Smarter Micro.

S2916 PRELIMINARY DATA SHEET

Tx-Rx FEM for Quad-Band GSM/GPRS/EDGE
W/14 linear TRx Switch ports, Dual-band TD-SCDMA, and TDD-LTE Band39

FEATURES

- GSM, GPRS and EDGE Transmit
- TD-SCDMA Compliant
- TD-HSDPA and TD-HSPA+ Compliant
- TDD-LTE Band39 Compliant
- Fourteen High Linearity TRx switch ports
- High Efficiency at Rated Pout
- Input/output RF ports matched internally to 50Ω load
- Integrated directional coupler
- MIPI RFFE Digital Control
- Support Linear or VRAMP-based GMSK power control
- RF input switching to 3G/4G path
- Robust 8kV ESD protection at Antenna port
- Small, low profile package: 5.50mmx5.30mmx0.9mm, 38-Pin

APPLIATIONS – Cellular Handset

- Quad-Band GSM/GPRS/EDGE
- Dual-Band TD-SCDMA -Band34/39
- TDD-LTE -Band39

DESCRIPTION

Smarter Micro's S2916 is Transmit and Receive Front End Module (FEM) with the capability to support Quad-Band GSM/GPRS/EDGE, TD-SCDMA B34/B39 and TDD-LTE B39 frequency bands. S2916 also offers fourteen high linearity/low insertion loss TRx ports for 3G/4G RF front end solutions.

S2916 consists of a MIPI-based CMOS controller, Power Amplifier(PA) blocks, harmonic filter/matching blocks, single pole sixteen throw switch (SP16T), and a directional coupler at switch output. The GaAs/CMOS die and passive components are mounted on a multi-layer laminate substrate and encapsulated in plastic package. All RF ports are internally matched to 50 Ω load simplifies the external circuit on the phone board.

The MIPI-based CMOS controller is configured to support linear-GMSK or VRAMP-enabled operation standard. It can meet different application platform requirement. In EDGE and TD-SCDMA / TDD LTE linear modes, VRAMP voltage and MIPI-based bias setting jointly optimize PA linearity and efficiency.

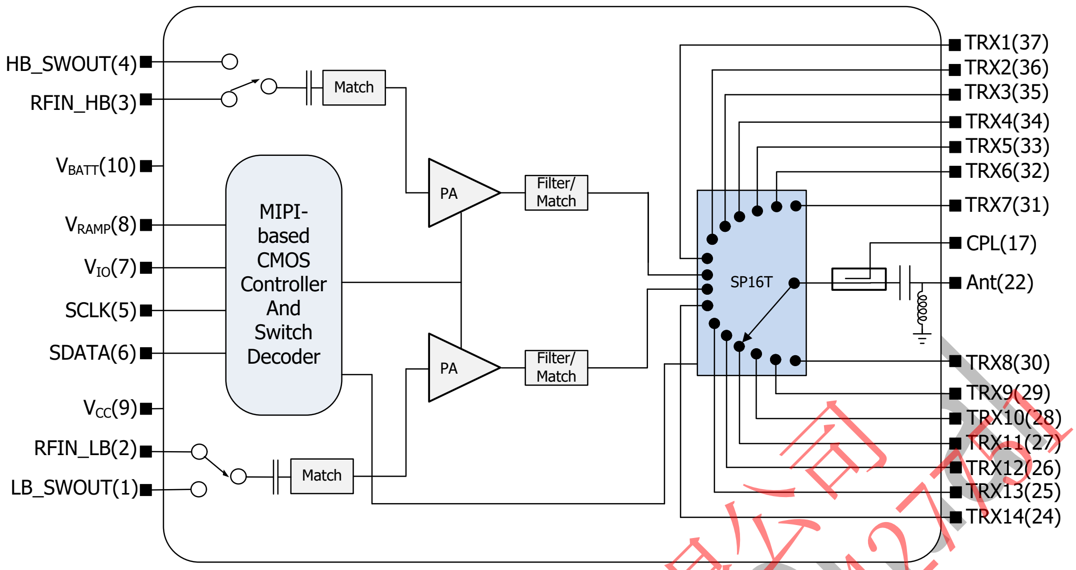

Figure1. S2916 Functional Block Diagram

ELECTRIAL SPECIFICATIONS

The following tables list the electrical characteristics of the S2916 Front-End Module. Table 1 lists the absolute maximum ratings and Table 2 lists the recommended operating and interface specifications. S2916 is a static-sensitive electronic device and it should not be stored or operated near strong electrostatic fields. Detailed information on device dimensions, pad descriptions, packaging and handling can be found in later sections of this datasheet.

Table1. S2916 Absolute Maximum Ratings

Parameter	Rating	Unit
Power Supply (V_{BATT},V_{CC})	-0.3 to +6.0	V
MIPI Control Signals (SCLK,SDATA,V_{IO})	2	V
RF Input Power	+10	dBm
GMSK Burst Duty Cycle	50	%
Output Load VSWR	15:1	
Operating Temperature	-30 to +100	°C
Storage Temperature	-40 to +150	°C
Moisture Sensitivity Level(MSL)	3	
ESD Rating-Human Body Mode(HBM,JESD22-A114)	1000	V
ESD Rating-Charge Device Mode(CDM,JESD22-C101C)	1000	V
ESD Rating-Contact Discharge Antenna Port(IEC 61000-4-2)	8000	V

Stresses in excess of the absolute ratings may cause permanent damage. Functional operation is not implied under these conditions. Exposure to absolute ratings for extended periods of time may adversely affect reliability. Specified typical performance of functional operation of the device under Absolute Maximum Rating conditions is not implied.

Table2. S2916 Recommended Operating and Interface Specifications

Parameter		Specification			Unit
		Min	Typ	Max	
V_{BATT}/V_{CC}	GMSK	3.2	3.5	4.6	V
	EDGE/TD-SCDMA/TDD-LTE	3.2	3.6	4.6	V
Operating Case Temperature GMSK /EDGE/TD-SCDMA/TDD-LTE		-20	-	+85	°C
GMSK/EDGE Burst Duty Cycle		12.5	-	50	%
MIPI Supply Voltage(V_{IO})		1.65	1.8	1.95	V
MIPI Logic Low		0	-	0.3 x V_{IO}	V
MIPI Logic High		0.7 x V_{IO}	-	V_{IO}	V
Standby Current		-	7	10	uA
TRx Mode Current		-	50	60	uA

Table3. S2916 Linear GMSK/EDGE Mode Recommended Maximum Operating Power

Band	Waveform	Power Mode	Prated	Unit
LB	GMSK	High Power Mode(HPM)	33.5	dBm
		Medium Power Mode(MPM)	29	
		Low Power Mode(LPM)	23	
		Ultra-low Power Mode(ULPM)	15	
	EDGE	Medium Power Mode(MPM)	27.5	
		Low Power Mode(LPM)	21.5	
		Ultra-low Power Mode(ULPM)	15.5	
HB	GMSK	High Power Mode(HPM)	30.5	
		Medium Power Mode(MPM)	28.5	
		Low Power Mode(LPM)	22.5	
		Ultra-low Power Mode(ULPM)	14.5	
	EDGE	Medium Power Mode(MPM)	26.5	
		Low Power Mode(LPM)	20.5	
		Ultra-low Power Mode(ULPM)	14.5	

Table4. S2916 Electrical Specifications—GSM850/900 GMSK/EDGE Mode

Condition: V_{BATT}=3.5V, Duty Cycle=12.5%, Pulse Width=577μs, T_{EMP}=+25°C, 50Ω System, unless otherwise defined. **(Linear GMSK Operation)**

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Frequency Range	824	-	849	MHz	
	880	-	915	MHz	
Input VSWR	-	-	2:1		
Maximum Output Power, P_{SAT}	-	34	-	dBm	GMSK HPM
Power Added Efficiency, saturated	-	-	TBD	%	P_{OUT}=P_{SAT},P_{IN}=8dBm
Power Added Efficiency	-	-	TBD	%	GMSK HPM
	-	-	TBD	%	GMSK MPM
	-	-	TBD	%	GMSK LPM
	-	-	TBD	%	GMSK ULPM
Gain	-	38	-	dB	GMSK HPM
	-	38	-		GMSK MPM
	-	24	-		GMSK LPM
	-	24	-		GMSK ULPM
Gain Compression	-	1.5	-	dB	22dBm≤ P_{OUT} ≤32dBm
Gain Variation Over Temperature	-	-	TBD	dB	GMSK HPM
	-	-	TBD		GMSK MPM
	-	-	TBD		GMSK LPM
	-	-	TBD		GMSK ULPM
Gain Variation Over Voltage	-	-	TBD	dB	GMSK ALL, T_{EMP} =25°C
Switching Spectrum_400kHz	-	-	-28	dBm/30kHz	GMSK ALL, P_{IN} adjusted for Temperature
	-	-	-28		
	-	-	-28		
	-	-	-28		
ACLR_200kHz	-	-	-34	dBc/30kHz	EDGE MPM
	-	-	-34		EDGE LPM
	-	-	-34		EDGE ULPM
ACLR_400kHz	-	-	-58		EDGE MPM
	-	-	-58		EDGE LPM
	-	-	-58		EDGE ULPM
ACLR_600kHz	-	-	-65		EDGE MPM
	-	-	-65		EDGE LPM
	-	-	-65		EDGE ULPM

EVM RMS	-	-	4	%	EDGE MPM
	-	-	4		EDGE LPM
	-	-	4		EDGE ULPM
Harmonics, $2f_0$ to 12.75GHz	-		-33	dBm	$P_{OUT} \leq P_{RATED}$, RBW=3MHz
Noise Power	-	-	TBD	dBm/100kHz	869 MHz to 894 MHz
	-	-	TBD		925 MHz to 935 MHz
	-	-	-83		935 MHz to 960 MHz
	-	-	-86		1805 MHz to 1880 MHz
	-	-	-86		1930 MHz to 1990 MHz
Stability	-	-	-36	dBm	VSWR=10:1, $P_{OUT}=P_{RATED}$, V_{BATT}=3.2V to 4.6V, T_{EMP} =-20°C to +85°C
Ruggedness	No damage or permanent degradation to device			-	VSWR=15:1, $P_{OUT}=P_{RATED}$, V_{BATT}=3.2V to 4.6V, T_{EMP} =-20°C to +85°C

Table5. S2916 Electrical Specifications—GSM850/900 GMSK MODE

Condition: V_{BATT}=3.5V, V_{RAMP}=1.6V, P_{IN}=3dBm, Duty Cycle=12.5%, Pulse Width=577μs, Temp=+25°C, 50Ω System, unless otherwise defined. **(VRAMP-BASED Operation)**

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Frequency Range	824	-	849	MHz	
	880	-	915	MHz	
Input Power	-1	3	6	dBm	
Input VSWR	-	-	2:1		
Maximum Output Power	-	34	-	dBm	
Power Added Efficiency	-	-	-	%	V_{RAMP} rated for P_{OUT}=33dBm
Supply Current	-	-	2	A	
Harmonics, $2f_0$ to 12.75GHz	-	-40	-33	dBm	5dBm≤Pout≤33dBm, RBW=3MHz
Non-Harmonics Spurious up to 12.75GHz	-	-	-36	dBm	
Isolation	-	-75	-55	dBm	P_{IN}=6dBm, V_{RAMP}≤0.1V, Isolation Mode
	-	-22	-15	dBm	P_{IN}=6dBm, V_{RAMP}≤0.1V, LB GMSK TX Mode
Output Noise Power					
869 MHz to 894 MHz	-	-	TBD	dBm	V_{RAMP} rated for P_{OUT}=33dBm, RBW=100KHz
925 MHz to 935 MHz	-	-	TBD	dBm	
935 MHz to 960 MHz	-	-	-83	dBm	
1805 MHz to 1880 MHz	-	-	-86	dBm	
1930 MHz to 1990 MHz	-	-	-86	dBm	
Mode switching time	-	-	2	us	Time from EDGE to GMSK mode transition to meet GMSK forward isolation PESE
Stability(Spurious Emission)	-	-	-36	dBm	VSWR=10:1, all phase angles, P_{OUT}=5dBm to 33dBm, P_{IN}=-1dBm to 6dBm, V_{BATT}=3.2V to 4.6V, Temp=-20°C to +85°C
Ruggedness	No damage or permanent degradation to device				VSWR=15:1, all phase angles, P_{OUT}=5dBm to 33dBm, P_{IN}=-1dBm to 6dBm, V_{BATT}=3.2V to 4.6V, Temp=-20°C to

		+85°C

Table6. S2916 Electrical Specifications—DCS1800/PCS1900 GMSK/8PSK Mode

Condition: V_{BATT}=3.5V, Duty Cycle=12.5%, Pulse Width=577μs, T_{EMP}=+25°C, 50Ω System, unless otherwise defined. **(Linear GMSK Operation)**

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Frequency Range	1710	-	1785	MHz	
	1850	-	1910	MHz	
Input VSWR	-	-	2:1		
Maximum Output Power, P_{SAT}	-	31.5	-	dBm	GMSK HPM
Power Added Efficiency, saturated	-	-	TBD	%	P_{OUT}=P_{SAT},P_{IN}=8dBm
Power Added Efficiency	-	-	TBD	%	GMSK HPM
	-	-	TBD	%	GMSK MPM
	-	-	TBD	%	GMSK LPM
	-	-	TBD	%	GMSK ULPM
Gain	-	33	-	dB	GMSK HPM
	-	33	-		GMSK MPM
	-	25	-		GMSK LPM
	-	22	-		GMSK ULPM
Gain Compression	-	1	-	dB	21.5dBm≤ P_{OUT} ≤29.5dBm
Gain Variation Over Temperature	-	-	TBD	dB	GMSK HPM
	-	-	TBD		GMSK MPM
	-	-	TBD		GMSK LPM
	-	-	TBD		GMSK ULPM
Gain Variation Over Voltage	-	-	TBD	dB	GMSK ALL, T_{EMP} =25°C
Switching Spectrum_400kHz	-	-	-28	dBm/30kHz	GMSK ALL, P_{IN} adjusted for Temperature
	-	-	-28		
	-	-	-28		
	-	-	-28		
ACLR_200kHz	-	-	-34	dBc/30kHz	EDGE MPM
	-	-	-34		EDGE LPM
	-	-	-34		EDGE ULPM
ACLR_400kHz	-	-	-58		EDGE MPM
	-	-	-58		EDGE LPM
	-	-	-58		EDGE ULPM
ACLR_600kHz	-	-	-65		EDGE MPM
	-	-	-65		EDGE LPM

	-	-	-65		EDGE ULPM
EVM RMS	-	-	4	%	EDGE MPM
	-	-	4		EDGE LPM
			4		EDGE ULPM
Harmonics, $2f_0$ to 12.75GHz	-		-33	dBm	$P_{OUT} \leq P_{RATED}$, RBW=3MHz
Noise Power	-	-	TBD	dBm/100kHz	869 MHz to 894 MHz
	-	-	TBD		925 MHz to 935 MHz
	-	-	-83		935 MHz to 960 MHz
	-	-	-86		1805 MHz to 1880 MHz
	-	-	-86		1930 MHz to 1990 MHz
Stability	-	-	-36	dBm	VSWR=10:1,$P_{OUT}=P_{RATED}$, V_{BATT}=3.2V to 4.6V, T_{EMP} =-20°C to +85°C
Ruggedness	No damage or permanent degradation to device			-	VSWR=15:1,P_{OUT}= P_{RATED}, V_{BATT}=3.2V to 4.6V, T_{EMP} =-20°C to +85°C

Table7. S2916 Electrical Specifications—DCS1800/PCS1900 GMSK MODE

Condition: V_{BATT}=3.5V, V_{RAMP}=1.6V, P_{IN}=3dBm, Duty Cycle=12.5%, Pulse Width=577µs, Temp=+25°C, 50Ω System, unless otherwise defined. **(VRAMP-BASED Operation)**

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Frequency Range	1710	-	1785	MHz	
	1850	-	1910	MHz	
Input Power	-1	3	6	dBm	
Input VSWR	-	-	2:1		
Maximum Output Power	-	31.5	-	dBm	
Power Added Efficiency	-	-	-	%	V_{RAMP} rated for P_{OUT}=30dBm
Harmonics, $2f_0$ to 12.75GHz	-	-40	-33	dBm	5dBm≤Pout≤33dBm, RBW=3MHz
Non-Harmonics Spurious up to 12.75GHz	-	-	-36	dBm	
Isolation	-	-61	-51	dBm	P_{IN}=6dBm, V_{RAMP}≤0.1V, Isolation Mode
	-	-22	-15	dBm	P_{IN}=6dBm, V_{RAMP}≤0.1V, HB GMSK TX Mode
Output Noise Power					
869 MHz to 894 MHz	-	-	-84	dBm	V_{RAMP} rated for P_{OUT}=30dBm, RBW=100KHz
925 MHz to 935 MHz	-	-	-84	dBm	
935 MHz to 960 MHz	-	-	-84	dBm	
1805 MHz to 1880 MHz	-	-	TBD	dBm	
1930 MHz to 1990 MHz	-	-	-81	dBm	
Mode switching time	-	-	2	us	Time from EDGE to GMSK mode transition to meet GMSK forward isolation PESE
Stability(Spurious Emission)	-	-	-36	dBm	VSWR=10:1, all phase angles, P_{OUT}=0dBm to 30dBm, P_{IN}=-1dBm to 6dBm, V_{BATT}=3.2V to 4.6V, Temp=-20°C to +85°C

Ruggedness	No damage or permanent degradation to device	VSWR=15:1, all phase angles, P_{OUT}=5dBm to 33dBm, P_{IN}=-1dBm to 6dBm, V_{BATT}=3.2V to 4.6V, Temp=-20°C to +85°C

Table8. S2916 Electrical Specifications—TD-SCDMA B34/39

Condition: V_{BATT}=3.6V, TD-SCDMA Modulation, Duty Cycle=14%, T_{EMP}=+25°C, 50Ω System, unless otherwise defined.

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Frequency Range	1880	-	1920	MHz	
	2010	-	2025	MHz	
Input VSWR	-	-	2:1		
Output Power Meeting EVM and ACLR in Spec.	24.5	-	-	dBm	
Gain	-	32.5	-	dB	High Power Mode
	-	30.5	-	dB	Mid Power Mode
	-	13	-	dB	Low Power Mode
Power Added Efficiency	-	15	-	%	P_{IN} adjusted for P_{OUT}=24.5dBm
ACLR 1.6MHz Offset	-	-46	-40	dBc	
ACLR 3.2MHz Offset	-	-64	-59	dBc	
Harmonics, $2f_0$ to 12.75GHz	-	-45	-40	dBm	0dBm≤P_{OUT}≤24.5dBm, RBW=3MHz
Non-Harmonics Spurious up to 12.75GHz	-	-45	-40	dBm	
DCS Rx Bands	-	-80	-	dBm	f_Rx=1805 to 1850 MHz
RF Rise/Fall Time	-	-	10	us	TRx Mode to TD-SCDMA Tx, from MIPI command to 0.5dB RF settling
	-	-	10	us	TD-SCDMA Tx to TRx Mode, from MIPI command to 30dB gain drop
EVM	-	-	3	%	0dBm≤P_{OUT}≤24.5dBm
Stability(Spurious Emission)	-	-	-36	dBm	VSWR=10:1, all phase angles, P_{OUT}=0dBm to 24.5dBm , V_{BATT}=3.2V to 4.6V, T_{EMP}=-20°C to +85°C
Ruggedness	No damage or permanent degradation to device				VSWR=15:1, all phase angles, P_{OUT}=0dBm to 24.5dBm , V_{BATT}=3.2V to 4.6V, T_{EMP}=-20°C to +85°C

Table9. S2916 Electrical Specifications—TDD-LTE B39

Condition: V_{BATT}=3.6V, Waveform: QPSK, 10MHz BW, 12 RB (MPR=0), T_{EMP}=+25°C, 50Ω System, unless otherwise defined.

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Frequency Range	1880	-	1920	MHz	
Input VSWR	-	-	2:1		
Output Power Meeting EVM and ACLR in Spec.	24	-	-	dBm	
Gain	-	29	-	dB	High Power Mode
	-	29	-	dB	Mid Power Mode
	-	16	-	dB	Low Power Mode
Power Added Efficiency, High Power Mode	-	17-	-	%	P_{IN} adjusted for P_{OUT}=24dBm
Low Power Mode Current	-	50	-	mA	P_{IN} adjusted for P_{OUT}=0dBm
ACLR	-	-42	-39	dBc	E-UTRA ACLR, P_{OUT}≤(24dBm-MPR)
	-	-42	-39	dBc	UTRA ACLR1, P_{OUT}≤(24dBm-MPR)
	-	-	-47	dBc	UTRA ACLR2, P_{OUT}≤(24dBm-MPR)
Harmonics, $2f_0$ to 12.75GHz	-	-45	-40	dBm	0dBm≤P_{OUT}≤24dBm, RBW=3MHz
Non-Harmonics Spurious up to 12.75GHz	-	-45	-40	dBm	
Tx Noise in Rx Bands	-	-	-84	dBm	f_Rx=2010 to 2025 MHz, P_{OUT}=24dBm-MPR
RF Rise/Fall Time	-	-	10	us	TRx Mode to TDD LTE Tx, from MIPI command to 0.5dB RF settling
	-	-	10	us	TDD LTE Tx to TRx Mode, from MIPI command to 30dB gain drop
EVM	-	-	3	%	0dBm≤P_{OUT}≤24dBm
Stability (Spurious Emission)	-	-	-36	dBm	VSWR=10:1, all phase angles, P_{OUT}=0dBm to 24dBm , V_{BATT}=3.2V to 4.6V, T_{EMP}=-20°C to +85°C

Ruggedness	No damage or permanent degradation to device	VSWR=15:1, all phase angles, P_{OUT}=0dBm to 24.5dBm , V_{BATT}=3.2V to 4.6V, T_{EMP}=-20°C to +85°C

Table10. S2916 Electrical Specifications—TRx MODE/COUPLER

Condition: All unused ports terminated in 50Ω, V_{BATT}=3.5V, P_{IN}=-6dBm, Duty Cycle=100%, T_{EMP}=+25°C, unless otherwise defined.

Parameter		Specification			Unit	Condition
		Min	Typ	Max		
Frequency Range		699	-	2690	MHz	
Insertion Loss, TRx - ANT		-	0.65	0.8	dB	699MHz to 960MHz
		-	0.8	1.1	dB	1710MHz to 1990MHz
		-	1.1	1.3	dB	2010MHz to 2690MHz
Input VSWR, TRx		-	1.5:1	-		
Isolation	Active TRx to any adjacent TRx	27	30	-	dB	699MHz to 960MHz
		23	26	-	dB	1710MHz to 1990MHz
		20	25	-	dB	2010MHz to 2690MHz
	Active TRx to any non-adjacent TRx	38	45	-	dB	699MHz to 960MHz
		32	35	-	dB	1710MHz to 1990MHz
		26	30	-	dB	2010MHz to 2690MHz
IMD2		-	-	-105	dBm	Tx Output Power=20 dBm, Blocker Power=-15dBm, Blocker frequency VSWR 10:1, all phase angles
IMD3		-	-	-105	dBm	
Leakage from Tx to TRx Ports		-	-	3	dBm	Any TX Mode
2nd Harmonic		-	-	-55	dBm	TRx Input power = 27 dBm
3rd Harmonic		-	-	-55	dBm	
Turn On Time		-	-	20	us	From 50% V_{BATT} and V_{IO} to 0.5dB RF settling
Switching Speed		-	-	5	us	From MIPI command to 0.5dB RF settling
Coupling Factor in TRx Mode		-	-28	-	dB	699MHz to 960MHz
		-	-22	-	dB	1710MHz to 1990MHz
		-	-20	-	dB	2010MHz to 2690MHz
Coupling Factor Variation over VSWR 2.5:1 at ANT port		-	±1	-	dB	699MHz to 960MHz
		-	±1	-	dB	1710MHz to 1990MHz
		-	±1	-	dB	2010MHz to 2690MHz

FOOTPRINT AND PIN DESCRIPTION

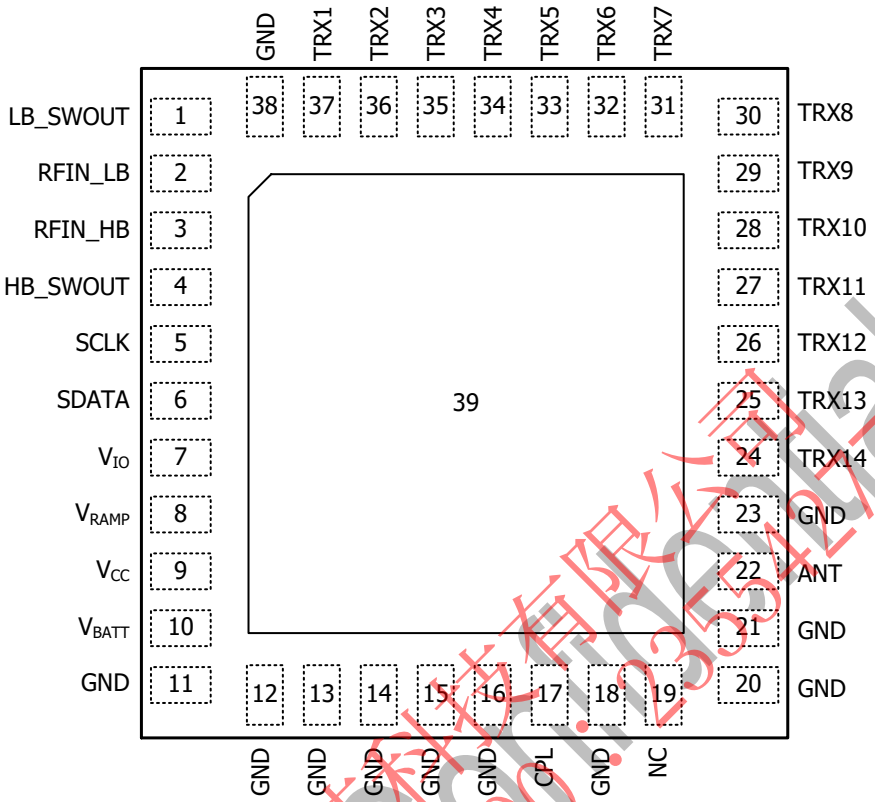

Figure2. S2916 Footprint and Pad Name

Table9. S2916 Pin Description

Pin	Name	Description
1	LB_SWOUT	Alternate RF output path for LB_IN, GND or NC
2	RFIN_LB	RF Input to Low band, matching to 50 Ω. （GSM850/EGSM900)
3	RFIN_HB	RF Input to High band, matching to 50 Ω. （DCS1800/PCS1900/Band 34/39）
4	HB_SWOUT	Alternate RF output path for HB_IN, GND or NC
5	SCLK	MIPI Clock Signal
6	SDATA	MIPI Data Signal(Input/Output)
7	V_{IO}	MIPI Power Supply Input
8	V_{RAMP}	It should be connected with DC ground via 100K resistor while linear GMSK application; It needs one bias voltage while TDS and TDL work.
9	V_{CC}	Power supply voltage for power amplifier
10	V_{BATT}	Power supply voltage for bias circuitry
11~16	GND	Module Ground
17	CPL	Coupler output
18	GND	Module Ground
19	NC	No Connection
20,21	GND	Module Ground
22	ANT	Antenna Port
23	GND	Module Ground
24~37	TRX14~TRX1	TRx switch ports
38	GND	Module Ground
39	GND	Module Ground Pad

APPLICATION INFORMATIONS

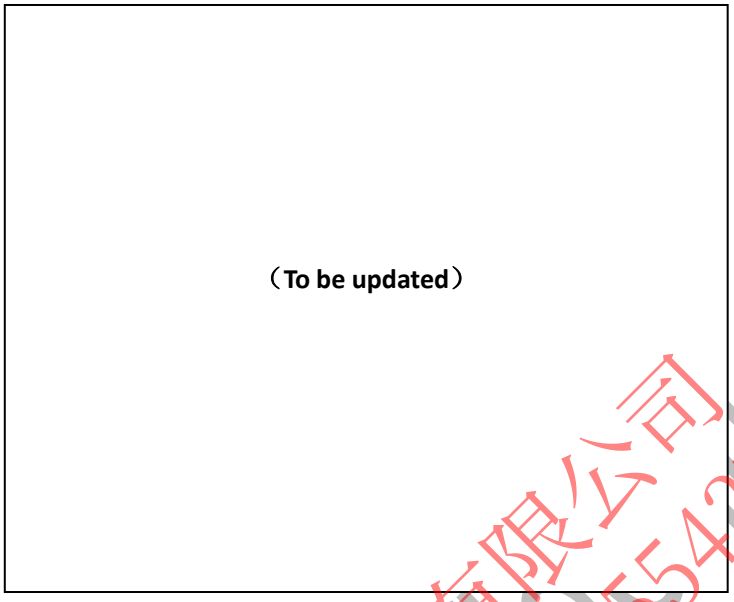

Figure3. S2916 Application Schematic

Notes:

1. All input, output and antenna traces are 50Ω microstrip.
2. No blocking capacitors are needed on all TRx ports for they are already integrated in the module.
3. Place Vbatt capacitors as close to the part as possible.
4. Vbatt capacitor value may change depending on different application.
5. Vbatt and Vcc must be connected together.
6. If any question, please contract with FAE and Sale.

PACKAGE DIMENSIONS

The S2916 quad-band front-end module is a 5.5mm x 5.3mm x 0.9mm, 38-pad, leadless package. Figure4 is a three-view mechanical drawing of the pad configuration with layout dimensions.

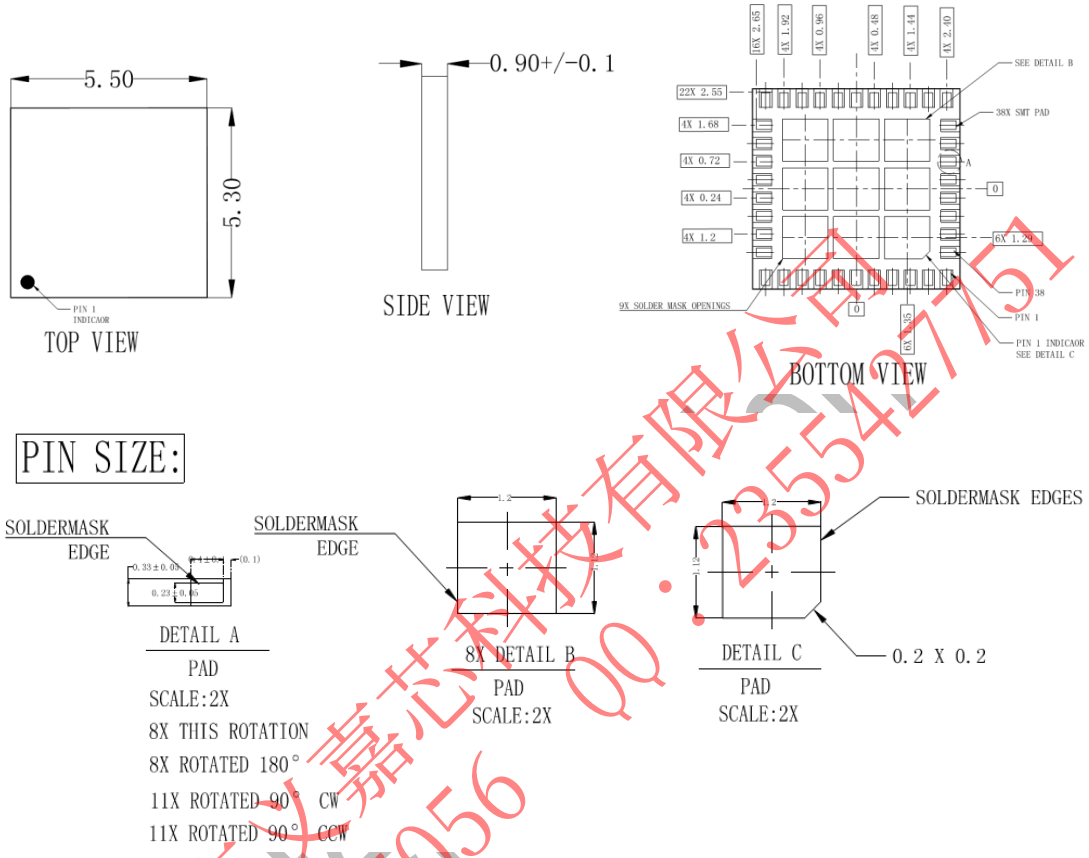

Figure4. S2916 Package Dimension

Notes: Unless otherwise specified
1. All dimensions in millimeters
2. Pad definitions per details on drawing

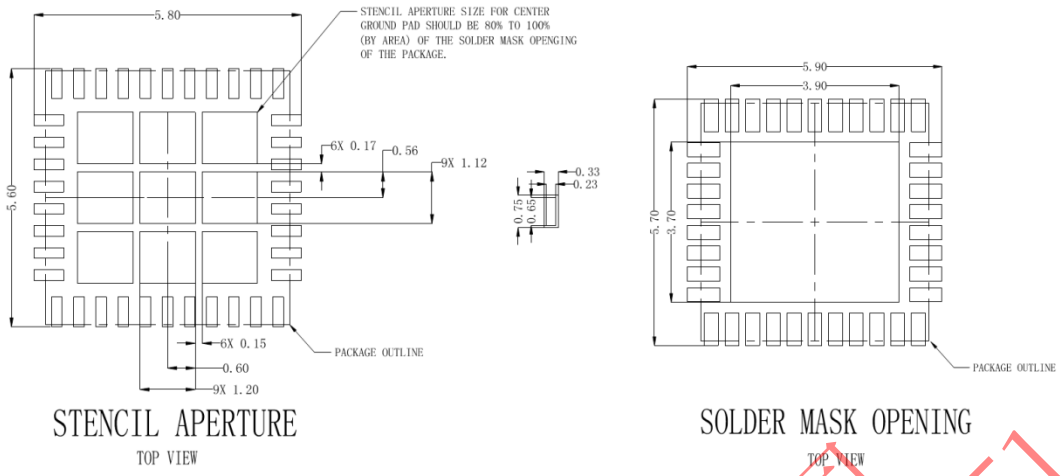

Figure5. Phone PCB Layout Footprint For S2916 Package

Notes: Unless otherwise specified
1. All dimensions in millimeters
2. Pad definitions per details on drawing

ELECTROSTATIC DISCHARGE SENSITIVITY

The S2916 is Class 1C device per JESD22-A14 Human Body Model (HBM), and a Class C3 device per JESD22-C101F Charged-Device Model (CDM).

Personnel Grounding

- Wrist Straps
- Conductive Smocks, Gloves and Finger Cots
- Antistatic ID Badges

Protective Workstation

- Dissipative Table Top
- Protective Test Equipment(Properly Grounded)
- Grounded Tip Soldering Irons
- Solder Conductive Suckers
- Static Sensors

To avoid ESD damage, both latent and visible, it is very important that the product assembly and test areas follow the ESD handing precautions listed below.

Facility

- Relative Humidity Control and Air Ionizers
- Dissipative Floors(less than 1000 Ω to GND).

Protective Packaging and Transportation

- Bags and Pouches(Faraday Shield)
- Protective Tote Boxes(Conductive Static Shielding)
- Protective Trays
- Grounded Carts
- Protective Work Order Holders

ORDERING INFORMATION

PRODUCT NAME	ORDER NUMBER	PACKAGE DESCRIPTION	COMPONENT PACKAGING
S2916 Tx-Rx Front -End Module	S2916	RoHS Compliant 38 Pin 5.3mmx5.5mmx0.9mm Surface Mount Module	-

REVISION HISTORY

Revision	Date	Description
Rev0p6	June, 2016	Preliminary Version, current S2916 meet SKY77916-11/-21/-31 application

REFERENCES

Smarter Micro MIPI Instruction

LEGAL DISCLAIMER

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