

Package: P22, 15.24mm x 15.24mm x 5.58mm

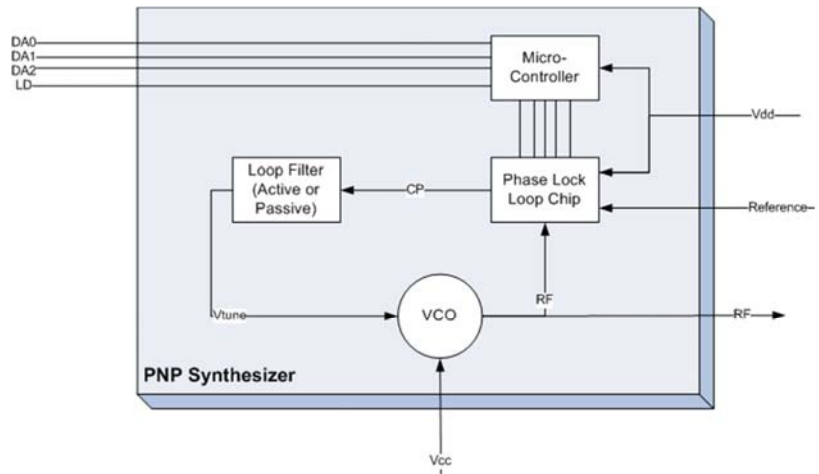


**Features**

- Internal Microcontroller
- Programmable START/STOP/Step Size
- SPI BUS Compatible
- Frequency: 4165MHz to 4375MHz
- Resonator: Microstrip
- PCB: Rogers
- Package Size: 15.24mm x 15.24mm x 5.58mm (0.6in x 0.6in x 0.22in)

**Applications**

- Highly Integrated Radio Designs
- High-Performance Radios
- Microwave Radio IF Conversion
- Instrumentation
- Frequency Synthesizers



Functional Block Diagram

**Product Description**

RFMD offers complete Plug-N-Play Synthesizers (PNPs) for low noise frequency synthesizer applications consisting of a VCO, PLL, loop filter and Micro-controller interface. The PNP family of RF signal sources is the world's first family of truly configurable frequency synthesizer modules. These synthesizers can make quick adjustments with amazing accuracy, speed, and performance.

**Ordering Information**

PNP-1617-P22-G      Contact us at 1-480-756-6070

**Optimum Technology Matching® Applied**

- |                                      |                                      |  |                                    |
|--------------------------------------|--------------------------------------|--|------------------------------------|
| <input type="checkbox"/> GaAs HBT    | <input type="checkbox"/> SiGe BiCMOS | <input type="checkbox"/> GaAs pHEMT        | <input type="checkbox"/> GaN HEMT  |
| <input type="checkbox"/> GaAs MESFET | <input type="checkbox"/> Si BiCMOS   | <input type="checkbox"/> Si CMOS           | <input type="checkbox"/> BiFET HBT |
| <input type="checkbox"/> InGaP HBT   | <input type="checkbox"/> SiGe HBT    | <input checked="" type="checkbox"/> Si BJT | <input type="checkbox"/> LDMOS     |

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## Absolute Maximum Ratings

| Parameter                     | Rating      | Unit |
|-------------------------------|-------------|------|
| Operating Ambient Temperature | -40 to +85  | °C   |
| Storage Temperature           | -55 to +125 | °C   |



**Caution!** ESD sensitive device.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

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RoHS (Restriction of Hazardous Substances): Compliant per EU Directive 2002/95/EC.

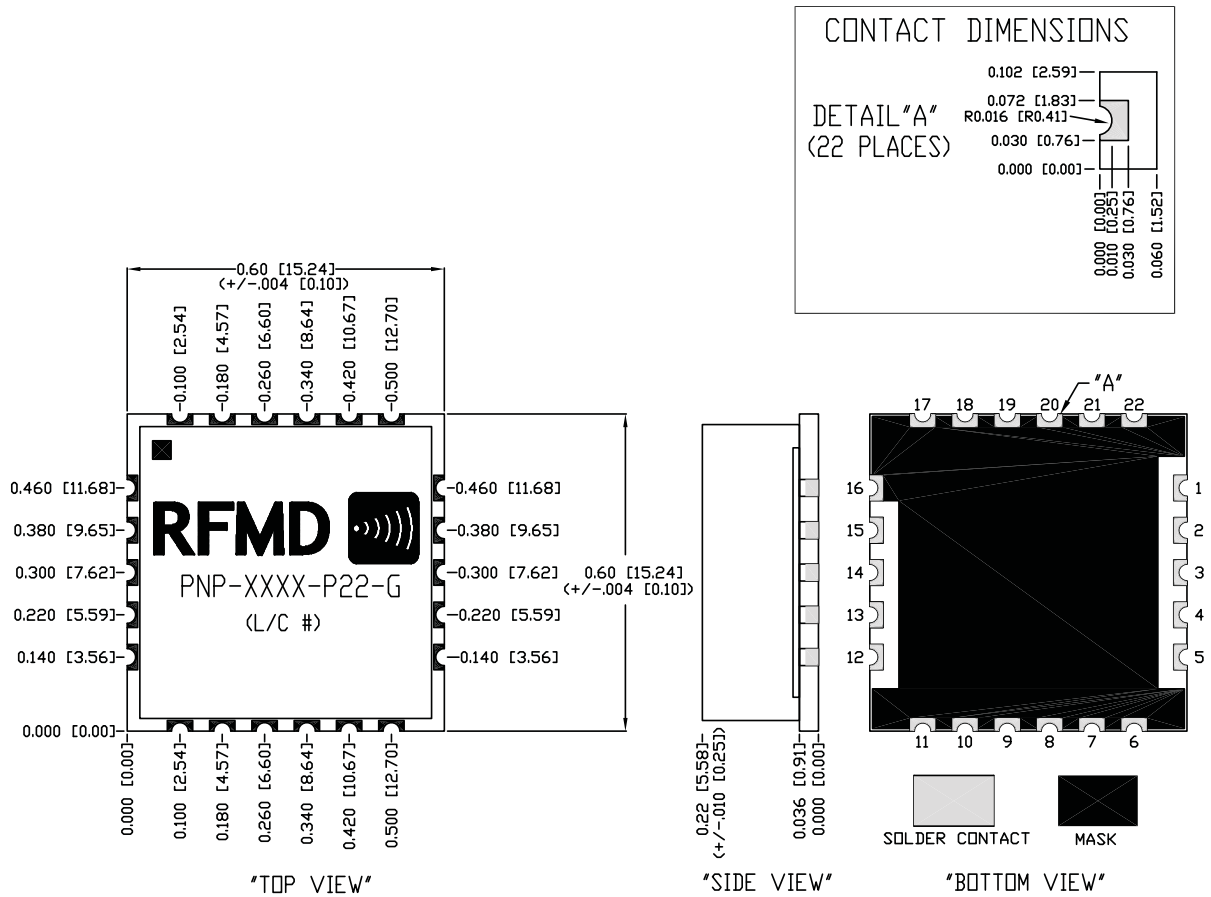
| Parameter                   | Specification |      |       | Unit             | Condition              |
|-----------------------------|---------------|------|-------|------------------|------------------------|
|                             | Min.          | Typ. | Max.  |                  |                        |
| <b>Overall</b>              |               |      |       |                  |                        |
| Frequency Range             | 4165          |      | 4375  | MHz              |                        |
| Step Size                   | 2500          |      | 10000 | kHz              |                        |
| Output Power                | 0             | 3    | 6     | dBm              |                        |
| Output Phase Noise          |               | -90  | -85   | dBc/Hz           | 1 kHz                  |
|                             |               | -93  | -88   | dBc/Hz           | 10 kHz                 |
|                             |               | -120 | -115  | dBc/Hz           | 100 kHz                |
|                             |               | -140 | -135  | dBc/Hz           | 1000 kHz               |
| Spurious Product            |               | -70  | -60   | dBc              | 2500kHz step size      |
| Reference Feedthrough       |               | -80  | -70   | dBc              |                        |
| Second Harmonic             |               | -15  | -10   | dBc              |                        |
| Reference Oscillator Signal | 10            | 20   | 250   | MHz              | Frequency              |
|                             | 0             |      | 3.3   | V <sub>P-P</sub> | Amplitude - DC coupled |
| <b>Power Supply</b>         |               |      |       |                  |                        |
| Operating Voltage           | 12.3          | 12.5 | 12.7  | V                | V1                     |
|                             | 2.7           | 3    | 3.3   | V                | V2                     |
| Supply Current              |               | 50   | 60    | mA               | I1                     |
|                             |               | 25   | 35    | mA               | I2                     |

Notes:

- 1) Reference Input Level: -5dBm minimum, +5dBm maximum, AC coupled.
- 2) Specification Test Conditions: V1 = 12.5V, V2 = 3V, REF = 20MHz.

## Package Drawing & Pin Outs

15.24mm x 15.24mm x 5.58mm (0.6in x 0.6in x 0.22in)



| CONTACT ASSIGNMENTS: |                               |
|----------------------|-------------------------------|
| 1: DA0               | 12: RF OUTPUT                 |
| 2: DA1               | 13: V1, ANALOG SUPPLY INPUT   |
| 3: DA2               | 14: V2, DIGITAL SUPPLY INPUT  |
| 4: LOCK DETECT       | 15: REFERENCE INPUT           |
| 5: NO CONNECT        | ALL OTHER CONTACTS ARE GROUND |