

DATA SHEET

SKY13404-466LF: 0.4-2.7 GHz SP10T Switch with GPIO Interface

Applications

- 2G/3G multimode cellular handsets (UMTS, CDMA2000, EDGE, GSM)
- Embedded data cards

Features

- Broadband frequency range: 0.4 to 2.7 GHz
- Single, positive DC power supply (2.5 to 3.3 V)
- Excellent Band 13 2nd harmonic rejection
- Integrated, low-pass harmonic filter for GSM transmit paths
- Integrated GPIO interface
- Any of eight TRX ports can be used for WCDMA transmit/receive or GSM receive functions
- Small QFN (26-pin, 2.6 x 3.4 mm) package (MSL1, 260 °C per JEDEC J-STD-020)



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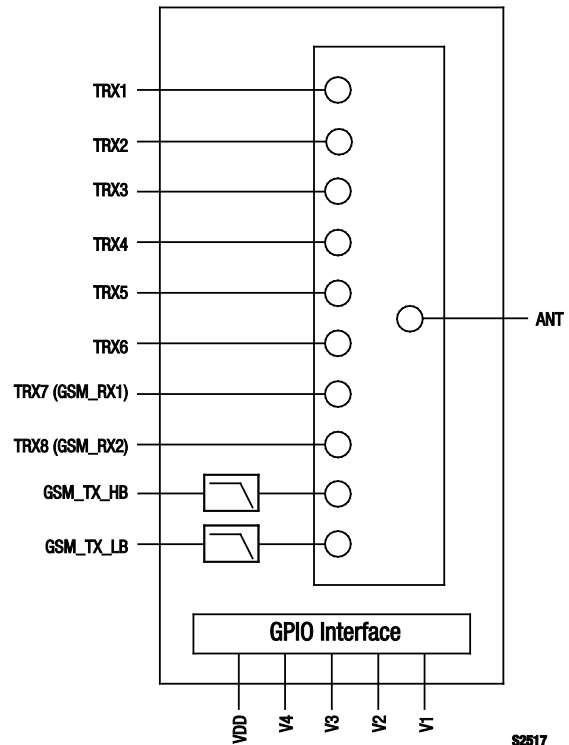


Figure 1. SKY13404-466LF Block Diagram

Description

The SKY13404-466LF is a Single Pole, Ten-Throw (SP10T) antenna switch with an integrated General Purpose Input/Output (GPIO) interface and dual low-pass harmonic filters. The switch has eight transmit/receive ports, any of which can be used for WCDMA transmit/receive or GSM receive functions.

Using advance switching technologies, the SKY13404-466LF maintains low insertion loss and high isolation for both transmit and receive switching paths. The switch also exhibits an excellent triple beat ratio and 2nd/3rd order modulation distortion performance. Band 13 2nd harmonic requirements can be met without the use of an external filter.

Switching is controlled by an integrated GPIO interface. Depending on the logic applied to the decoder, the antenna pin is connected to one of ten switched RF ports using a low insertion loss path, while the paths between the antenna pin and the other RF pins are in a high isolation state. No external DC blocking capacitors are required on the RF paths.

The SKY13404-466LF is manufactured in a compact, 2.6 x 3.4 mm, 26-pin Quad Flat No-Lead (QFN) package.

A functional block diagram is shown in Figure 1. The pin configuration and package are shown in Figure 2. Signal pin assignments and functional pin descriptions are provided in Table 1.

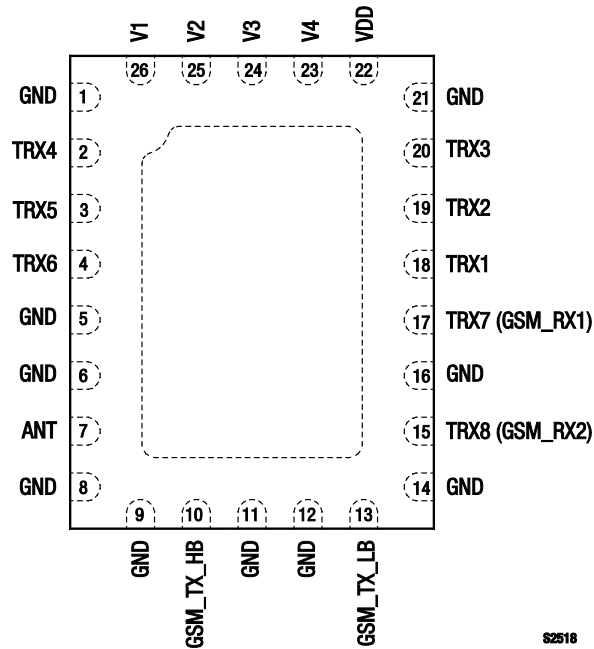


Figure 2. SKY13404-466LF Pinout – 26-Pin QFN (Top View)

Table 1. SKY13404-466LF Signal Descriptions

| Pin # | Name | Description | Pin # | Name | Description |
|-------|-----------|--|-------|----------------|----------------------------|
| 1 | GND | Ground | 14 | GND | Ground |
| 2 | TRX4 | RF input/output port 4 (dedicated to Band 13) | 15 | TRX8 (GSM_RX2) | RF input/output port 8 |
| 3 | TRX5 | RF input/output port 5 | 16 | GND | Ground |
| 4 | TRX6 | RF input/output port 6 | 17 | TRX7 (GSM_RX1) | RF input/output port 7 |
| 5 | GND | Ground | 18 | TRX1 | RF input/output port 1 |
| 6 | GND | Ground | 19 | TRX2 | RF input/output port 2 |
| 7 | ANT | Antenna RF port | 20 | TRX3 | RF input/output port 3 |
| 8 | GND | Ground | 21 | GND | Ground |
| 9 | GND | Ground | 22 | VDD | DC power supply |
| 10 | GSM_TX_HB | GSM high band transmit RF input port with integrated harmonic filter | 23 | V4 | DC input control voltage 4 |
| 11 | GND | Ground | 24 | V3 | DC input control voltage 3 |
| 12 | GND | Ground | 25 | V2 | DC input control voltage 2 |
| 13 | GSM_TX_LB | GSM low band transmit RF input port with integrated harmonic filter | 26 | V1 | DC input control voltage 1 |

Note: Bottom ground paddles must be connected to ground.

Table 2. SKY13404-466LF Absolute Maximum Ratings

| Parameter | Symbol | Minimum | Maximum | Units |
|-----------------------|------------|---------|---------|-------|
| RF input power | P_{IN} | | +36 | dBm |
| Power supply | | | 5 | V |
| DC control voltage | V_{CTRL} | | 2.7 | V |
| Storage temperature | T_{STG} | -40 | +125 | °C |
| Operating temperature | T_{OP} | -30 | +90 | °C |

Note: Exposure to maximum rating conditions for extended periods may reduce device reliability. There is no damage to device with only one parameter set at the limit and all other parameters set at or below their nominal value. Exceeding any of the limits listed here may result in permanent damage to the device.

CAUTION: Although this device is designed to be as robust as possible, Electrostatic Discharge (ESD) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions should be used at all times.

Electrical and Mechanical Specifications

The absolute maximum ratings of the SKY13404-466LF are provided in Table 2. Electrical specifications are provided in Tables 3 through 6. Table 7 provides the control logic for the SKY13404-466LF.

Typical performance characteristics of the SKY13404-466LF are illustrated in Figures 3 to 10. The isolation matrix shown in Table 8 provides the port-to-port isolation for all available RF states at three different frequencies: 915 MHz, 1910 MHz, and 2700 MHz.

Figure 11 illustrates the test setup used to measure data for Figure 7. This industry standardized test is used to simulate the WCDMA Band 1 linearity of the antenna switch. A +20 dBm Continuous Wave (CW) signal, f_{FUND} , is sequentially applied to the TRX1 through TRX8 ports, while a -15 dBm CW blocker signal, f_{BLK} , is applied to the ANT port.

The resulting 3rd Order Intermodulation Distortion (IMD3), f_{RX} , is measured over all phases of f_{FUND} . The SKY13404-466LF exhibits exceptional performance for all TRX ports.

Table 3. SKY13404-466LF Electrical Specifications (Note 1) (1 of 2)
(V_{DD} = 2.85 V, V₁ = V₂ = V₃ = V₄ = 0/1.8 V, T_{OP} = +25 °C, P_{IN} = 0 dBm, Characteristic Impedance [Z₀] = 50 Ω, Unless Otherwise Noted)

| Parameter | Symbol | Test Condition | Min | Typical | Max | Units |
|--|---------------------------|--|-----|---------|-----|-------|
| RF Specifications | | | | | | |
| Insertion loss: ANT to TRX1 through TRX8 ports | IL | 824 to 960 MHz | | 0.5 | 0.7 | dB |
| | | 1710 to 2170 MHz | | 0.6 | 0.8 | dB |
| | | 2300 to 2690 MHz | | 0.9 | 1.1 | dB |
| Insertion loss: ANT to TRX4 port (Note 2) | IL | 704 to 787 MHz | | 0.4 | 0.6 | dB |
| Insertion loss: ANT to GSM_TX_LB port | IL | 824 to 915 MHz | | 1.3 | 1.5 | dB |
| Insertion loss: ANT to GSM_TX_HB port | IL | 1710 to 1910 MHz | | 1.2 | 1.4 | dB |
| Isolation (TRX1/2/3/7/8 to TRX4/5/6 ports) | ISO | 824 to 1910 MHz | 40 | 43 | | dB |
| Isolation (GSM_TX_LB to TRX1 through TRX8 ports) | ISO | 824 to 915 MHz | 40 | 43 | | dB |
| Isolation (GSM_TX_HB to TRX1 through TRX8 ports) | ISO | 1710 to 1910 MHz | 37 | 40 | | dB |
| Isolation (TRX4 to TRX6 port) | ISO | 824 to 1910 MHz | 27 | 30 | | dB |
| Isolation (TRX1 to TRX2, TRX2 to TRX3, TRX4 to TRX5, TRX5 to TRX6, and TRX7 to TRX8 ports) | ISO | 824 to 1910 MHz | 21 | 24 | | dB |
| Isolation (ANT to TRX8 [TRX7 “on”]) | ISO | 1805 to 1990 MHz | 33 | 36 | | dB |
| Isolation (ANT to TRX7 [TRX8 “on”]) | ISO | 1805 to 1990 MHz | 33 | 36 | | dB |
| Band 13 2 nd harmonic | B13 2fo | P _{IN} = +25 dBm, f = 787 MHz, TRX1 to TRX8 | | -85 | | dBm |
| Harmonics | UMTS _{LOW_BAND} | f = 824 to 915 MHz, P _{IN} = +27 dBm | | -74 | -68 | dBm |
| | UMTS _{HIGH_BAND} | f = 1710 to 1950 MHz, P _{IN} = +27 dBm | | -68 | -62 | dBm |
| | GSM _{LOW_BAND} | GSM_TX_LB port, P _{IN} = +35 dBm | | -45 | -36 | dBm |
| | GSM _{HIGH_BAND} | GSM_TX_HB port, P _{IN} = +33 dBm | | -44 | -36 | dBm |
| Attenuation (GSM_TX_LB port) | | GSM850: | | | | |
| | | 2f | 25 | 30 | dB | |
| | | 3f | 25 | 28 | dB | |
| | | >4f | | 20 | dB | |
| | | EGSM900: | | | | |
| | | 2f | 25 | 28 | dB | |
| 3f | 22 | 25 | dB | | | |
| >4f | | 20 | dB | | | |
| Attenuation (GSM_TX_HB port) | | DCS1800: | | | | |
| | | 2f | 25 | 30 | dB | |
| | | 3f | 25 | 28 | dB | |
| | | >4f | | 20 | dB | |
| | | PCS1900: | | | | |
| | | 2f | 25 | 28 | dB | |
| 3f | 25 | 28 | dB | | | |
| >4f | | 20 | dB | | | |

Table 3. SKY13404-466LF Electrical Specifications (Note 1) (2 of 2)

(V_{DD} = 2.85 V, V₁ = V₂ = V₃ = V₄ = 0/1.8 V, T_{OP} = +25 °C, P_{IN} = 0 dBm, Characteristic Impedance [Z₀] = 50 Ω, Unless Otherwise Noted)

| Parameter | Symbol | Test Condition | Min | Typical | Max | Units |
|--------------------------------------|---|----------------------------------|-------|---------|------|-------|
| RF Specifications (continued) | | | | | | |
| Return loss | IS11I | 0.4 to 2.2 GHz | 14 | 18 | | dB |
| 2nd Order Input Intercept Point | IIP2 | AWS, PCS, IMT to CDMA2000 modes | +95.5 | +105.0 | | dBm |
| 2nd Order Intermodulation Distortion | IMD2 | UMTS mode (Note 3) | | -110 | -105 | dBm |
| 3rd Order Intermodulation Distortion | IMD3 | UMTS mode (Note 4) | | -110 | -105 | dBm |
| Triple Beat Ratio (Note 5) | TBR | 650 to 900 MHz | 81 | 90 | | dBc |
| | | 1710 to 2155 MHz | 81 | 90 | | dBc |
| 1 dB Input Compression Point | IP1dB | GSM_TX_LB port, 824 to 915 MHz | +40 | | | dBm |
| | | GSM_TX_HB port, 1710 to 1910 MHz | +39 | | | dBm |
| Switching speed | | 10/90% RF | | 3 | 5 | μs |
| DC Specifications | | | | | | |
| Supply voltage | V _{DD} | | 2.50 | 2.85 | 3.30 | V |
| Supply current | I _{DD} | | | 50 | 100 | μA |
| Control voltage: High Low | V ₁ , V ₂ , V ₃ , V ₄ | | 1.35 | 1.80 | 2.50 | V |
| | | | 0 | | 0.45 | V |
| Control current: High Low | | | | 5 | 10 | μA |
| | | | | | | μA |

Note 1: Performance is guaranteed only under the conditions listed in this Table.

Note 2: TRX4 is a dedicated Band 13 port.

Note 3: See Table 4.

Note 4: See Table 5.

Note 5: See Table 6.

Table 4. IP2 Frequencies and Power Levels

| Band | Transmit Frequency (MHz) | Transmit Power (dBm) | Frequency Blocker 1 (MHz) | Frequency Blocker 2 (MHz) | Power Blocker (dBm) | Receive Frequency (MHz) |
|------|--------------------------|----------------------|---------------------------|---------------------------|---------------------|-------------------------|
| 1 | 1950.0 | +20 | 190 | 4090 | -15 | 2140.0 |
| 2 | 1880.0 | +20 | 80 | 3840 | -15 | 1960.0 |
| 4 | 1732.0 | +20 | 400 | 3864 | -15 | 2132.0 |
| 5 | 836.5 | +20 | 45 | 1718 | -15 | 881.5 |
| 8 | 897.0 | +20 | 45 | 1839 | -15 | 942.0 |

Table 5. IP3 Frequencies and Power Levels

| Band | Transmit Frequency (MHz) | Transmit Power (dBm) | Frequency Blocker 1 (MHz) | Frequency Blocker 2 (MHz) | Power Blocker (dBm) | Receive Frequency (MHz) |
|------|--------------------------|----------------------|---------------------------|---------------------------|---------------------|-------------------------|
| 1 | 1950.0 | +20 | 1760.0 | N/A | -15 | 2140.0 |
| 2 | 1880.0 | +20 | 1800.0 | N/A | -15 | 1960.0 |
| 4 | 1732.0 | +20 | 1332.0 | N/A | -15 | 2132.0 |
| 5 | 836.5 | +20 | 791.5 | N/A | -15 | 881.5 |
| 8 | 897.0 | +20 | 852.0 | N/A | -15 | 942.0 |

Table 6. Triple Beat Ratio Frequencies and Power Levels

| Band | Transmit Frequency 1 (MHz) | Transmit Power 1 (dBm) | Transmit Frequency 2 (MHz) | Transmit Power 2 (dBm) | Frequency Blocker ANT (MHz) | Power Blocker (dBm) | Triple Beat Product Frequency (MHz) |
|------|----------------------------|------------------------|----------------------------|------------------------|-----------------------------|---------------------|-------------------------------------|
| 2 | 1880.0 | +21.5 | 1881.0 | +21.5 | 1960.0 | -30 | 1960.0 ± 1 |
| 5 | 836.5 | +21.5 | 881.5 | +21.5 | 881.5 | -30 | 881.5 ± 1 |

Table 7. SKY13404-466LF Mode Control Logic

| Insertion Loss State | V1 (Pin 26) | V2 (Pin 25) | V3 (Pin 24) | V4 (Pin 23) |
|--|-------------|-------------|-------------|-------------|
| Standby (all ports in isolation state) | 0 | 0 | 0 | 0 |
| ANT to GSM_TX_LB | 1 | 1 | 0 | 0 |
| ANT to GSM_TX_HB | 1 | 0 | 0 | 0 |
| ANT to TRX7 | 0 | 1 | 1 | 0 |
| ANT to TRX8 | 0 | 1 | 0 | 0 |
| ANT to TRX1 | 0 | 0 | 1 | 0 |
| ANT to TRX2 | 1 | 0 | 1 | 0 |
| ANT to TRX3 | 1 | 1 | 1 | 0 |
| ANT to TRX4 | 1 | 0 | 1 | 1 |
| ANT to TRX5 | 1 | 1 | 1 | 1 |
| ANT to TRX6 | 1 | 0 | 0 | 1 |

Typical Performance Characteristics

($V_{DD} = 2.85\text{ V}$, $V_1 = V_2 = V_3 = V_4 = 0/1.8\text{ V}$, $T_{OP} = +25\text{ }^\circ\text{C}$, $P_{IN} = 0\text{ dBm}$, Characteristic Impedance [Z_0] = $50\ \Omega$, Unless Otherwise Noted)

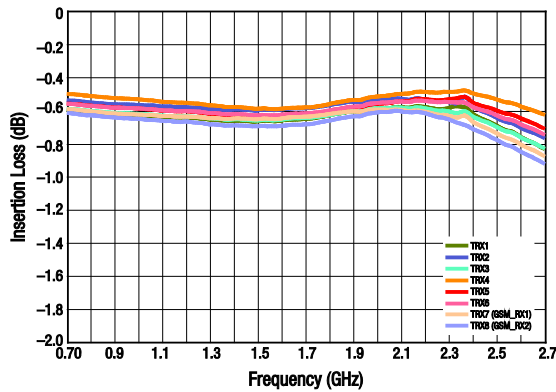


Figure 3. Insertion Loss vs Frequency (ANT to All TRX Ports)

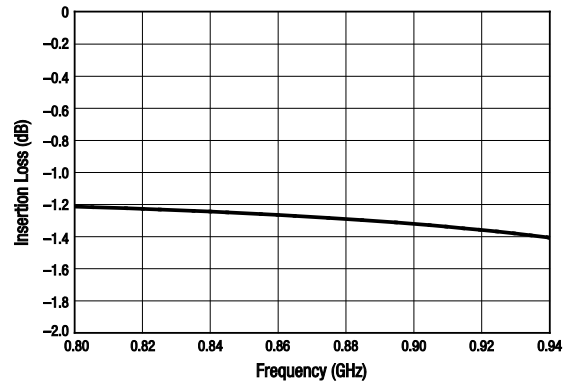


Figure 4. Insertion Loss vs Frequency (ANT to GSM_TX_LB Port)

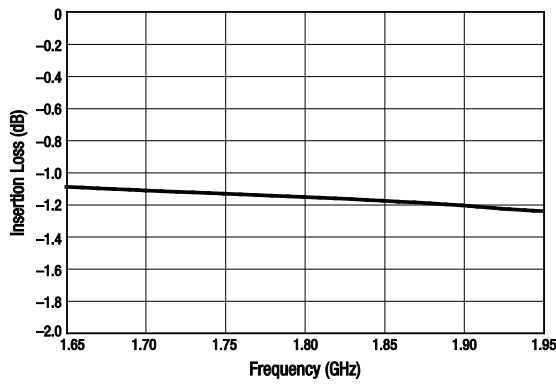


Figure 5. Insertion Loss vs Frequency (ANT to GSM_TX_HB Port)

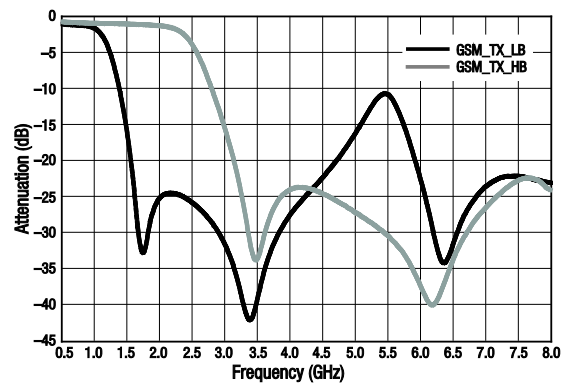


Figure 6. Attenuation vs Frequency (ANT to GSM_TX_HB/LB Ports)

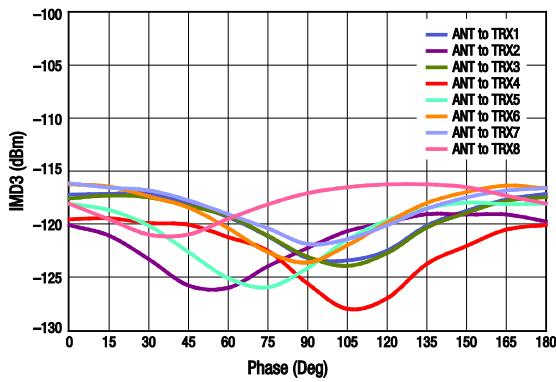


Figure 7. 3rd Order Intermodulation Distortion vs Phase, TRX Ports ($f_{FUND} = 1.95\text{ GHz}$ @ $+20\text{ dBm}$, $f_{BLK} = 1.786\text{ GHz}$ @ -15 dBm , $f_{rx} = 2.14\text{ GHz}$)

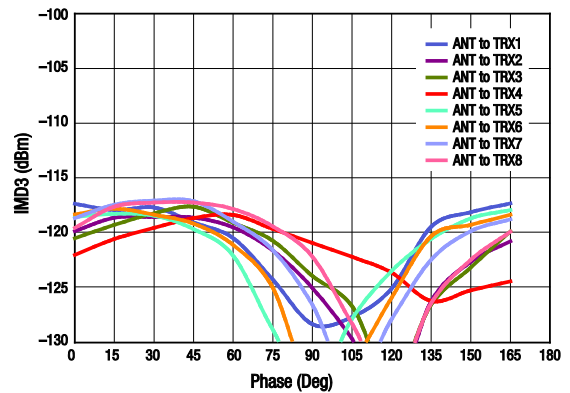


Figure 8. 3rd Order Intermodulation Distortion vs Phase, TRX Ports ($f_{FUND} = 836.5\text{ GHz}$ @ $+20\text{ dBm}$, $f_{BLK} = 791.5\text{ GHz}$ @ -15 dBm , $f_{rx} = 881.5\text{ GHz}$)

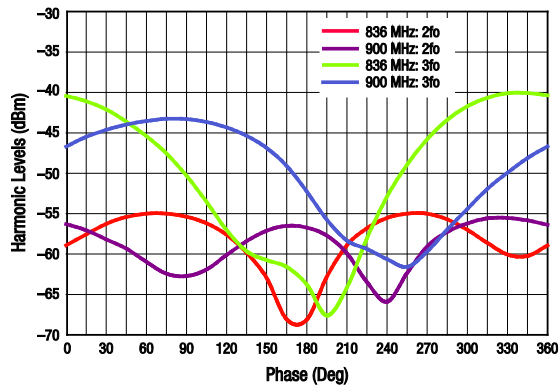


Figure 9. Harmonics vs Phase
(ANT to GSM_TX_LB, P_{IN} = +35 dBm, 5:1 VSWR Mismatch)

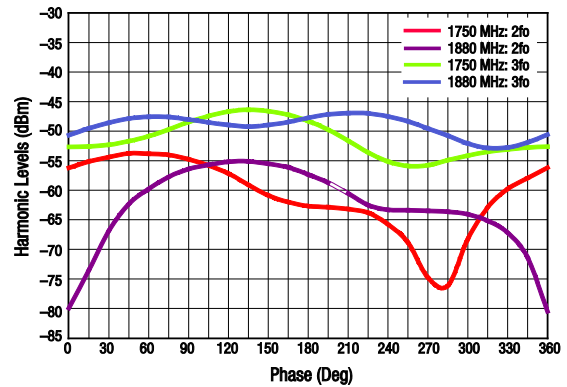


Figure 10. Harmonics vs Phase
(ANT to GSM_TX_HB, P_{IN} = +33 dBm, 5:1 VSWR Mismatch)

Table 8. ANT to TX/TRX Isolation Matrix (1 of 2)

| "On" Port | Freq. (GHz) | Isolation | | | | | | | | | |
|-----------|-------------|--------------------|--------------------|---------------|---------------|---------------|--------------|--------------|--------------|-------------------------|-------------------------|
| | | GSM_TX_LB (Pin 13) | GSM_TX_HB (Pin 10) | TRX1 (Pin 18) | TRX2 (Pin 19) | TRX3 (Pin 20) | TRX4 (Pin 2) | TRX5 (Pin 3) | TRX6 (Pin 4) | TRX7 (GSM_RX1) (Pin 17) | TRX8 (GSM_RX2) (Pin 15) |
| TXLB | 915 | - | -27 | -53 | -53 | -55 | -58 | -62 | -56 | -51 | -43 |
| TXLB | 1910 | - | -35 | -55 | -58 | -62 | -63 | -61 | -59 | -52 | -47 |
| TXLB | 2700 | - | -38 | -55 | -58 | -62 | -62 | -60 | -58 | -52 | -48 |
| TXHB | 915 | -30 | - | -55 | -55 | -57 | -56 | -60 | -53 | -55 | -52 |
| TXHB | 1910 | -37 | - | -50 | -48 | -50 | -47 | -49 | -45 | -49 | -47 |
| TXHB | 2700 | -37 | - | -54 | -52 | -53 | -49 | -52 | -48 | -54 | -53 |
| TRX1 | 915 | -56 | -36 | - | -28 | -36 | -56 | -62 | -54 | -32 | -44 |
| TRX1 | 1910 | -57 | -31 | - | -23 | -31 | -46 | -49 | -45 | -26 | -37 |
| TRX1 | 2700 | -63 | -34 | - | -20 | -28 | -42 | -45 | -41 | -23 | -34 |
| TRX2 | 915 | -53 | -36 | -31 | - | -30 | -55 | -61 | -54 | -38 | -44 |
| TRX2 | 1910 | -60 | -31 | -26 | - | -24 | -46 | -49 | -45 | -32 | -37 |
| TRX2 | 2700 | -71 | -34 | -23 | - | -21 | -42 | -45 | -41 | -29 | -34 |
| TRX3 | 915 | -52 | -36 | -38 | -32 | - | -54 | -61 | -54 | -41 | -45 |
| TRX3 | 1910 | -62 | -31 | -32 | -26 | - | -45 | -48 | -45 | -35 | -38 |
| TRX3 | 2700 | -74 | -34 | -29 | -24 | - | -41 | -44 | -41 | -32 | -34 |
| TRX4 | 915 | -51 | -36 | -58 | -56 | -57 | - | -29 | -36 | -59 | -59 |
| TRX4 | 1910 | -65 | -31 | -51 | -49 | -50 | - | -24 | -31 | -51 | -51 |
| TRX4 | 2700 | -69 | -33 | -47 | -45 | -47 | - | -21 | -27 | -47 | -47 |
| TRX5 | 915 | -51 | -37 | -58 | -56 | -57 | -33 | - | -30 | -58 | -58 |
| TRX5 | 1910 | -63 | -31 | -51 | -48 | -50 | -27 | - | -24 | -51 | -50 |
| TRX5 | 2700 | -73 | -34 | -47 | -45 | -47 | -24 | - | -21 | -47 | -46 |

Table 8. ANT to TX/TRX Isolation Matrix (2 of 2)

| "On" Port | Freq. (GHz) | Isolation | | | | | | | | | |
|----------------|-------------|--------------------|--------------------|---------------|---------------|---------------|--------------|--------------|--------------|-------------------------|-------------------------|
| | | GSM_TX_LB (Pin 13) | GSM_TX_HB (Pin 10) | TRX1 (Pin 18) | TRX2 (Pin 19) | TRX3 (Pin 20) | TRX4 (Pin 2) | TRX5 (Pin 3) | TRX6 (Pin 4) | TRX7 (GSM_RX1) (Pin 17) | TRX8 (GSM_RX2) (Pin 15) |
| TRX6 | 915 | -50 | -37 | -57 | -55 | -57 | -38 | -33 | - | -58 | -57 |
| TRX6 | 1910 | -62 | -32 | -50 | -48 | -50 | -32 | -27 | - | -50 | -50 |
| TRX6 | 2700 | -79 | -34 | -47 | -45 | -46 | -29 | -24 | - | -47 | -46 |
| TRX7 (GSM_RX1) | 915 | -72 | -36 | -29 | -35 | -40 | -56 | -63 | -55 | - | -46 |
| TRX7 (GSM_RX1) | 1910 | -55 | -31 | -23 | -30 | -34 | -47 | -50 | -45 | - | -39 |
| TRX7 (GSM_RX1) | 2700 | -56 | -34 | -20 | -27 | -31 | -43 | -46 | -41 | - | -37 |
| TRX8 (GSM_RX2) | 915 | -46 | -35 | -39 | -40 | -43 | -57 | -63 | -55 | -35 | - |
| TRX8 (GSM_RX2) | 1910 | -48 | -31 | -33 | -34 | -37 | -47 | -50 | -46 | -29 | - |
| TRX8 (GSM_RX2) | 2700 | -47 | -34 | -30 | -31 | -34 | -43 | -46 | -41 | -26 | - |

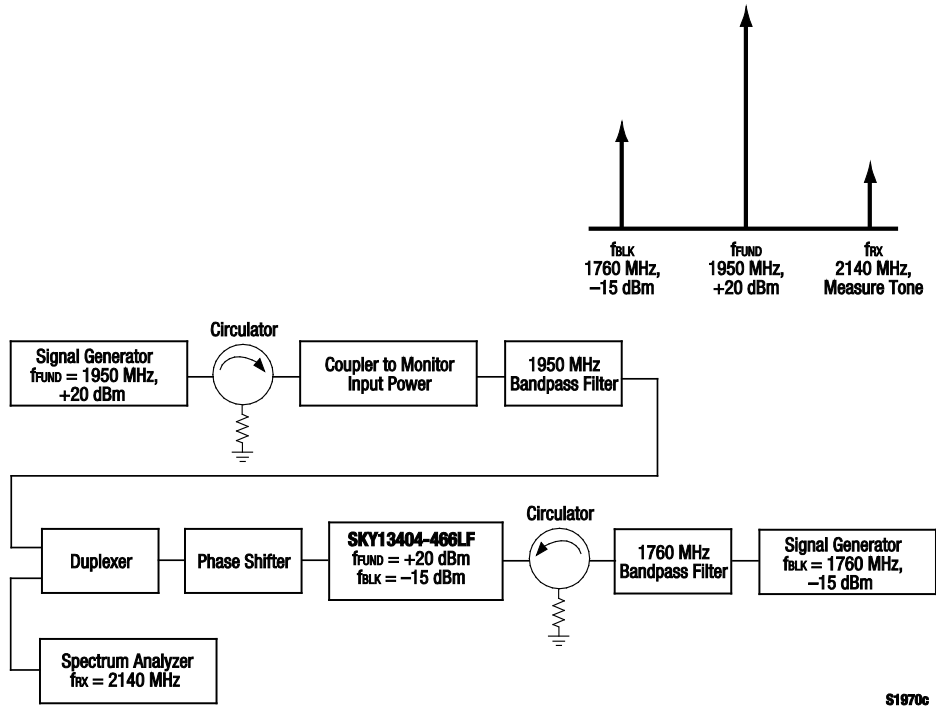


Figure 11. 3rd Order Intermodulation Test Setup

Evaluation Board Description

The SKY13404-466LF Evaluation Board is used to test the performance of the SKY13404-466LF SP10T Switch. An Evaluation Board schematic diagram is provided in Figure 12. A recommended ESD protection circuit diagram is provided in Figure 13. An assembly drawing for the Evaluation Board is shown in Figure 14.

Package Dimensions

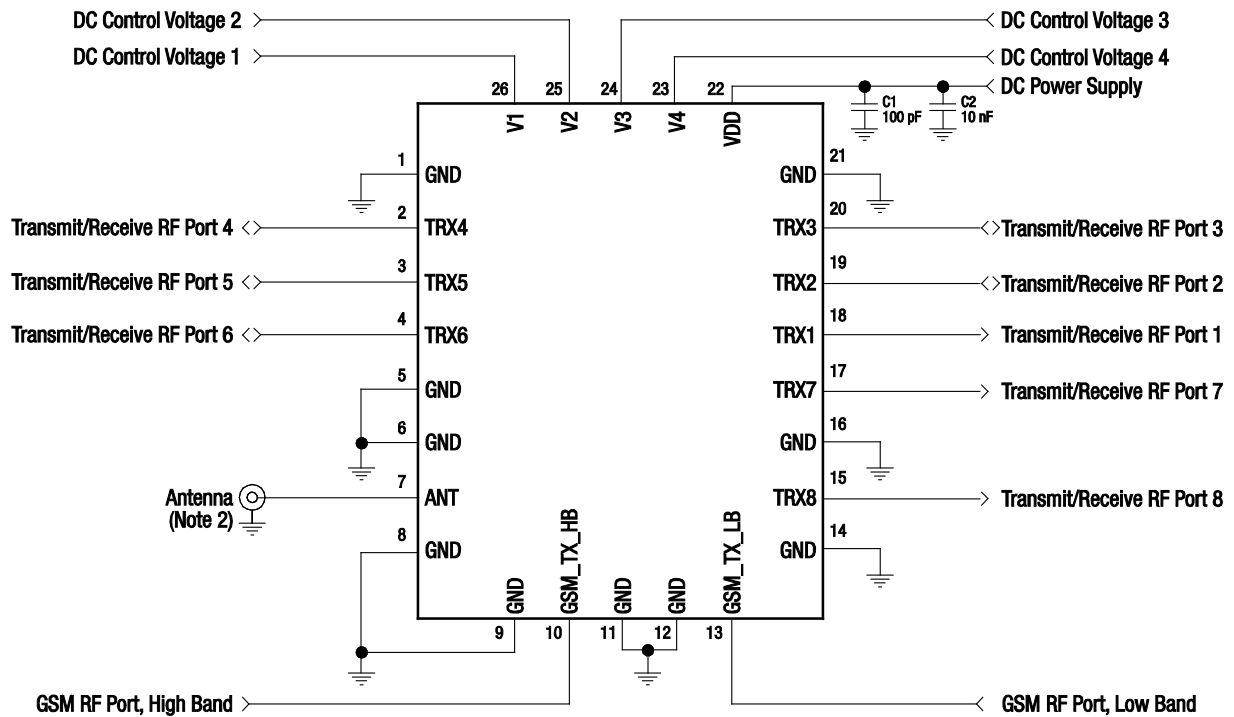
The PCB layout footprint for the SKY13404-466LF is provided in Figure 15. Typical case markings are shown in Figure 16. Package dimensions for the 26-pin QFN are shown in Figure 17, and tape and reel dimensions are provided in Figure 18.

Package and Handling Information

Instructions on the shipping container label regarding exposure to moisture after the container seal is broken must be followed. Otherwise, problems related to moisture absorption may occur when the part is subjected to high temperature during solder assembly.

THE SKY13404-466LF is rated to Moisture Sensitivity Level 1 (MSL1) at 260 °C. It can be used for lead or lead-free soldering. For additional information, refer to the Skyworks Application Note, *Solder Reflow Information*, document number 200164.

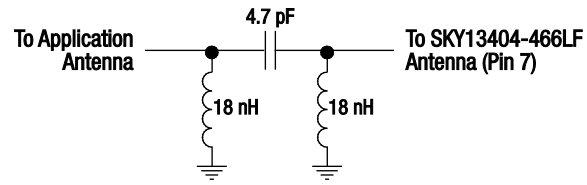
Care must be taken when attaching this product, whether it is done manually or in a production solder reflow environment. Production quantities of this product are shipped in a standard tape and reel format.



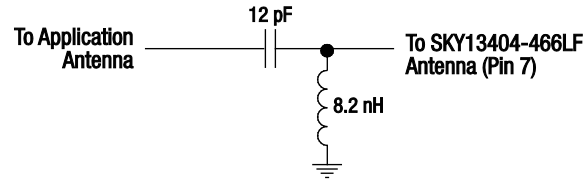
Note 1: Some component labels may be different than the corresponding component symbol shown here. Component values, however, are accurate as of the date of this Data Sheet.
 Note 2: See Figure 22 for ESD protection circuit.

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Figure 12. SKY13404-466LF Evaluation Board Schematic



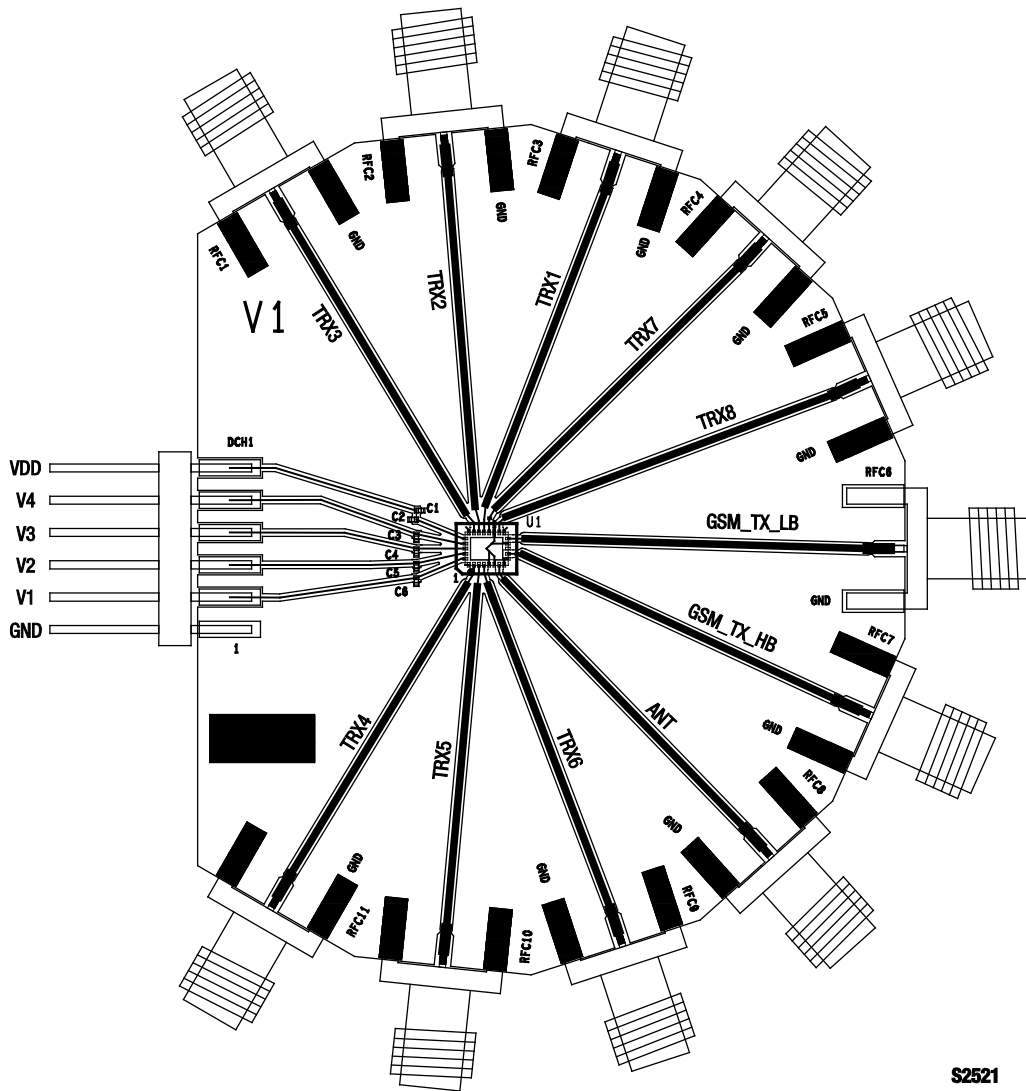
ESD Circuit 1



ESD Circuit 2

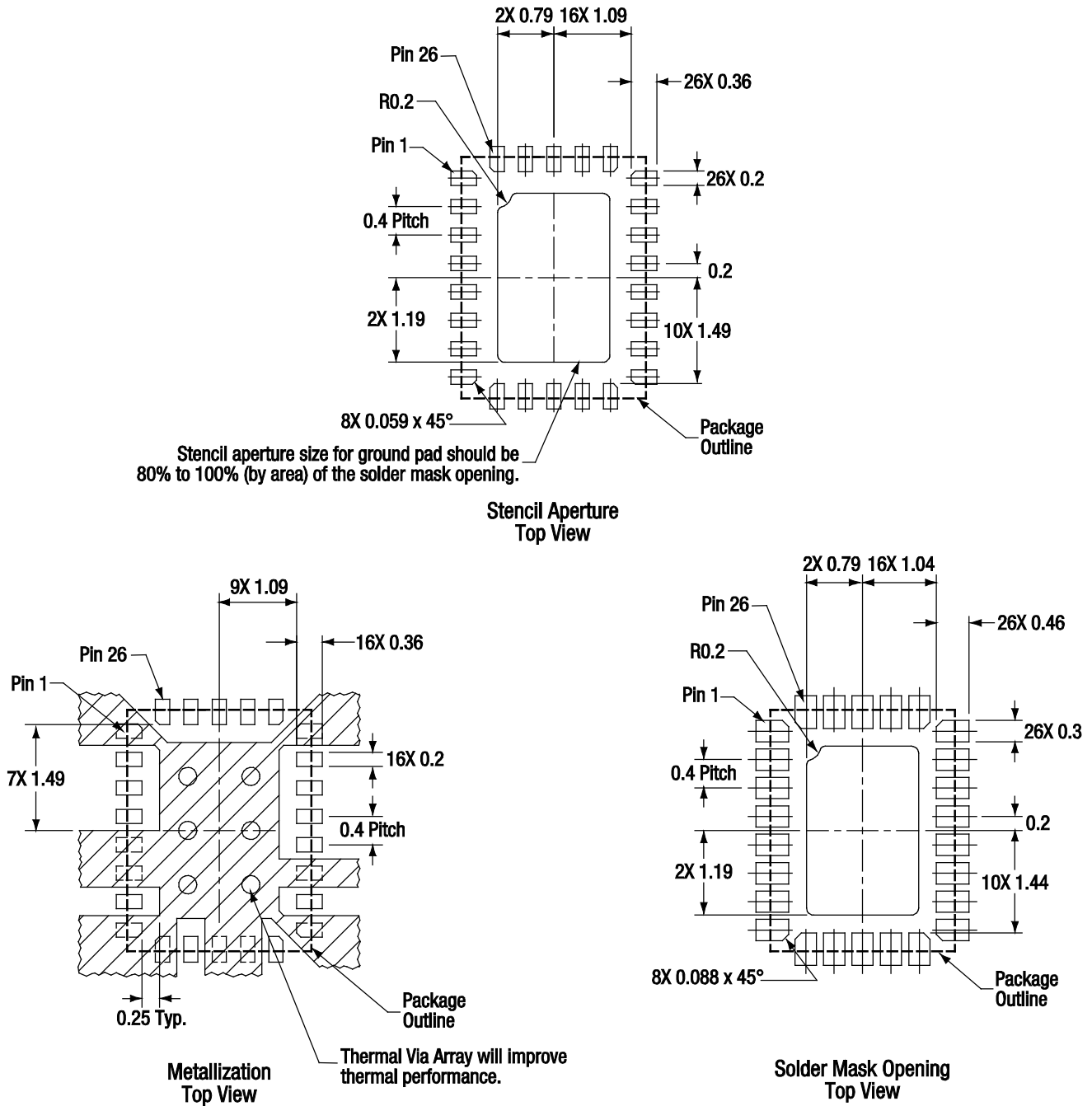
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Figure 13. SKY13404-466LF Recommended ESD Protection Circuits



S2521

Figure 14. SKY13404-466LF Evaluation Board Assembly Diagram



All dimensions are in millimeters

S2701

Figure 15. SKY13404-466LF PCB Layout Footprint (Top View)

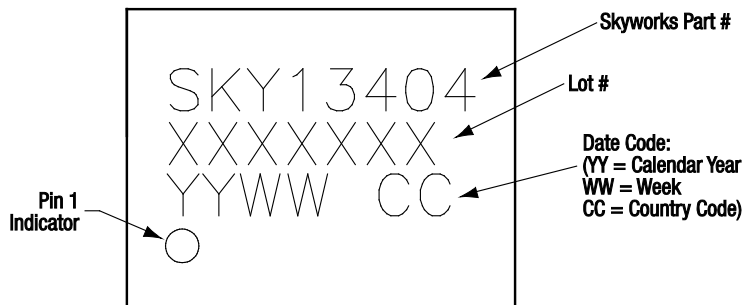
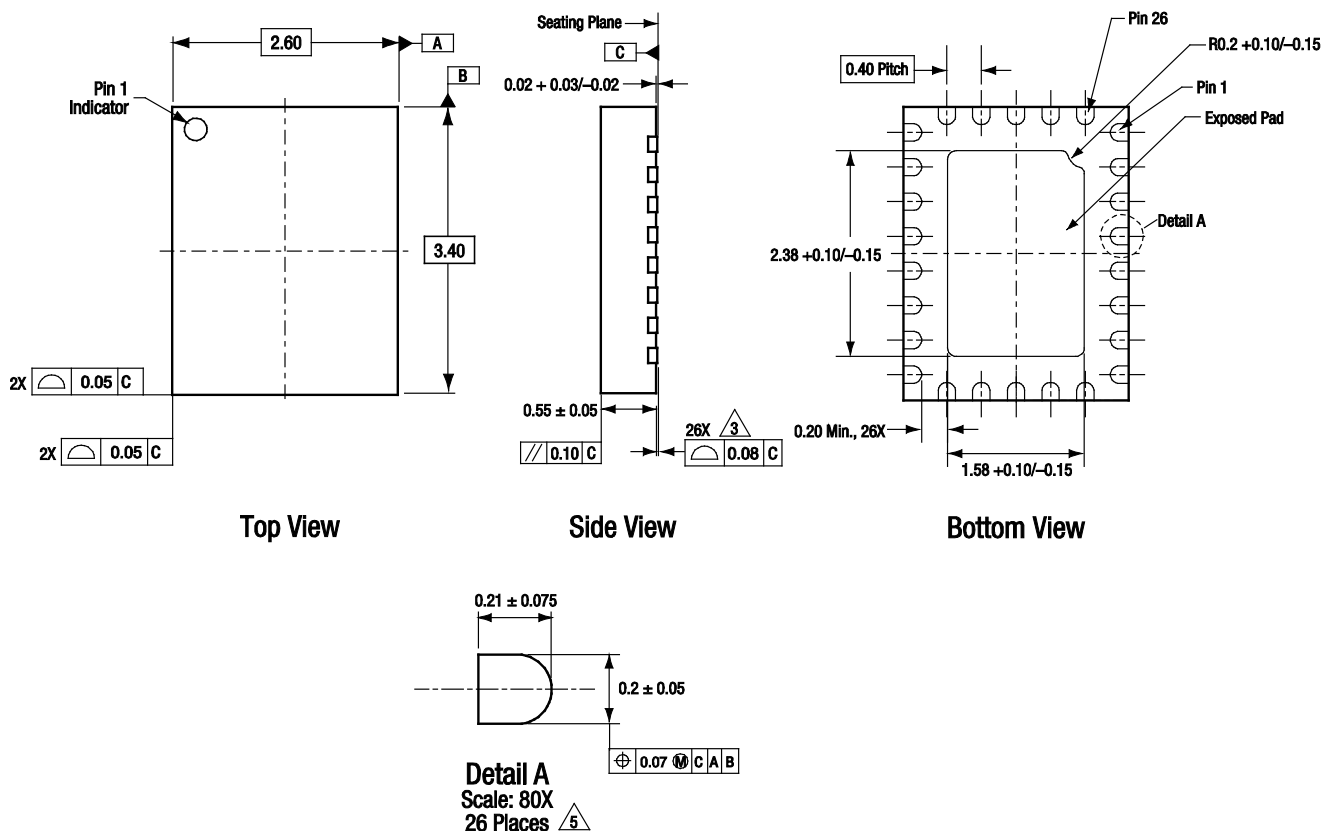


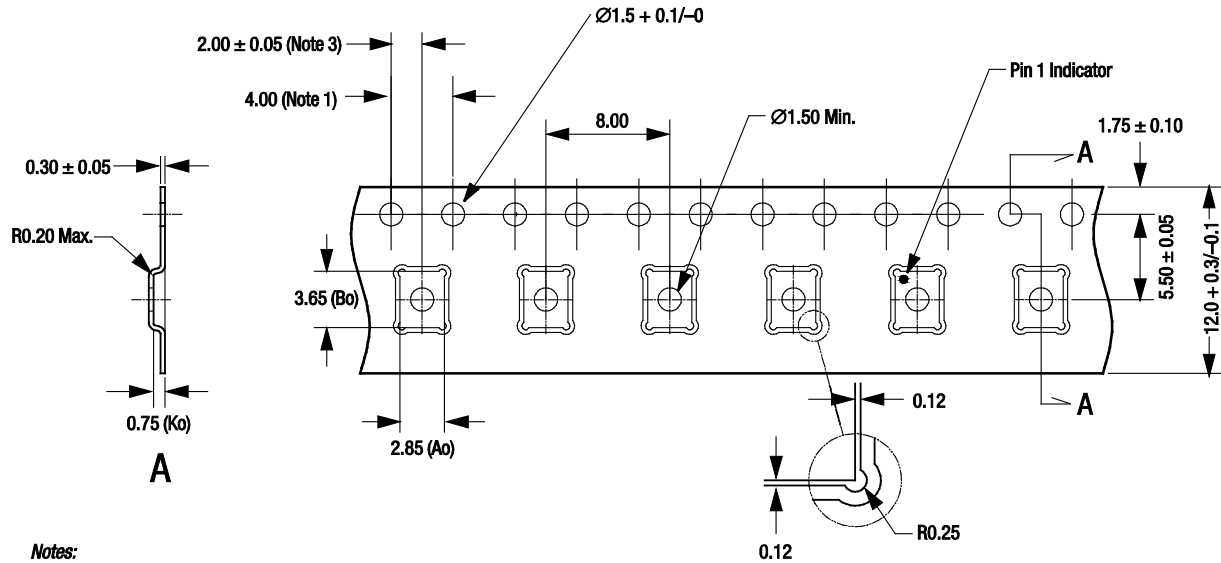
Figure 16. Typical Part Markings (Top View)



All measurements are in millimeters.
 Dimensioning and tolerancing according to ASME Y14.5M-1994.
 Coplanarity applies to the exposed bottom surface metalization, as well as the terminals.
 Plating requirement per source control drawing (SCD) 2504.

S2314

Figure 17. SKY13404-466LF 26-Pin QFN Package Dimensions



Notes:

1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Carrier tape material: black conductive polystyrene or polycarbonate.
3. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.
4. Cover tape material: transparent conductive material with 9.30 mm width.
5. All measurements are in millimeters.

S2951

Figure 18. SKY13404-466LF Tape and Reel Dimensions

Ordering Information

| Model Name | Manufacturing Part Number | Evaluation Board Part Number |
|---|---------------------------|------------------------------|
| SKY13404-466LF 0.4-2.2 GHz SP10T Switch | SKY13404-466LF | SKY13404-466LF-EVB |

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