp	LED Array	High performance Vertical Thin Film with Vias (VTFV) dies in a new and more efficient packaging for harsh environment.

MEMS & SENSOR

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
PRESSURE SENSOR				
SP17308	2017/2 104	Infineon DPS310	Capacitive Pressure Sensor	Tiny MEMS digital barometer for smartphones and wearables
SP16295	2016/11 128	STMicroelectronics LPS22HB	Nano Pressure Sensor	analysis of the sensor structure and cost, as well as a characteristics comparison with the 1st-generation STMicroelectronics LPS331AP pressure sensor and the Bosch Sensortec BMP280
SP16279	2016/9 96	Melexis MLX91802	TPMS	The Melexis MLX91802 is an absolute pressure sensor used in tire pressure monitoring systems (TPMS) for cars and trucks.
SP16255	2016/3 77	Melexis MLX90809	Relative Pressure Sensor	Second generation integrated pressure sensor for harsh environments.
SP15203	2015/1 150	Freescale FXT87	TPMS	The TPMS solution featuring the smallest footprint and lowest RF power consumption.
SP14154	2014/2 126	Infineon SP37	TPMS	Infineon Technologies is one of the leaders on the TPMS market. The SP37 Tire Pressure Monitoring Sensor is Highly Integrated & Reliable .
OSCILLATOR				
SP15214	2015/7 97	SiTime SiT1552	MEMS Oscillator	The smallest MEMS oscillator on the market assembled in an innovative Wafer Level Chip Size Package.
SP14147	2014/1 108	Silicon Labs Si504	Oscillator	The Si504 is the first silicon oscillator from Silicon Labs. Manufactured with the CMEMS process, the crystal elements are replaced by micromachined semiconductor resonators.
MICROPHONE				
SP17314	2017/2 109	Vesper VM1000	Piezoelectric Microphone	Disruptive first Piezoelectric MEMS microphone for consumer applications.
SP16296	2016/10 106	Goertek iPhone7 Microphone	MEMS Microphone iPhone 7	Goertek MEMS Microphone (Infineon solution) in Apple iPhone 7 Plus
SP16294	2016/10 106	STMicroelectronics iPhone7 Microphone	MEMS Microphone iPhone 7	STMicroelectronics MEMS Microphone in Apple iPhone 7 Plus
SP16292	2016/10 113	Knowles iPhone7 Microphone	MEMS Microphone iPhone 7	Knowles MEMS Microphone in Apple iPhone 7 Plus
SP14189	2014/10 107	InvenSense ICS43432	Digital MEMS Microphone	The high sensitivity last come of InvenSense digital MEMS Microphones portfolio with capacitive technology and I2Sprotocol interface.
SP14184	2014/8 240	Wolfson WM7121 & WM7132	Top & Bottom Port Microphones	Set of 2 reports highlighting MEMS and Packaging technologies of Wolfson Microphones.
SP14164	2014/2 100	AAC	Iphone5S microphone	AAC Technologies modified the design of the MEMS die (still supplied by Infineon) and the thickness of key layers.
LIGHT				
SP16268	2016/5 112	Maxim MAX30102	Pulse Oximeter Heart-Rate Sensor	The sensor is an optical heart-rate module and a pulse oximeter sensor in a LED reflective solution. The main die includes a photodiode area and an analysis part, with an integrated ambient light cancellation system.
SP16237	2016/1 70	ams TSV TSL2584TSV	Ambient Light Sensor (ALS)	World's Smallest Ambient Light Sensor for Wearable Applications.
SP14182	2014/7 69	Capella CM3512	UV Sensor	The best spectral UVA/UVB sensitivity IC from Capella Microsystems with Filtron™ technology and I2C protocol interface.
IMU/COMBO				
SP16297	2016/12 155	STMicroelectronics LSM6DSM	6-axis IMU dedicated to OIS	Complete reports and comparison of the latest generation of inertial measurement units for consumer optical image stabilization applications
SP16291	2016/12 136	InvenSense iPhone 7 Plus	IMU dedicated to OIS	Complete reports and comparison of the latest generation of inertial measurement units for consumer optical image stabilization applications
SP16261	2016/4 246	BOSCH Sensortec BMF055	9-axis IMU	The BMF055 is a new version of the BOSCH Sensortec 9-axis device (3-axis Gyroscope + 3-axis Accelerometer + 3-axis Magnetometer), with a MCU included in the package.

MEMS & SENSOR

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP16260	2016/4 153	InvenSense ICM-30630	6-axis IMU	World's first tri-core 6-axis motion tracking solution with integrated sensor-hub framework software.
SP15241	2015/11 160	Murata SCC2000 Series	Automotive MEMS Combo	Murata's Second Generation Combo Sensor (1-axis gyro and 3-axes accelero) for Automotive & Harsh Environments
SP15240	2015/11 130	Silicon Sensing CMS300	Automotive MEMS Combo	Silicon Sensing Combo Sensor (1-axis gyro and 2-axes accelero) for Automotive & Harsh Environments.
SP15230	2015/9 140	Fairchild FIS1100	6-Axis MEMS IMU	Fairchild's first consumer IMU manufactured using a completely new bulk micro machining process and interconnection structure.
SP15218	2015/6 140	STMicroelectronics LSM6DS3	MEMS IMU	ST's extra small (only 6mm ³) and sub-mA IMU named 2014 MEMS device of the year 50% footprint reduction, many process & design innovation.
SP15210	2015/3 177	Bosch Sensortec BMI160	Bosch Sensortec	New 6-Axis Inertial unit from Bosch, with a very low power consumption accelerometer and a footprint of only 3x2.5mm ² .
SP15204	2015/2 109	InvenSense MP67B	InvenSense MP67B	The InvenSense's first design win in Apple iPhone and second generation 6-Axis Devices for Consumer Applications.
SP14179	2014/9 136	Maxim MAX21100	6-Axis	The first MEMS IMU (3-Axis Gyro + 3-Axis Accelero on the same die) from Maxim Integrated in industry smallest and thinnest 3x3x0.83mm package.
SP14163	2014/3 150	Invensense IMU-9250	9-axes MEMS	The Smallest Available 9-Axis IMU (only 9mm ² footprint)13/03/2014 InvenSense's Second Generation Devices for Consumer Applications
SP13153	2013/12 200	STMicroelectronics LSM9DS0	9-Axis IMU	The smallest 9-Axis MEMS IMU from ST for Consumer Applications. Combines 3-Axis Gyroscope, 3-Axis Accelerometer and 3-Axis Magnetometer
SP13150	2013/12 160	Bosch Sensortec BMX055	9- Axis IMU	The first 9-Axis MEMS IMU from Bosch Sensortec for Consumer Applications combines 3-Axis Gyroscope, 3-Axis Accelerometer and 3-Axis Magnetometer

GYROSCOPE

SP16299	2016/11 87	Invensense IDG-2030	Gyroscope fo OIS	2-axis thin gyroscope for camera OIS
SP16298	2016/11 105	STMicroelectronics L2G2IS	Gyroscope fo OIS	2-axis thin gyroscope for camera OIS
SP14187	2014/10 119	STMicroelectronics A3G4250D	3-Axis	The first 3-Axis MEMS Gyroscope to meet Automotive AEC-Q100 qualification.
SP14176	2014/9 81	Analog Devices ADIS16136	Precision Angular Rate Senso	Tactical grade gyro module with in-run bias stability of 4°/hour.
SP14173	2014/6 135	Maxim MAX21000	3-Axis	The first MEMS Gyroscope from Maxim Integrated in industry smallest 3x3mm package.
SP14152	2014/3 160	Sensoror STIM210	3-Axis	World highest performance silicon MEMS gyro available without export control.Tactical grade with bias instability of 0.5°/h in a miniature 33cm ³ package.

FINGERPRINT

SP16282	2016/8 130	Qualcomm Sense™ ID 3D	Ultrasonic Fingerprint	Powered by an ultrasonic-based fingerprint biometric solution, the senssor provides a more secure, reliable alternative to capacitive-based fingerprint sensors.
SP16271	2016/5 105	Next Biometrics NB-1010-U	Fingerprint Sensor	The sensor die is manufactured on glass with LTPS technology and uses a very specific coating to ensure the device's functionality.
SP16248	2016/2 89	EgisTec ET300	Fingerprint Sensor	Philips integrates in its smartphone the innovative fingerprint sensor developed by EgisTec
SP15247	2015/12 109	Google Nexus 6P	Fingerprint Sensor	In Google's Nexus 6P, Huawei integrates again an innovative fingerprint sensor developed by fingerprint Cards, referenced FPC1025.
SP15243	2015/11 118	Apple iPhone 6s Plus	Fingerprint Sensor	For the iPhone 6s Plus, Apple proposes a new fingerprint with the same detection principle but new design, new front-end process and new back-end packaging.
SP15219	2015/5 104	Samsung Galaxy S6	Fingerprint Sensor	Second generation Synaptics fingerprint sensor: same capacitive technology but totally different design.

MEMS & SENSOR

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP15212	2015/4 83	Huawei Fingerprint FPC1020	Fingerprint Sensor	Fingerprint Cards integrates in Huawei's Ascend Mate 7 the first smartphone fingerprint sensor based on capacitive sensing technology.
SP14178	2014/8 87	Samsung Galaxy S5	Fingerprint sensor	The first fingerprint sensor integrated on Samsung's product, using innovative capacitive sensing technology from Synaptics, human interface solutions world leader.
SP14168	2014/6 89	Apple iPhone 5S	Fingerprint sensor	The first integration of a touch fingerprint sensor and a sapphire protective window.

ENVIRONMENT

SP16223	2016/2 99	Humidity Sensors Industry 2015	Relative Humidity Sensors Technology and Cost Review	Humidity Sensors from the main players analyzed and compared!
SP15236	2015/10 86	mbridge CMOS Sencs CCS801	MEMS Gas Sensor	First gas sensor with ultra low power consumption developed for the portable handheld devices.
SP15225	2015/7 77	AMS AS-MLV-P2	Gas Sensor	The AV-MLV-P2 is a volatile organic compounds gas sensor which can detect alcohols, aldehydes, ketones, organic acids, amines, aliphatic and aromatic hydrocarbons.
SP15209	2015/4 121	STMicroelectronics HTS221	Humidity and temperature sensor	High performances humidity sensor based on STMicroelectronics capacitive digital sensor in a tiny compact package.
SP15205	2015/2 119	Bosch Sensortec BME280	Pressure and humidity sensor	High performances pressure and humidity sensor based on Bosch APSM process and innovative resistive measurement technology in a single compact package.
SP13130	2013/7 85	Sensirion SHTC1	Humidity and temperature sensor	Sensirion SHTC1 humidity and temperature-sensing device is manufactured using a proprietary MEMS technology, called "CMOSens®".

DISPLAY/OPTICS

SP15229	2015/9 143	Intel RealSense	3D camera	Innovative 3D camera for facial analysis and hand/finger tracking, based on resonant micro-mirror, IR laser, visible and near infrared image sensors.
SP12110	2012/11 90	Molex Luxtera	Photonic Connector	The 1064101003 Quad Small Form-factor Pluggable Plus connector from Molex integrates this photonic circuit from Luxtera which manages 40Gbps data rate on a single silicon die.

COMPASS

SP15222	2015/10 160	eCompass Review	3-Axis & 6-Axis	Over 20 eCompasses from the main players analyzed and compared !
SP14165	2014/3 149	Bosch Sensortec BMC150	6-Axis Electronic compas	Second Generation Electronic Compass, very low power consumption and footprint of only 2.2x2.2mm ² .
SP13141	2013/11 90	Yamaha YAS532B	Compass in GS4	The new 3-axis Geomagnetic Sensor from Yamaha for consumer applications. Used in the Samsung Galaxy S4 Smartphone.

ACCELEROMETER

SP17315	2017/3 130	mCube MC3672	WLCSP MEMS Accelerometer	Ultra-low power - Highly integrated WLCSP Accelerometer with Via-Middle TSV
SP17269	2017/1 110	Safran Colibrys VS1000	High End Accelerometer	Single-Axis High Performance Accelerometer with new ASIC design
SP16256	2016/4 114	mCube MC3635	3-axis Accelerometer	Ultra-low power 3D TSV MEMS Single-Chip 3-axis Accelerometer
SP16074	2016/7 97	Bosch Sensortec BMA250E	3-Axis Accelerometer-Consumer	The BM250E is a low power digital accelerometer packaged in a tiny 2x2x0.9mm ³ LGA package.
SP15207	2015/4 110	mCube MC3413	3-Axis Accelerometer	The First Monolithic 3D MEMS Single-Chip Accelerometer in 1mm ² .
SP14174	2014/7 148	Bosch Sensortec BMA355	3-Axis	The smallest 3-axis MEMS accelerometer in a WLCSP package (only 1.4mm ³ !)

PACKAGING

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
WLP				
SP16267	2016/4 93	Qualcomm WCD9335	FOWLP	The Qualcomm WDC9335 is an audio codec wafer-level packaged with fan-out technology. It is used in Samsung Galaxy S7.
SIP				
SP16277	2016/7 130	Intel Curie	SiP Module	This tiny system-in-package (SiP) includes the Intel Quark chip, Bluetooth radio, sensors, and battery charging in less than 150mm3.
EMBEDDED				
SP15233	2015/10 68	GaN Systems AT&S ECP®	GaNpx Top Cooled	Latest GS66508T power transistor of GaN Systems packaged with a top - side cooling.
SP15202	2015/1 117	AT&S GS66508P	GaN HEMT	The new AT&S Embedded Component Package (ECP) for high voltage and power transistor.
SP13133	2013/5 100	Maxim-TDK P8009	Module with Maxim Embedded Dies	the P8009 Power Management Unit of TDK-EPC is one of the few high-volume embedded dies package. It integrates two ICs, a power management IC and a 16-bit MCU.
3D PACKAGING				
SP16303	2016/12 100		Application Processors Comparison	Comparison of main players AP: Apple A10 with inFO vs. Qualcomm Snapdragon 820 with MCEP packaging technology vs. HiSiliconKirin 955 & Samsung Exynos8 with standard Package-on-Package
SP16300	2016/10 100	TSMC Silicon Capacitor	Deep Trench Capacitor	Deep analysis and Reverse Costing of the new silicon capacitor technology from TSMC used for the latest Apple's Application processor, the A10 found in the iPhone 7
SP16290	2016/10 100	TSMC inFO	Package-on-Package	Deep Analysis and reverse costing of the new inFO packaging technology from TSMC used for the latest Apple's Application processor, the A10 found in the iPhone 7
SP16276	2016/6 113	Qualcomm Snapdragon 820	Package-on-Package	The Galaxy S7 integrates the Exynos 8 with classic PoP packaging or the Snapdragon 820, with Molded Core Embedded Package (MCEP) technology, developed by Shinko.
SP15231	2015/9 100	AMD Radeon R9 Fury X	AMD Radeon R9 Fury X	World's First HBM-Powered products.
SP15226	2015/7 100	Samsung M393A8G40D40	DRAM with TSV	The DDR4 memory chips are manufactured using Samsung's 20nm process technology and 3D TSV via-middle package technology.

POWER

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SiC				
SP17309	2017/1 66	STMicroelectronics STC30N120	1200V SiC MOSFET	The 1st generation 1200V SiC MOSFET device from STMicroelectronics has good current density at a very competitive cost
SP16275	2016/7 94	Rohm BSM180D12P3C007	SiC MOSFET	The BSM180D12P3C007 is a 1200V 180A SiC MOSFET module from Rohm for high power applications. The trench structure reduces on-resistance and switching losses.
SP16262	2016/8 81	Wolfspeed C3M	900V SiC MOSFET	The SiC C3M™ Platform is the first 900V SiC MOSFET platform, designed by Wolfspeed for high-power applications like renewable energy, DC/DC converters, and telecom power supplies.
SP15213	2015/3 139	Cree CAS300M17BM2	CREE 1700V SiC Module	A specific SiC epitaxy with a dual layers structure for a very low R _{dson} of 8mΩ.
SP15206	2015/2 136	Cree CAS120M12BM2	CREE 1200V SiC Module	The 2nd Generation SiCMOSFET with Z-Rec Diode SiC.
SP14161	2014/4 100	Rohm SCH2080KE	SiC MOSFET	N-Channel SiCpower MOSFET co-packaged with SiC-SBD.
MOSFET				
SP16289	2016/11 171		40V Silicon MOSFET	Technology and Cost Review of 40V Si MOSFET

POWER

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP14171	2014/4 80	Infineon CoolMOS C7	Superjunction MOSFET	New CoolmosTMsuperjunctiontechnology in N-Channel 650V power MOSFET. The CoolMOS C7 offers a very low on-resistance and a fast switching speed.

IGBT

SP16288	2016/12 195		IGBT vs SiC MOSFET comparison	1200V SiCMOSFET vs Silicon IGBT: Technology and cost comparison
SP16281	2016/9 80	Infineon CooliR ²	IGBT module	The CooliR ² Die™ power module from Infineon is an IGBT module for automotive applications integrated into different vehicles' Traction Power Inverter Module (TPIM).
SP15232	2015/9 110	Semikron SKiM306GD12E4	Solderless module	SKIM 63, solderless, sinter technology power module developed for high reliability operation in a light module.
SP14186	2014/12 106	Infineon FS100R12PT4	IGBT4 1200V EconoPack	Infineon IGBT4 power module with lower switching losses and higher operating temperature.
SP13136	2013/9 100	Infineon FS600R07A2E3	Hybridpack 2 module	A three-phase six-pack for the automotive market from Infineon. With a maximal power of 100KW, 650V and 600A the HybridPACK2 is optimized for the EV/HEV applications.

GaN

SP17311	2017/2 78	Panasonic PGA26C09	600V GaN MOSFET	The first 600V GaN HEMT of Panasonic is designed with an innovative structure to integrate a normally Off transistor in a standard package without cascode.
SP16302	2016/11 120	Transphorm TPH3206PS	GaN-on-Silicon HEMT	Transphorm's TPH3206PS transistor has a new die design and manufacturing process. The die contacts are optimized on the die area to save space, and increase current density. The transistor metal contact and field plate structure have also been changed from the previous version.
SP16286	2016/10 66	Wolfspeed CGHV40100	GaN HEMT	General-purpose, unmatched 50V GaN HEMTs from Wolfspeed specifically designed to solve long-standing issues for radar systems employing traditional traveling-wave tube (TWT) amplifiers.
SP16257	2016/4 86	EPC EPC2040	GaN FET	Efficient Power Conversion EPC2040 15V eGaN FET for LiDAR Systems
SP16250	2016/3 210		GaN on Si HEMT vs SJ MOSFET	Will SJ MOSFETs still be attractive compared to GaN devices?
SP15216	2015/5 137	Transphorm TPH3002PS	GaN transistor	High voltage GaN HEMT developed for the high frequency operation in a low-inductance source terminal TO220 package.
SP15202	2015/1 117	GaN Systems GS66508P	GaN HEMT	The first 650V GaN on Silicon HEMT transistor on the market from GaN Systems.

SYSTEM

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
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TELECOM

SP14169	2014/4 106	Huawei E5372	Mobile 4G WiFi Hotspot	HUAWEI E5372 Mobile WiFi is a high-speed packet access mobile hotspot. It is a multi-mode wireless terminal for SOHO (Small Office and Home Office) and business professionals.
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MEDICAL

SP13137	2013/11 60	Given Imaging PillCam	Camera Pill	Designed by the Israeli firm Given Imaging, as the model for the small intestine, " PillCam Colon 2 " is a little bigger than a capsule (31x11 mm).
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ENERGY

SP16253	2016/3 94	SMA Sunny Island 6.0H	Off-grid and on-grid PV Inverter	The Sunny Island 6.0H supports a wide range of on-grid and off-grid applications from operation in remote off-grid areas to home energy management
SP15227	2015/7 102	SMA SB1.5-1VL40	Solar inverter	Easy to install, to connect and to monitor, the Sunny Boy 1.5 is the SMA Solar newly developed inverter for residential PV systems.
SP15211	2015/2 77	Tigo MM-2ES 50	Solar optimizer	Production, management and safety of a photovoltaic installation improvement Low cost peak efficiency up to 99.5%.

SYSTEM

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP14170	2014/4 71	EnOcean PTM210	Push Button Transmitter	Using energy harvesting, the PTM210 wireless transmitter module controls lighting systems without battery.
SP14160	2014/3 184	REFUSOL 020K- SCI	PV INVERTER	Silicon Carbide transistors allow a weight reduction and performance improvement. Peak efficiency ratings of up to 98.7% on a wide input voltage range.

CONSUMER

SP17280	2017/2 131	HTC Vive	VR Head-Mounted Display	HTC Vive Virtual Reality Head-Mounted Display
SP16265	2016/3 50	Parrot Bebop Drone	Drone	The first consumer flying camera that you can pilot with your smartphone.
SP16249	2016/2 73	Avogy olt Laptop Charger Plu	Laptop charger	A SiC Transistor inside the smallest and most performant Laptop Charger currently available.

AUTOMOTIVE

SP17312	2017/1 80	Autoliv MRR	77GHz Multi Mode Radar	A compact, cost-effective (combining Long and Middle Range detection) and high-performance driving assistance system
SP16287	2016/9 135	Toyota Prius 4	Power control Unit	The Prius 4 module integrates Toyota's latest power card packaging, with double side cooling.
SP16284	2016/9 82	Delphi RSDS	76Ghz radar	Delphi's Rear and Side Detection System (RSDS) utilizes 76Ghz single-beam mono-pulse radar. Its compact design enables simplified vehicle integration.
SP16251	2016/1 104	Delphi RACam	Radar and Camera System	A compact, cost-effective and high-performance Advanced Driving Assistance System (ADAS).
SP15234	2015/10 80	Bosch Mid Range Radar Sensc	MRR Sensor	A compact, cost-effective and high-performance driving assistance system at 77GHz.
SP14190	2014/10 79	Schneider EV2030WS	Electric Vehicle Charging Station	Home Electric Vehicle Charging Station (EVCS) which is described as a simple, easy-to-install, and user-friendly solution for charging EVs at home.

SP17307	2017/1 81	Enphase S280	Solar microinverter	Best in class SmartGrid-ready 280VA inverter with new generation ASIC-based topology for lighter design and enhanced solar power management
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TECHNOLOGY & PATENT

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
REVERSE TECHNOLOGY				
SP15238	2015/11 120	Apple iPhone 6s Plus	Teardown & Physical Analyses	Discover and understand Apple's technical choices and main suppliers.
PATENT INFRINGEMENT				
SK15003	2015/11 120		Capacitive Fingerprint Sensors	Technology & Patent Infringement Risk Analysis.
SK15002	2015/4 172		MEMS Microphones	Technology & Patent Infringement Risk Analysis.
SK14001	2014/9 80		9-axis IMUs	Technology and Patent Infringement Risk Analysis.

Headquarters 21 rue La Noue Bras de Fer 44200 Nantes, FRANCE T : +33 2 40 18 09 16 sales@systemplus.fr	Europe Sales Office Lizzie LEVENEZ Frankfurt am Main GERMANY T : +49 151 23 54 41 82 llevenez@systemplus.fr	America Sales Office Steve LAFERRIERE Phoenix, AZ USA T : +1 480 922 7164 laferriere@yole.fr	Asia Sales Office Takashi ONOZAWA Tokyo JAPAN T : +81 3 4405 9204 onozawa@yole.fr
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