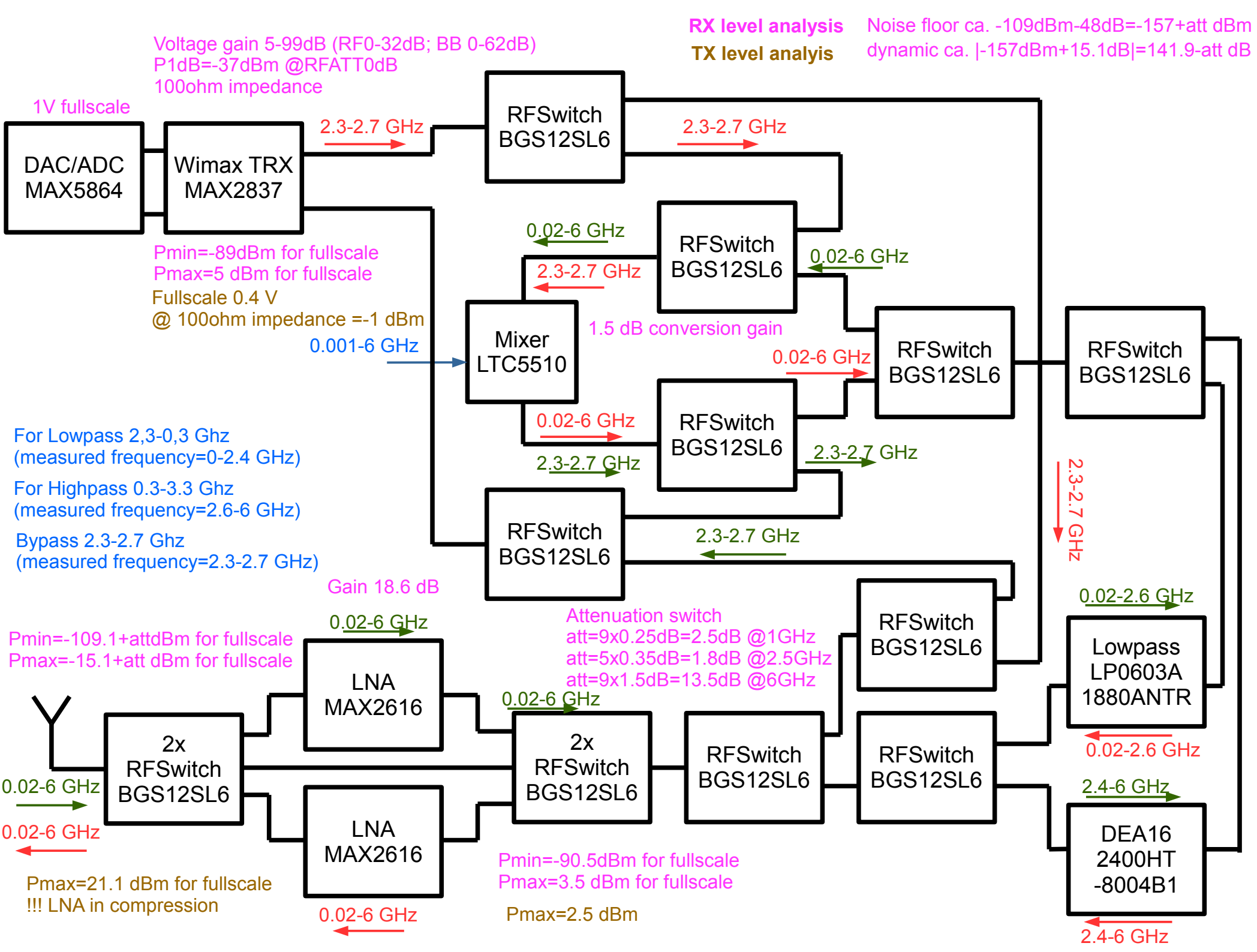
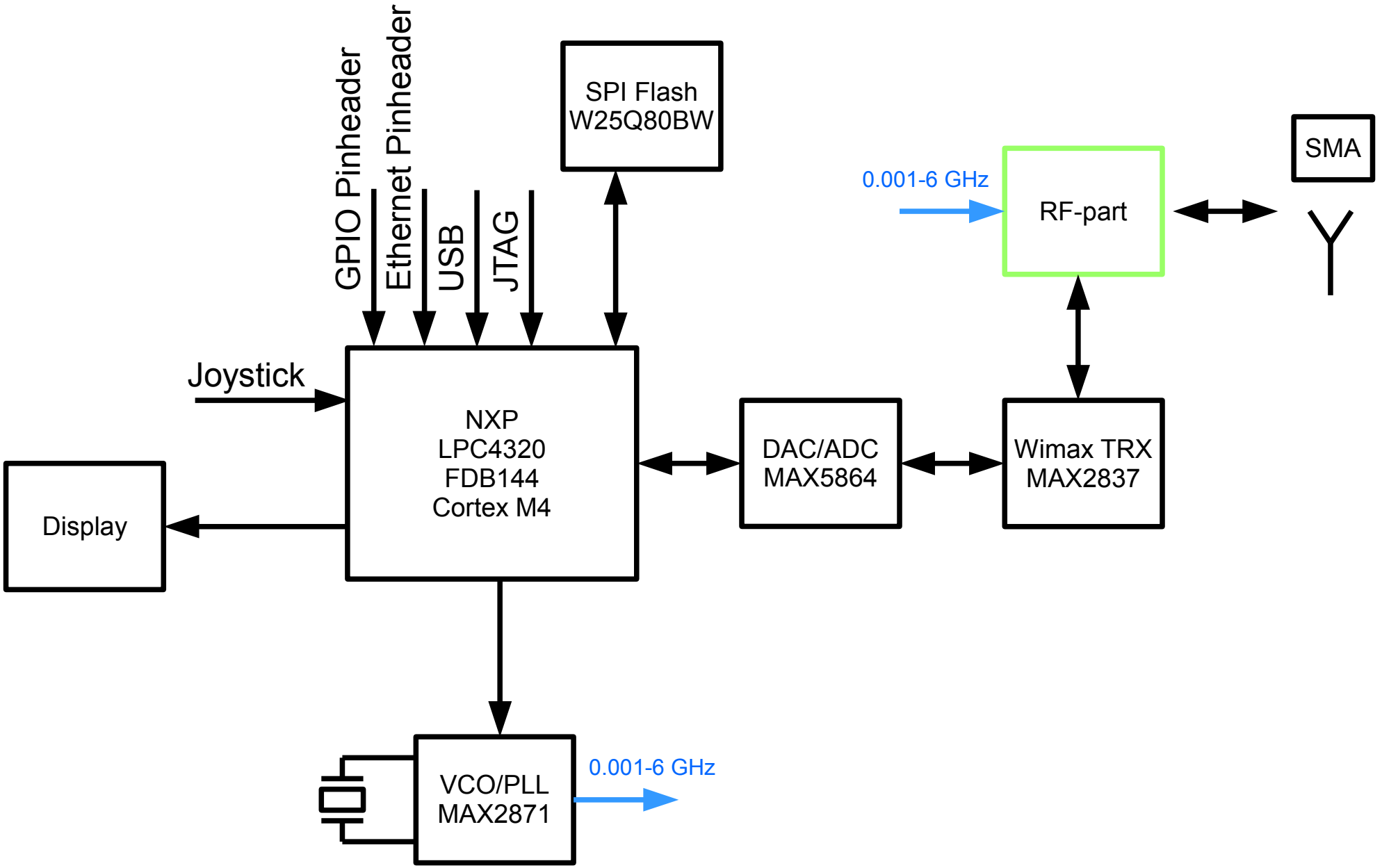
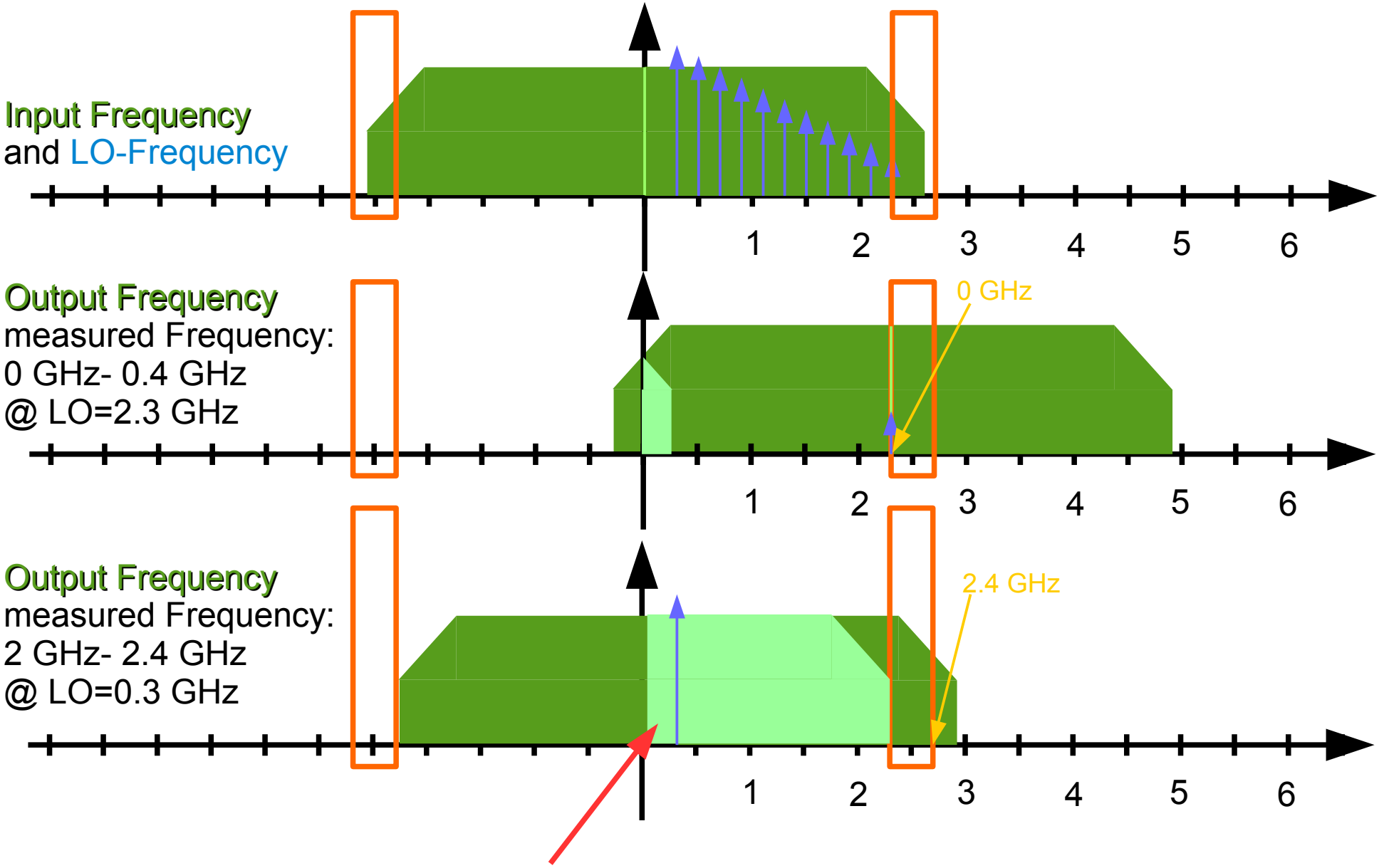

RX level analysis
TX level analysis
Noise floor ca. -109dBm-48dB=-157+att dBm
dynamic ca. |-157dBm+15.1dB|=141.9-att dB
Voltage gain 5-99dB (RF0-32dB; BB 0-62dB)
P1dB=-37dBm @RFATT0dB
100ohm impedance
1V fullscale
DAC/ADC MAX5864
Wimax TRX MAX2837
2.3-2.7 GHz
RFSwitch BGS12SL6
Pmin=-89dBm for fullscale
Pmax=5 dBm for fullscale
Fullscale 0.4 V
@ 100ohm impedance =-1 dBm
0.001-6 GHz
Mixer LTC5510
1.5 dB conversion gain
0.02-6 GHz
For Lowpass 2,3-0,3 Ghz
(measured frequency=0-2.4 GHz)
For Highpass 0.3-3.3 Ghz
(measured frequency=2.6-6 GHz)
Bypass 2.3-2.7 Ghz
(measured frequency=2.3-2.7 GHz)
Gain 18.6 dB
Pmin=-109.1+attdBm for fullscale
Pmax=-15.1+att dBm for fullscale
LNA MAX2616
2x RFSwitch BGS12SL6
Attenuation switch
att=9x0.25dB=2.5dB @1GHz
att=5x0.35dB=1.8dB @2.5GHz
att=9x1.5dB=13.5dB @6GHz
Pmax=21.1 dBm for fullscale
!!! LNA in compression
Pmin=-90.5dBm for fullscale
Pmax=3.5 dBm for fullscale
Pmax=2.5 dBm
Lowpass LP0603A 1880ANTR
0.02-2.6 GHz
2.4-6 GHz
DEA16 2400HT -8004B1


GPIO Pinheader
Ethernet Pinheader
USB
JTAG
SPI Flash
W25Q80BW
0.001-6 GHz
RF-part
SMA
Joystick
NXP
LPC4320
FDB144
Cortex M4
DAC/ADC
MAX5864
Wimax TRX
MAX2837
Display
VCO/PLL
MAX2871
0.001-6 GHz

# Low pass Filter active 0-2.4 GHz

Wimax TRX receiving frequency 2.3 GHz- 2.7 GHz

LO Frequency

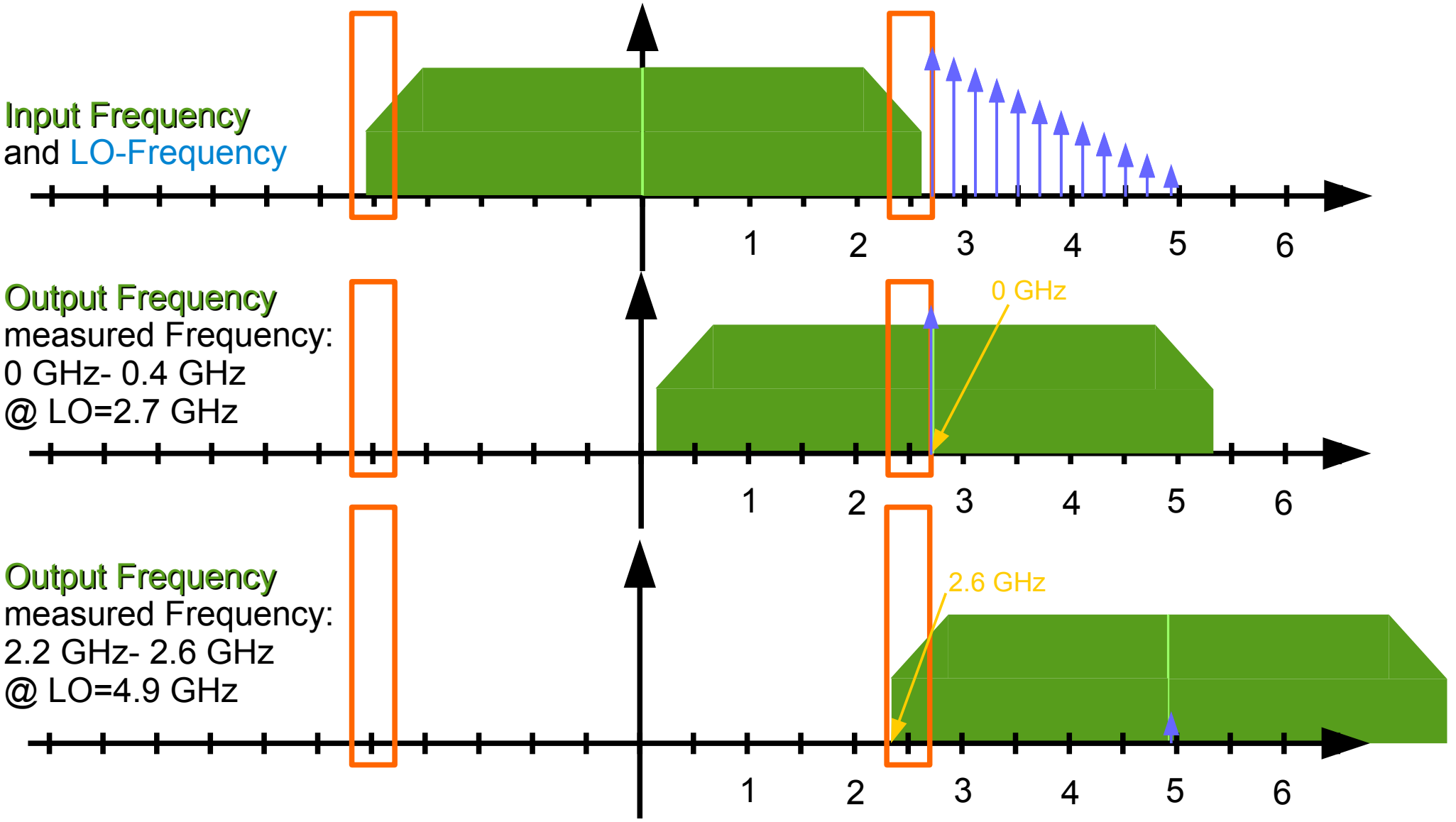



The harmonics of the Synthesizer is are a big problem here!!!!!!

# Low pass Filter active 0-2.6 GHz (second possibility)

Wimax TRX receiving frequency 2.3 GHz- 2.7 GHz

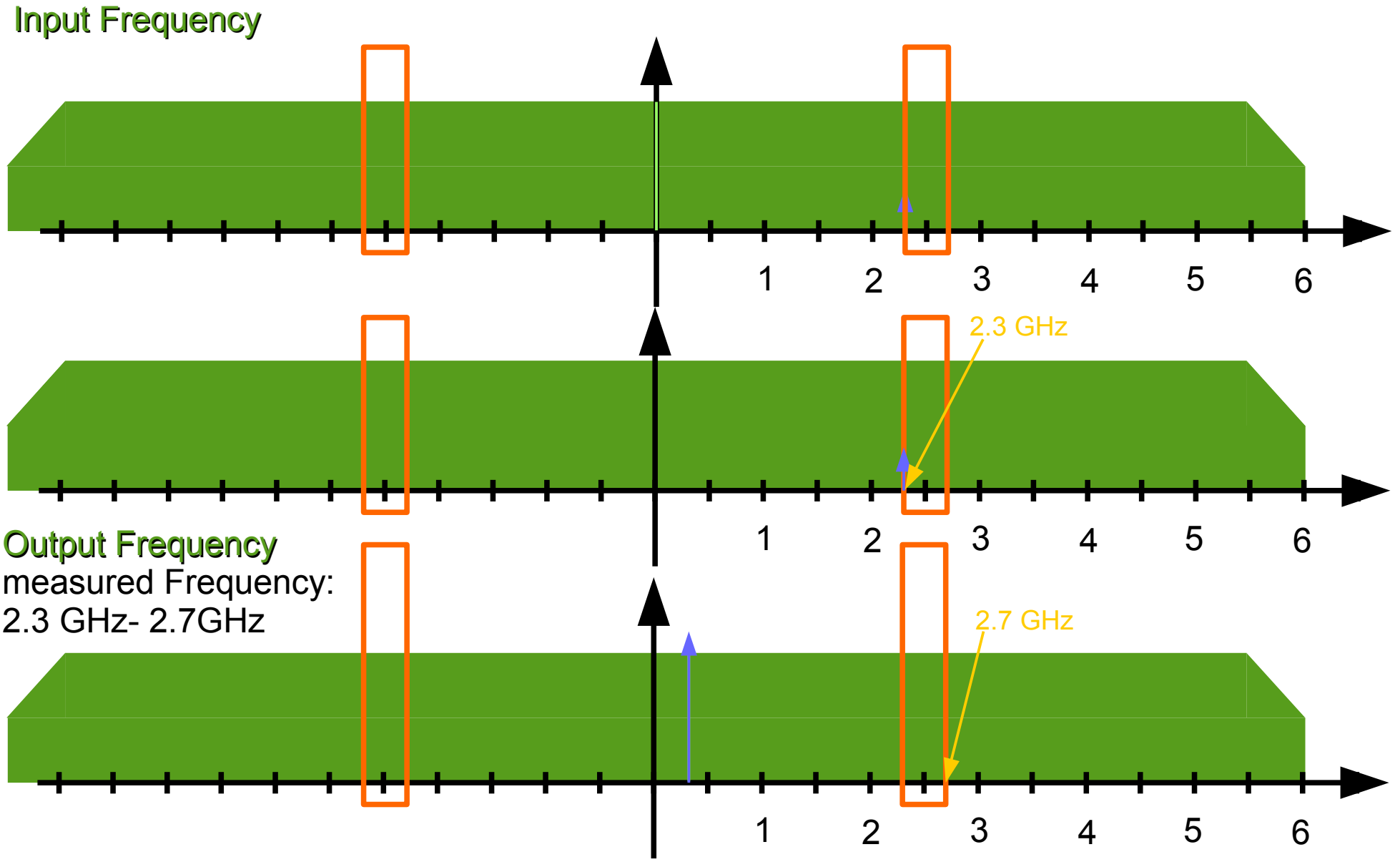
LO Frequency




Reverse frequency position!!!

# Byepass active 2.3-2.7 GHz

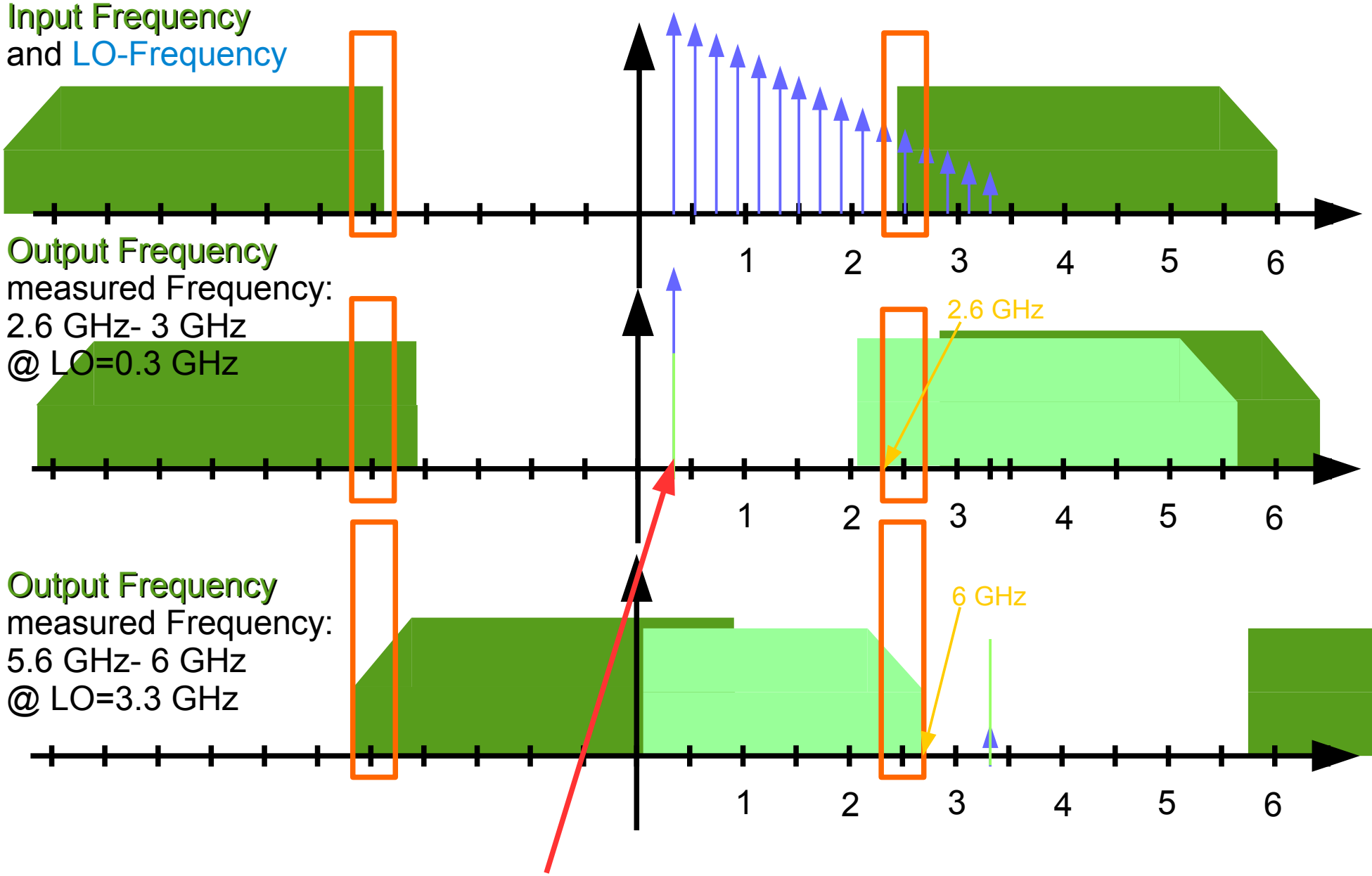
Wimax TRX receiving frequency 2.3 GHz- 2.7 GHz



# High pass Filter active 2.6-6 GHz

Wimax TRX receiving frequency 2.3 GHz- 2.7 GHz

LO Frequency

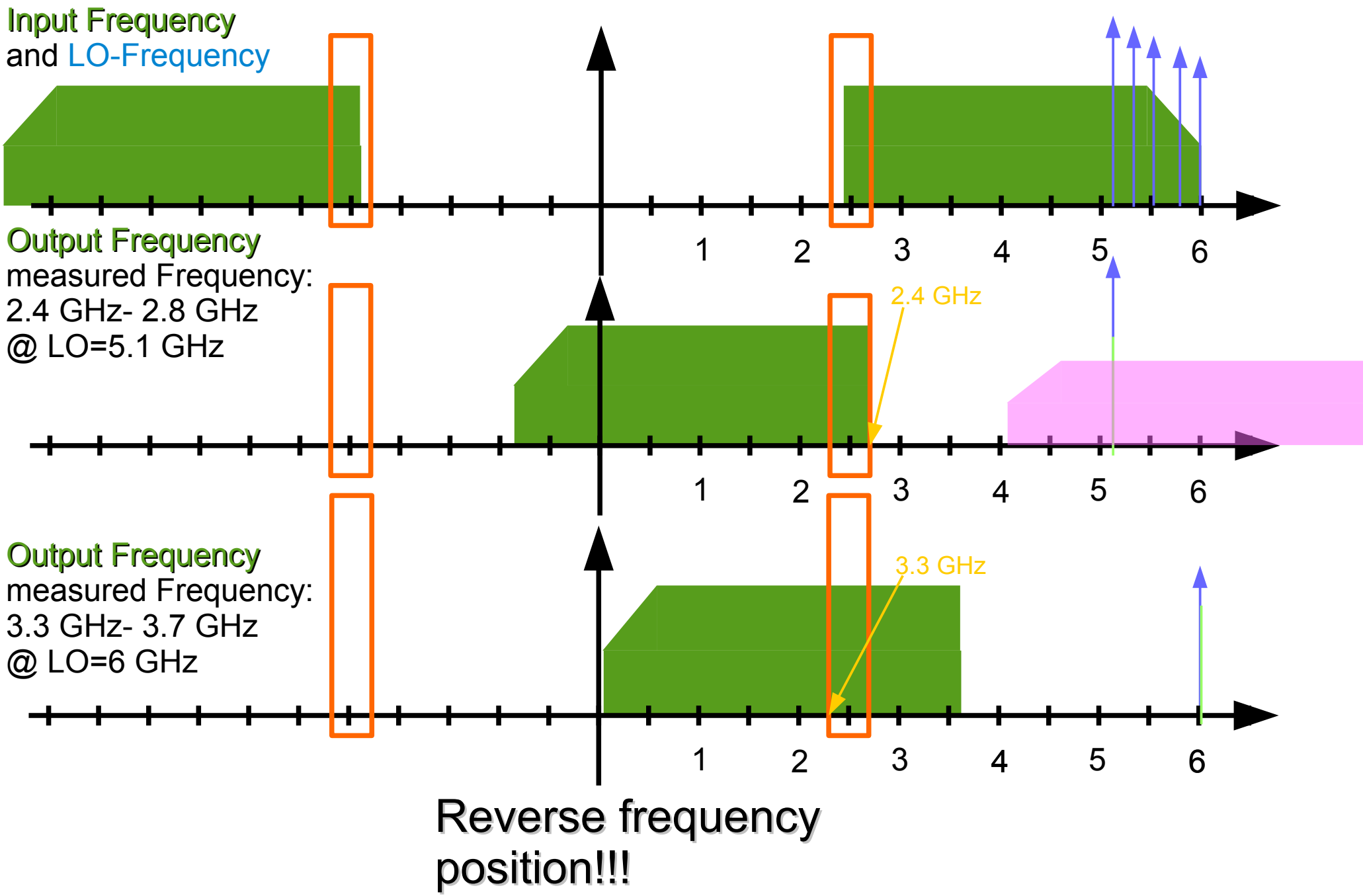



The harmonics of the Synthesizer is are a big problem here!!!!!!

# High pass Filter active 2.6-3.7 GHz

Wimax TRX receiving frequency 2.3 GHz- 2.7 GHz

LO Frequency

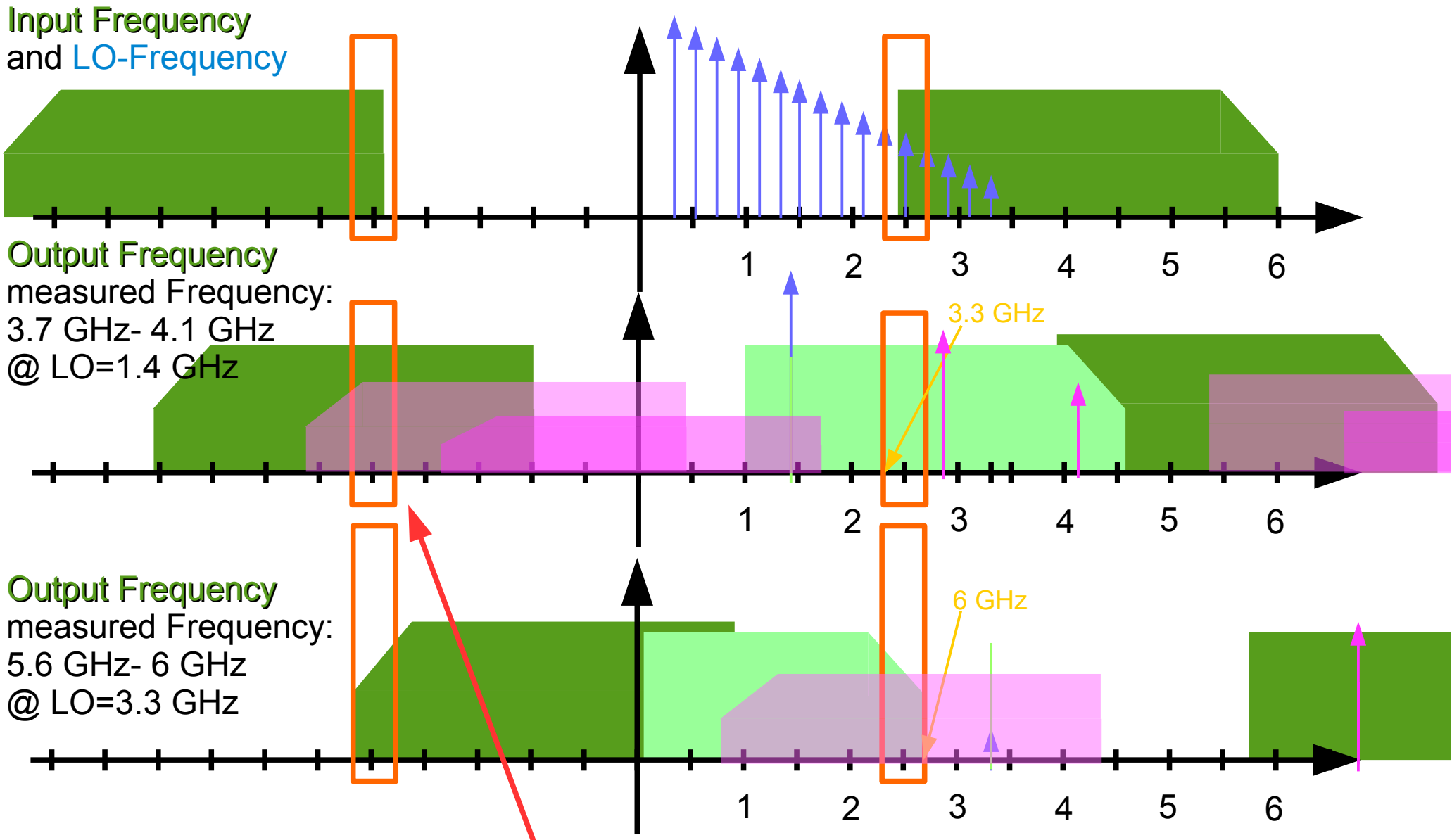



Reverse frequency position!!!

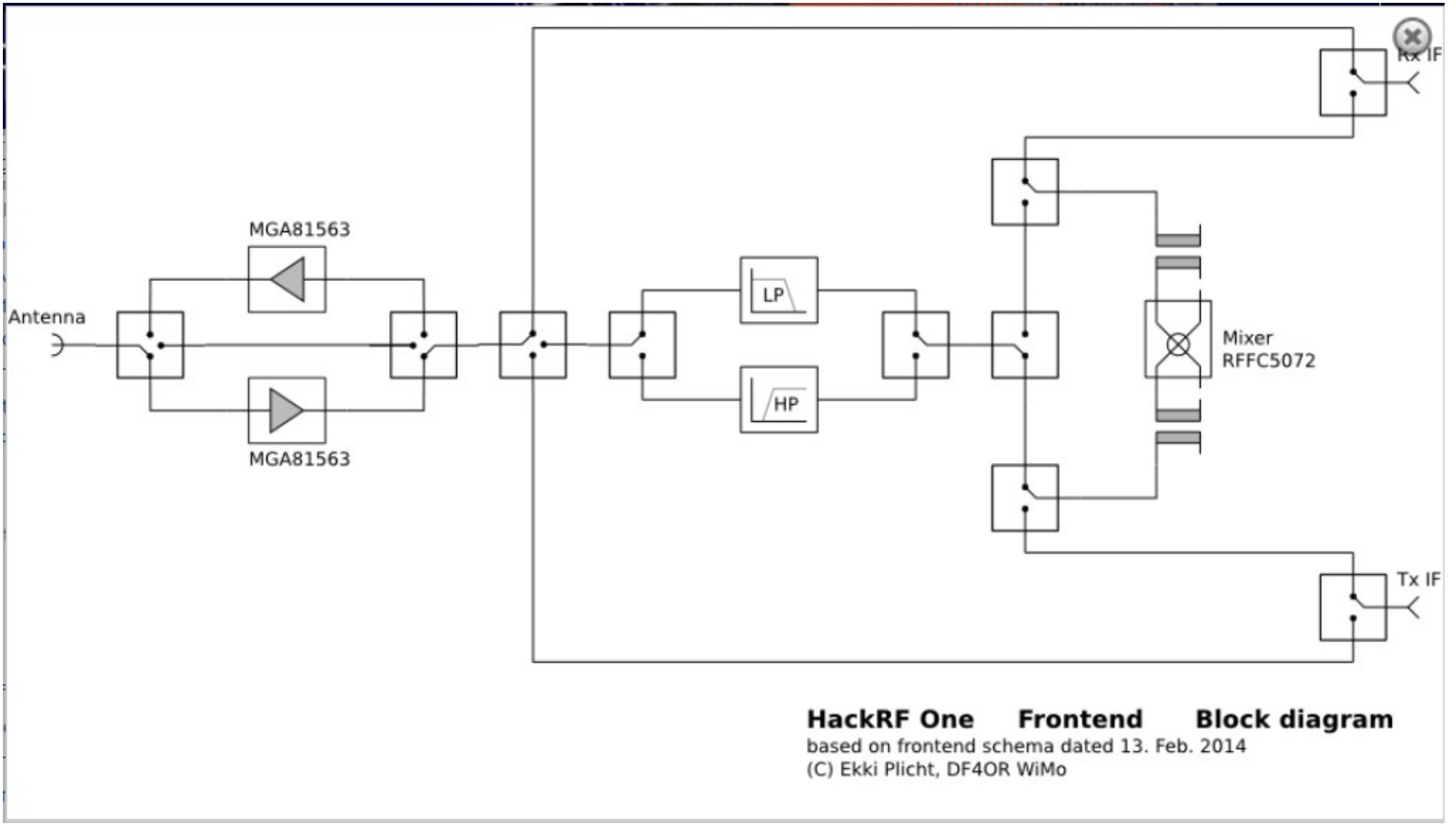
# High pass Filter active 3.7-6 GHz

Wimax TRX receiving frequency 2.3 GHz- 2.7 GHz

LO Frequency




The harmonics of the Synthesizer is are a big problem here!!!!!!


MGA81563
Antenna
MGA81563
LP
HP
Mixer
RFFC5072
Rx IF
Tx IF
HackRF One Frontend Block diagram
based on frontend schema dated 13. Feb. 2014
(C) Ekki Plicht, DF4OR WiMo

Current consumtion

| | | mA | V |
|---|---|---|---|
| Mixer | | 105 | 3.3/5 |
| LNA | | 2x81 | 3-5.5 |
| Tranceiver | RX110 TX170 | | 2.7-3.6 |
| ADC | | 14 | 1.8-3.3 |
| LPC4300 | | 100 | 3.3 |
| Switch | | - | 3.3/5 |

| | |
|---|---|
| SUMRX | 410mA |
| SUMTX | 470mA |

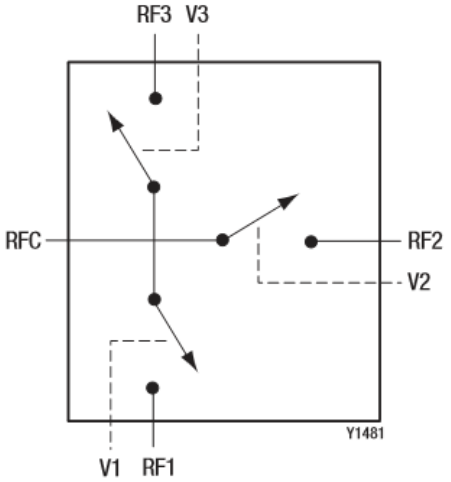
# SKY13317-373LF: 20 MHz to 6.0 GHz pHEMT GaAs SP3T Switch

## Applications

- 802.11 a/b/g/n WLAN networks
- Bluetooth® systems

## Features

- Positive low voltage control: 0/1.8 to 5.0 V
- Low insertion loss: 0.5 dB @ 2.5 GHz, 0.9 dB @ 6 GHz
- High isolation: 25 dB up to 6 GHz
- Excellent linearity performance: P1dB = +29 dBm
- Miniature, ultra-thin MLP (8-pin, 1.5 x 1.5 mm) package (MSL1, 260 °C per JEDEC J-STD-020)




| | | | | | | |
|---|---|---|---|---|---|---|
| 3rd Order Input Intercept Point | IIP3 | 900 to 2450 MHz, ΔF = 1 MHz, PIN = +17 dBm/tone | | | | |
| | | VLOW = 0 V, VHIGH = 2.1 V | | +33 | | dBm |
| | | VLOW = 0 V, VHIGH = 3.3 V | | +50 | | dBm |

**Table 4. SKY13317-373LF Truth Table**

| Low Insertion Loss Path | V1 (Pin 3) | V2 (Pin 6) | V3 (Pin 7) |
|---|---|---|---|
| RFC to RF1 | High | Low | Low |
| RFC to RF2 | Low | High | Low |
| RFC to RF3 | Low | Low | High |

**Note:** "High" = 1.8 to 5.0 V. "Low" = 0 to 0.25 V. Any state other than described in this Table places the switch into an undefined state. An undefined state will not damage the device.

# 2.3GHz to 2.7GHz Wireless Broadband RF Transceiver

MAX2837

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## Features

- 2.3GHz to 2.7GHz Wideband Operation
- Complete RF Transceiver, PA Driver, and Crystal Oscillator
  - 0dBm Linear OFDM Transmit Power
  - -70dBr Tx Spectral Emission Mask
  - 2.3dB Rx Noise Figure
  - Tx/Rx I/Q Error and LO Leakage Detection
  - Monolithic Low-Noise VCO with -39dBc Integrated Phase Noise
  - Programmable Tx I/Q Lowpass Anti-Aliasing Filter
  - Sigma-Delta Fractional-N PLL with 20Hz Step Size
  - 45dB Tx Gain-Control Range
  - 94dB Receive Gain-Control Range
  - 60dB Analog RSSI Instantaneous Dynamic Range
  - 4-Wire SPI™ Digital Interface
  - I/Q Analog Baseband Interface
  - Digitally Tuned Crystal Oscillator
  - On-Chip Digital Temperature Sensor Read-Out
- +2.7V to +3.6V Transceiver Supply
- Low-Power Shutdown Current
- Small 48-Pin Thin QFN Package (6mm x 6mm x 0.8mm)

## Lowpass

# Thin-Film Low Pass Filter

## LP0603 Lead-Free LGA Type

### GENERAL DESCRIPTION

The LP0603 ITF (Integrated Thin Film) Lead-Free LGA Low Pass Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Low Pass Filters are offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

### FEATURES

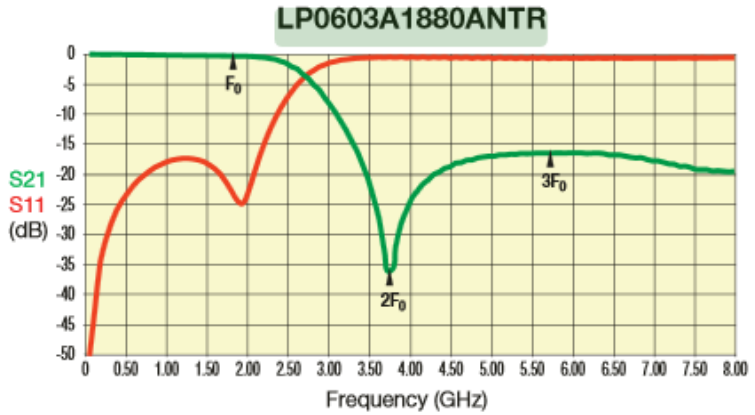
- Miniature Size: 0603
- Frequency Range: 900MHz-5.5HGz
- Characteristic Impedance: 50 Ohm
- Operating/Storage Temperature: -40°C to +85°C
- Power Rating: 3W Continuous
- Low Profile
- Rugged Construction
- Lead Free
- Taped and Reeled

### APPL

- Mobil
- Satelli
- GPS
- Vehicl
- Wirele
- RFID

### LAND

- Inhere
- Self A
- Excell
- Low F
- Better

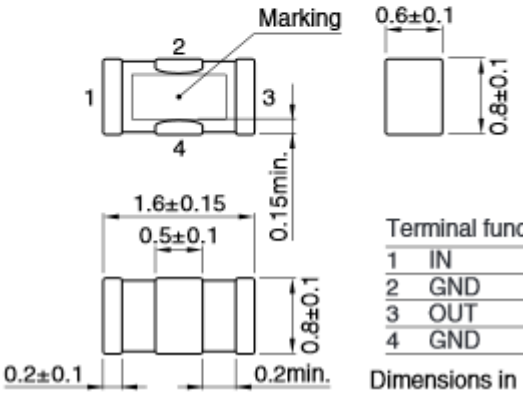



## Highpass

# Multilayer Chip High Pass Filters For Bluetooth & 2.4GHz W-LAN

## DEA Series DEA162400HT-8004B1

### SHAPES AND DIMENSIONS

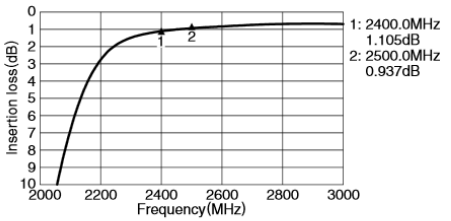



| Terminal functions | |
|---|---|
| 1 | IN |
| 2 | GND |
| 3 | OUT |
| 4 | GND |

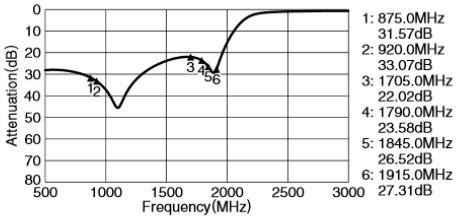
Dimensions in mm

### FREQUENCY CHARACTERISTICS

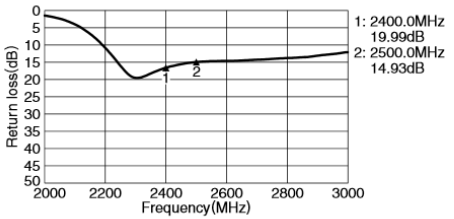
#### INSERTION LOSS



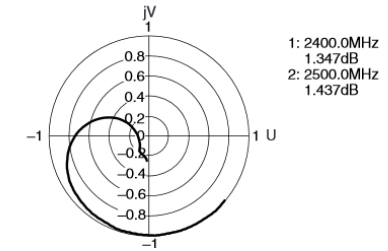

#### ATTENUATION




#### RETURN LOSS




#### VSWR



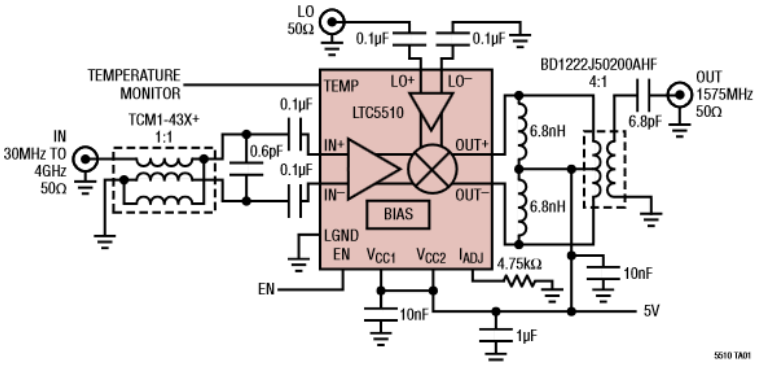
# LTC5510

# 1MHz to 6GHz Wideband High Linearity Active Mixer

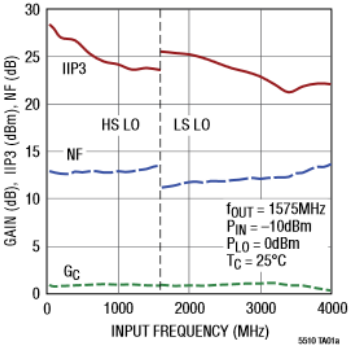
## FEATURES

- Input/LO Frequency Range to 6GHz
- 50Ω Matched Input from 30MHz to >3GHz
- Capable of Up- or Down-Conversion
- OIP3: 27dBm at $f_{OUT}$ = 1575MHz
- 1.5dB Conversion Gain
- Noise Figure: 11.6dB at $f_{OUT}$ = 1575MHz
- High Input P1dB: 11dBm at 5V
- 5V or 3.3V Supply at 105mA
- Shutdown Control
- LO Input Impedance Always Matched
- 0dBm LO Drive Level
- On-Chip Temperature Monitor
- –40°C to 105°C Operation ($T_C$)
- 16-Lead (4mm × 4mm) QFN Package

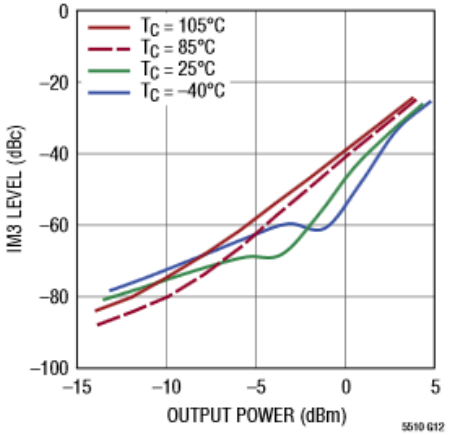
**30MHz to 4GHz Up/Down Mixer for Wideband Receiver**



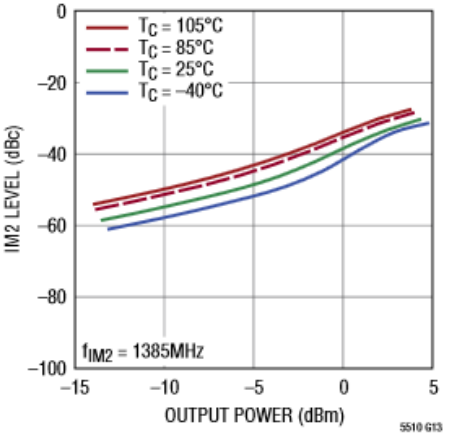

**Conversion Gain, IIP3 and NF vs Input Frequency**



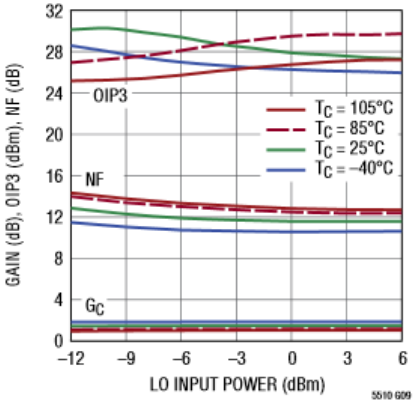

**IM3 Level vs Output Power (2-Tone)**



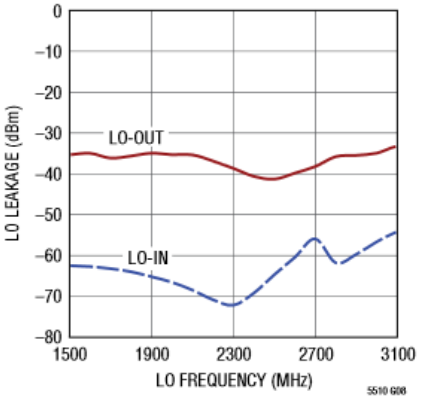

**IM2 Level vs Output Power (2-Tone)**




**Conversion Gain, OIP3 and NF vs LO Power**




**LO Leakage vs LO Frequency**



# MAX2612–MAX2616

## 40MHz to 4GHz Linear Broadband Amplifiers

### General Description

–MAX2616 is a family of high-performance
in blocks designed for use as a PA predriv-
ımplifier, or as a cascadable 50Ω amplifier
9.5dBm output power. These devices are
ıy applications that include cellular infra-
ate or commercial microwave radios, and
modems. The operating frequency range
10MHz to 4000MHz. The amplifier operates
+5.25V supply with input and output ports
:hed to 50Ω. The device family is available
compatible, compact 2mm x 3mm TDFN
tage.

### Applications

Infrastructure
ave Radio
s LAN
d Measurement

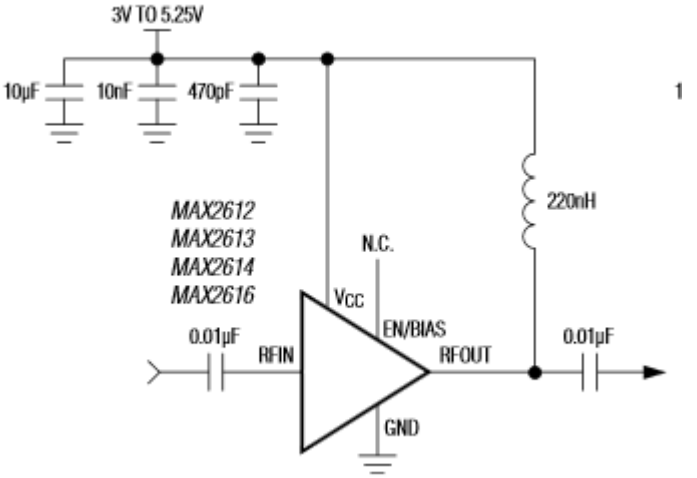
*nation appears at end of data sheet.*

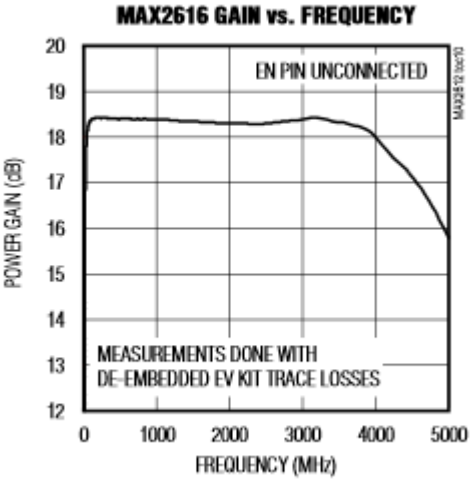
*and recommended products to use with this part,*
*imintegrated.com/MAX2612.related.*

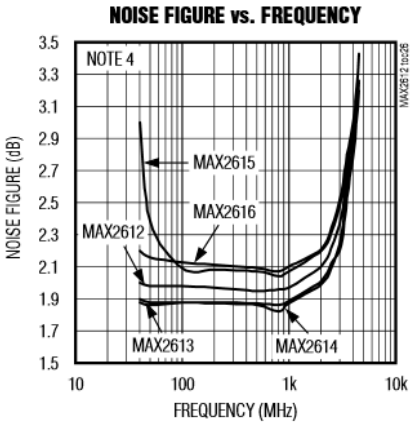
### Features

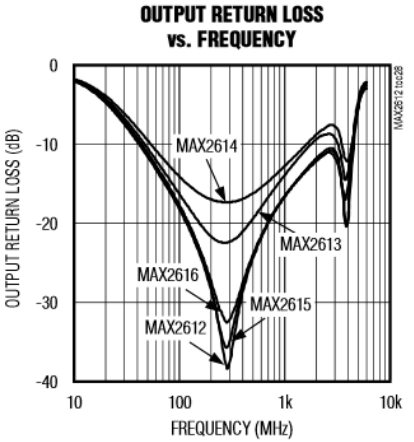
- **Extremely Flat Frequency Response**
  - **< 0.5dB, 1GHz to 4GHz**
- **Low Noise Figure: 2.0dB at $f_{RFIN}$ = 2.0GHz**
- **40MHz to 4000MHz Frequency Range**
- **Industry's Highest Max $P_{IN}$ Rating**
- **Large OIP3 Ranges**
  - **MAX2615/MAX2616: +37dBm**
  - **MAX2612: +35.2dBm**
  - **MAX2613: +31.2dBm**
  - **MAX2614: +30dBm**
- **Output P1dB: +19.5dBm (MAX2615/MAX2616)**
- **High Gain: 18.6dB**
- **Shutdown Mode (MAX2612/MAX2613/MAX2614/MAX2616)**
- **Adjustable Bias Current for Improved OIP3 (MAX2615)**
- **3.0V to 5.25V Supply Range**
- **Compact 2mm x 3mm TDFN Package**
- **Industry-High ESD Rating: 2.5kV HBM**

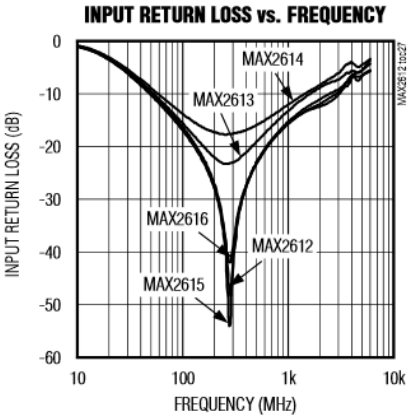
Current 80.6 mA



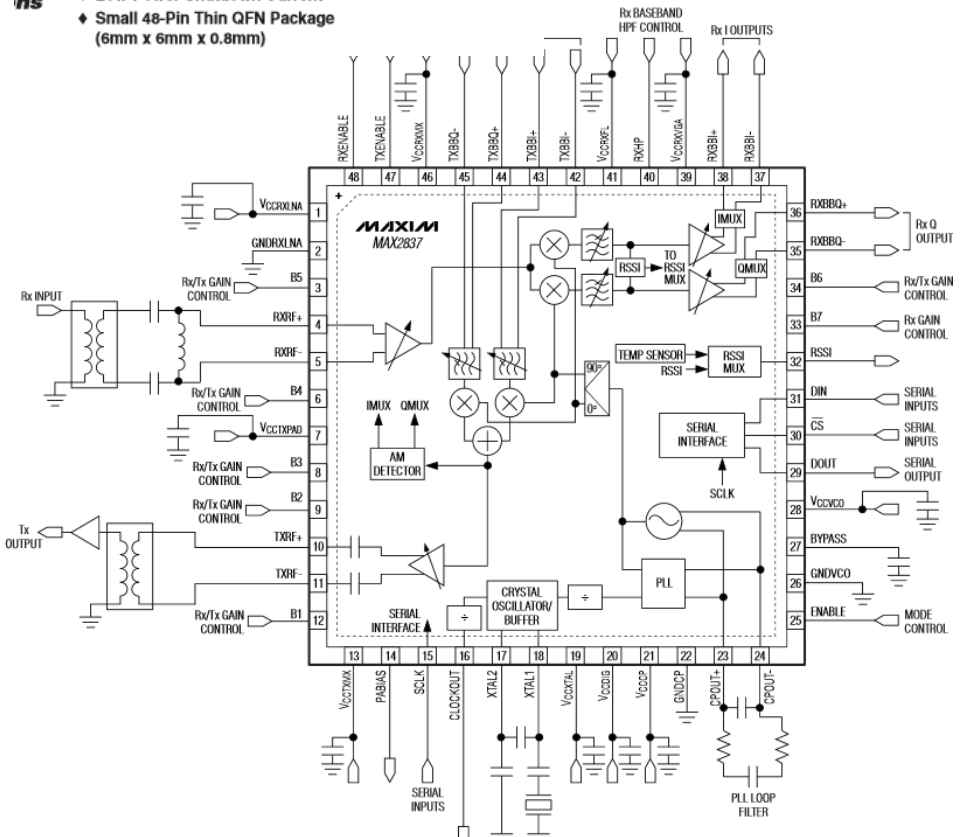
MAXIM

# 2.3GHz to 2.7GHz Wireless Broadband RF Transceiver

MAX2837

## Features

- 2.3GHz to 2.7GHz Wideband Operation
- Complete RF Transceiver, PA Driver, and Crystal Oscillator
  - 0dBm Linear OFDM Transmit Power
  - -70dBr Tx Spectral Emission Mask
  - 2.3dB Rx Noise Figure
  - Tx/Rx I/Q Error and LO Leakage Detection
  - Monolithic Low-Noise VCO with -39dBc Integrated Phase Noise
  - Programmable Tx I/Q Lowpass Anti-Aliasing Filter
  - Sigma-Delta Fractional-N PLL with 20Hz Step Size
  - 45dB Tx Gain-Control Range
  - 94dB Receive Gain-Control Range
  - 60dB Analog RSSI Instantaneous Dynamic Range
  - 4-Wire SPI™ Digital Interface
  - I/Q Analog Baseband Interface
  - Digitally Tuned Crystal Oscillator
  - On-Chip Digital Temperature Sensor Read-Out
- +2.7V to +3.6V Transceiver Supply
- Low-Power Shutdown Current
- Small 48-Pin Thin QFN Package (6mm x 6mm x 0.8mm)




| PARAMETER | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|
| Supply Voltage | $V_{CC\_}$ | 2.7 | | 3.6 | V |
| Supply Current | Shutdown mode, $T_A$ = +25°C | | 10 | | µA |
| | Standby mode | | 35 | 45 | mA |
| | Rx mode | | 91 | 110 | |
| | Tx mode, $T_A$ = +25°C | | 145 | 170 | |
| | Rx calibration mode | | 135 | 160 | |
| | Tx calibration mode | | 110 | 135 | |
| Rx I/Q Output Common-Mode Voltage | D9:D8 = 00 in A4:A0 = 00100 | 0.85 | 1.0 | 1.20 | V |
| | D9:D8 = 01 in A4:A0 = 00100 | | 1.1 | | |
| | D9:D8 = 10 in A4:A0 = 00100 | | 1.2 | | |
| | D9:D8 = 11 in A4:A0 = 00100 | | 1.35 | | |
| Tx Baseband Input Common-Mode Voltage Operating Range | DC-coupled | 0.5 | | 1.2 | V |
| Tx Baseband Input Bias Current | Source current | | 10 | 20 | µA |
| **LOGIC INPUTS: ENABLE, TXENABLE, RXENABLE, SCLK, DIN, $\overline{CS}$, B7:B1, RXHP** | | | | | |
| Digital Input-Voltage High, $V_{IH}$ | | $V_{CC}$ - 0.4 | | | V |
| Digital Input-Voltage Low, $V_{IL}$ | | | | 0.4 | V |
| Digital Input-Current High, $I_{IH}$ | | -1 | | +1 | µA |
| Digital Input-Current Low, $I_{IL}$ | | -1 | | +1 | µA |

## AC ELECTRICAL CHARACTERISTICS—Rx MODE

(MAX2837 evaluation kit: $V_{CC\_}$ = 2.8V, $f_{RF}$ = 2.502GHz, $f_{LO}$ = 2.5GHz; receiver baseband I/Q outputs at 90mV$_{RMS}$ (-21dBV), $f_{REF}$ = 40MHz, ENABLE = RXENABLE = $\overline{CS}$ = high, TXENABLE = SCLK = DIN = low, with power matching for the differential RF pins using the typical applications and registers set to default settings and corresponding test mode, $T_A$ = +25°C, unless otherwise noted. Lowpass filter is set to 10MHz RF channel BW. Unmodulated single-tone RF input signal is used, unless otherwise indicated.) (Note 1)

| PARAMETER | CONDITIONS | | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **RECEIVER SECTION: LNA RF INPUT TO BASEBAND I/Q OUTPUTS** | | | | | | |
| RF Input Frequency Range | | | 2.3 | | 2.7 | GHz |
| Peak-to-Peak Gain Variation over RF Input Frequency Range | Tested at band edges and band center | | | 0.8 | | dB |
| RF Input Return Loss | All LNA gain settings | | | 13 | | dB |
| Total Voltage Gain | $T_A$ = -40°C to +85°C | Maximum gain, B7:B1 = 0000000 | 90 | 99 | | dB |
| | | Minimum gain, B7:B1 = 1111111 | | 5 | 13 | |
| RF Gain Steps | From max RF gain to max RF gain - 8dB | | | 8 | | dB |
| | From max RF gain to max RF gain - 16dB | | | 16 | | |
| | From max RF gain to max RF gain - 32dB | | | 32 | | |
| Gain Change Settling Time | Any RF or baseband gain change; gain settling to within ±1dB of steady state; RXHP = 1 | | | 0.2 | | µs |
| | Any RF or baseband gain change; gain settling to within ±0.1dB of steady state; RXHP = 1 | | | 2 | | |
| Baseband Gain Range | From maximum baseband gain (B5:B1 = 00000) to minimum baseband gain (B5:B1 = 11111), $T_A$ = -40°C to +85°C | | 58 | 62 | 66 | dB |
| Baseband Gain Minimum Step Size | | | | 2 | | dB |
| DSB Noise Figure | Voltage gain ≥ 65dB with max RF gain (B7:B6 = 00) | | | 2.3 | | dB |
| | Voltage gain = 50dB with max RF gain - 8dB (B7:B6 = 01) | | | 5.5 | | |
| | Voltage gain = 45dB with max RF gain - 16dB (B7:B6 = 10) | | | 17 | | |
| | Voltage gain = 15dB with max RF gain - 32dB (B7:B6 = 11) | | | 27 | | |

Bit-Dynamik 20*log(2^8)=48dB

KIT
E

MAXIM

# Ultra-Low-Power, High-Dynamic-Performance, 22Msps Analog Front End

MAX5864

## General Description

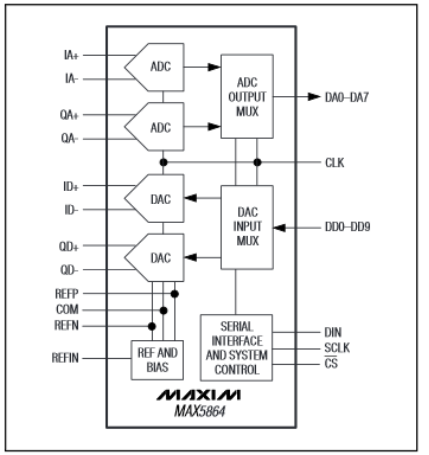
-low-power, highly integrated analog
r portable communication equipment
PDAs, WLAN, and 3G wireless termi-
integrates dual 8-bit receive ADCs
ısmit DACs while providing the high-
nance at ultra-low power. The ADCs'
ımplifiers are fully differential and
scale signals. Typical I-Q channel
s ±0.1° and amplitude matching is
s feature 48.5dB SINAD and 69dBc
ic range (SFDR) at $f_{IN}$ = 5.5MHz and
e DACs' analog I-Q outputs are fully
0mV full-scale output, and 1.4V com-
ypical I-Q channel phase match is
le match is ±0.05dB. The DACs also
resolution with 71.7dBc SFDR, and
2.2MHz and $f_{CLK}$ = 22MHz.

's operate simultaneously or indepen-
-division duplex (FDD) and time-divi-
) modes. A 3-wire serial interface
/n and transceiver modes of opera-
perating power is 42mW at $f_{CLK}$ =

## Features

- Integrated Dual 8-Bit ADCs and Dual 10-Bit DACs
- Ultra-Low Power
  - 42mW at $f_{CLK}$ = 22MHz (Transceiver Mode)
  - 34mW at $f_{CLK}$ = 15.36MHz (Transceiver Mode)
  - Low-Current Idle and Shutdown Modes
- Excellent Dynamic Performance
  - 48.5dB SINAD at $f_{IN}$ = 5.5MHz (ADC)
  - 71.7dB SFDR at $f_{OUT}$ = 2.2MHz (DAC)
- Excellent Gain/Phase Match
  - ±0.1° Phase, ±0.03dB Gain at $f_{IN}$ = 5.5MHz (ADC)
- Internal/External Reference Option
- +1.8V to +3.3V Digital Output Level (TTL/CMOS Compatible)
- Multiplexed Parallel Digital Input/Output for ADCs/DACs
- Miniature 48-Pin Thin QFN Package (7mm × 7mm)
- Evaluation Kit Available (Order MAX5865EVKIT)

## Functional Diagram




## ELECTRICAL CHARACTERISTICS

($V_{DD}$ = 3V, $OV_{DD}$ = 1.8V, internal reference (1.024V), $C_L$ = 10pF on all digital outputs, $f_{CLK}$ = 22MHz, ADC input amplitude = -0.5dBFS, DAC output amplitude = 0dBFS, differential ADC input, differential DAC output, $C_{REFP}$ = $C_{REFN}$ = $C_{COM}$ = 0.33µF, Xcvr mode, unless otherwise noted. Typical values are at $T_A$ = +25°C, unless otherwise noted.) (Note 1)

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **POWER REQUIREMENTS** | | | | | | |
| Analog Supply Voltage | $V_{DD}$ | | 2.7 | 3.0 | 3.3 | V |
| Output Supply Voltage | $OV_{DD}$ | | 1.8 | | $V_{DD}$ | V |
| $V_{DD}$ Supply Current | | ADC operating mode, $f_{IN}$ = 5.5MHz, $f_{CLK}$ = 22MHz, DAC operating mode, $f_{OUT}$ = 2.2MHz | | 14 | 16.5 | mA |
| | | ADC operating mode, $f_{IN}$ = 5.5MHz, $f_{CLK}$ = 15.36MHz, DAC operating mode, $f_{OUT}$ = 2.2MHz | | 11.4 | | |
| | | ADC operating mode (Rx), $f_{IN}$ = 5.5MHz, $f_{CLK}$ = 15.36MHz, DAC off, DAC digital inputs at zero or $DV_{DD}$ | | 8.25 | | |
| | | DAC operating mode (Tx), $f_{OUT}$ = 2.2MHz, $f_{CLK}$ = 15.36MHz, ADC off | | 8 | | |
| | | Standby mode, DAC digital inputs and CLK at zero or $OV_{DD}$ | | | 2.0 | |
| | | Idle mode, DAC digital inputs at zero or $OV_{DD}$, $f_{CLK}$ = 22MHz | | | 6.7 | |
| | | Shutdown mode, digital inputs and CLK at zero or $OV_{DD}$, $\overline{CS}$ = $OV_{DD}$ | | 1 | | µA |
| $OV_{DD}$ Supply Current | | ADC operating mode, $f_{IN}$ = 5.5MHz, $f_{CLK}$ = 22MHz, DAC operating mode, $f_{OUT}$ = 2.2MHz | | 2.3 | | mA |
| | | Idle mode, DAC digital inputs at zero or $OV_{DD}$, $f_{CLK}$ = 22MHz | | 20.6 | | µA |
| | | Shutdown mode, DAC digital inputs and CLK at zero or $OV_{DD}$, $\overline{CS}$ = $OV_{DD}$ | | 1 | | |

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **ADC DC ACCURACY** | | | | | | |
| Resolution | | | 8 | | | Bits |
| Integral Nonlinearity | INL | | | ±0.15 | | LSB |
| Differential Nonlinearity | DNL | No missing codes over temperature | | ±0.15 | | LSB |
| Offset Error | | Residual DC offset error | | ±0.24 | ±5 | %FS |
| Gain Error | | Includes reference error | | ±0.77 | ±5 | %FS |
| DC Gain Matching | | | | ±0.03 | ±0.25 | dB |
| Offset Matching | | | | ±3 | | LSB |
| Gain Temperature Coefficient | | | | ±59 | | ppm/°C |
| Power-Supply Rejection | PSRR | Offset error ($V_{DD}$ ±5%) | | ±0.2 | | LSB |
| | | Gain error ($V_{DD}$ ±5%) | | ±0.07 | | |
| **ADC ANALOG INPUT** | | | | | | |
| Input Differential Range | $V_{ID}$ | Differential or single-ended inputs | | ±0.512 | | V |
| Input Common-Mode Voltage Range | | | | $V_{DD}$ / 2 | | V |
| Input Impedance | $R_{IN}$ | Switched capacitor load | | 245 | | kΩ |
| | $C_{IN}$ | | | 5 | | pF |
| **ADC CONVERSION RATE** | | | | | | |
| Maximum Clock Frequency | $f_{CLK}$ | (Note 2) | | | 22 | MHz |
| Data Latency | | Channel I | | 5 | | Clock cycles |
| | | Channel Q | | 5.5 | | |
| **ADC DYNAMIC CHARACTERISTICS** (Note 3) | | | | | | |
| Signal-to-Noise Ratio | SNR | $f_{IN}$ = 5.5MHz | 47 | 48.6 | | dB |
| | | $f_{IN}$ = 11MHz | | 48.6 | | |
| Signal-to-Noise and Distortion Ratio | SINAD | $f_{IN}$ = 5.5MHz | 46.5 | 48.5 | | dB |
| | | $f_{IN}$ = 11MHz | | 48.5 | | |
| Spurious-Free Dynamic Range | SFDR | $f_{IN}$ = 5.5MHz | 58 | 69 | | dBc |
| | | $f_{IN}$ = 11MHz | | 71.5 | | |
| Third-Harmonic Distortion | HD3 | $f_{IN}$ = 5.5MHz | | -70.3 | | dBc |
| | | $f_{IN}$ = 11MHz | | -75.5 | | |
| Intermodulation Distortion | IMD | $f_1$ = 2MHz, -7dBFS; $f_2$ = 2.01MHz, -7dBFS | | -64 | | dBc |
| Third-Order Intermodulation Distortion | IM3 | $f_1$ = 2MHz, -7dBFS; $f_2$ = 2.01MHz, -7dBFS | | -67 | | dBc |
| Total Harmonic Distortion | THD | $f_{IN}$ = 5.5MHz | | -68.2 | -57 | dBc |