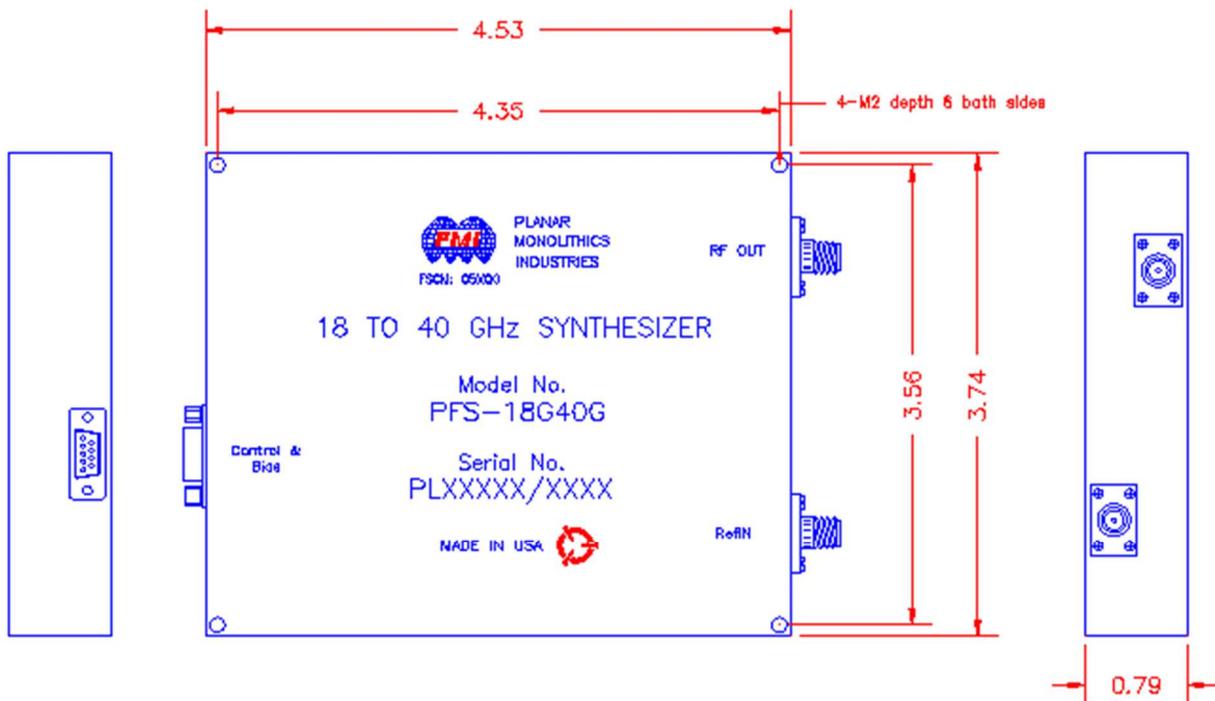


**TYPICAL CHARACTERISTICS
ON
PFS-18G40G**

PMI MODEL NUMBER PFS-18G40G IS A FREQUENCY SYNTHESIZER THAT OPERATES OVER THE 18 TO 40 GHz FREQUENCY RANGE. THIS UNIT FEATURES HIGH SPEED, HIGH ACCURACY AND LOW PHASE NOISE.



September 13, 2024

**TYPICAL CHARACTERISTICS
ON
PFS-18G40G**

DESCRIPTION:

PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER: PFS-18G40G IS A FREQUENCY SYNTHESIZER THAT OPERATES OVER THE 18 TO 40 GHz FREQUENCY RANGE. THIS UNIT FEATURES HIGH SPEED, HIGH ACCURACY AND LOW PHASE NOISE.

| REVISIONS | | | |
|-----------|------|-------------|-----------|
| ZONE | REV. | DESCRIPTION | DATE |
| | — | PRELIMINARY | 9/13/2024 |
| | | | APPROVED |

SPECIFICATIONS:

- FREQUENCY RANGE: 18 TO 40 GHz
- FREQUENCY STEP SIZE, NOMINAL (LSB): ... 0.2 Hz (18 to 30 GHz) 0.4 Hz (30 to 40 GHz)
- FREQUENCY SWITCH TIME: 200us (SPI MODE) MAX
- OUTPUT POWER: 10 dBm MIN
- FREQUENCY ACCURACY: $\pm 2 \times 10^{-7}$ (or same as external ref)
- FREQUENCY STABILITY: $\pm 2 \times 10^{-7}$ (or same as external ref)
- SPURIOUS: -65/-60 (TYP/MAX 18 to 30 GHz)
-60/-55 (TYP/MAX 30 to 40 GHz)
- HARMONICS: -15 dBc TYP
- INPUT REF FREQUENCY: 10/100 MHz (CUSTOMER CHOICE)

PHASE NOISE:

| | 20GHz | 30GHz | 40GHz |
|---------------|--------|--------|--------|
| dBm/Hz@100Hz | ≤ -79 | ≤ -75 | ≤ -72 |
| dBm/Hz@1kHz | ≤ -101 | ≤ -97 | ≤ -94 |
| dBm/Hz@10kHz | ≤ -110 | ≤ -106 | ≤ -103 |
| dBm/Hz@100kHz | ≤ -110 | ≤ -106 | ≤ -103 |
| dBm/Hz@1MHz | ≤ -113 | ≤ -106 | ≤ -105 |

- REF INPUT POWER 5±3 dBm
- POWER SUPPLY(V/A): +12/1.4 (WARM-UP) +12/1.2 (STABLE)
- SIZE 4.53" X 3.74" X 0.79"
- CONTROL MODE: RS232/SPI
- OPERATE TEMP: -40 to +70°C
- STORAGE TEMP: -55 to +85°C
- WEIGHT: 0.95 kg MAX

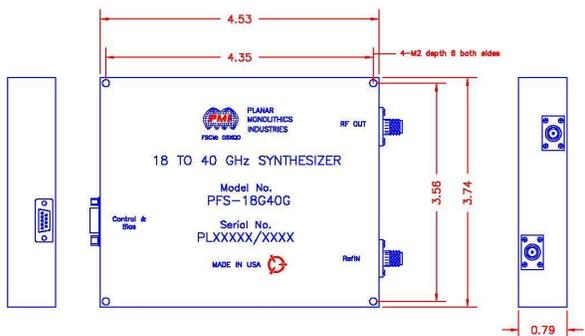
CTL OPTION SPI MODE CONTROL & BIAS DEFINITION

| | | | | | |
|----|------|---|------|---|------|
| 1 | +12V | 2 | +12V | 3 | LD |
| 4 | NC | 5 | MOSI | 6 | MISO |
| 7 | SCK | 8 | LE | 9 | GND |
| 10 | GND | | | | |

CTL OPTION RS232 MODE CONTROL & BIAS DEFINITION

| | | | | | |
|----|------|---|------|---|-----|
| 1 | +12V | 2 | +12V | 3 | LD |
| 4 | NC | 5 | RX | 6 | TX |
| 7 | NC | 8 | NC | 9 | GND |
| 10 | GND | | | | |

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



ALL DIMENSIONS ARE IN INCHES

TOLERANCES:
X.XX ±0.020
X.XXX ±0.005

PMI CONFIDENTIAL AND PROPRIETARY

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ISO 9001:2008 CERTIFIED



| APPROVALS | | DATE | TITLE | |
|------------|--|-----------|---|----------------|
| AG | | 9/13/2024 | PRODUCT FEATURE PFS-18G40G 18 TO 40 GHz SYNTHESIZER | |
| CHECKED | | | SIZE: A | FORM NO. 05XQ0 |
| ISSUED | | | DWG NO. PRELIMINARY | REV. — |
| SCALE: N:S | | | SHEET 1 OF 1 | |

**TYPICAL CHARACTERISTICS
ON
PFS-18G40G**

TEST DATA

| TEST ITEM | PARAMETERS | SPECIFIED VALUE | MEASURED VALUE |
|------------------|---|--|--|
| 1 | Output Frequency | 18 – 40 GHz | 18 – 40 GHz |
| 2 | Reference Input Power | 5 ± 3 dBm | 5 ± 3 dBm |
| 3 | Reference Input Frequency | 10 MHz or 100 MHz | 100 MHz |
| 4 | Frequency Switch Time | 200 µs MAX | 200 µs MAX |
| 5 | Output Power | 10 dBm MIN | 15.9 dBm MIN See Plot |
| 6 | Spurious | -65/-60 (TYP/MAX 18-30 GHz) -60/-55 (TYP/MAX 30-40 GHz) | -62 dBc MAX See Plot |
| 7 | Harmonics | 15 dBc TYPICAL | 15 dBc TYPICAL See Plot |
| 8 | Phase Noise (measured at 40 GHz output frequency) | -72 dBc/Hz@100Hz MAX -94 dBc/Hz@1KHz MAX -103 dBc/Hz@10KHz MAX -103 dBc/Hz@100KHz MAX -105 dBc/Hz@1MHz MAX | -83 dBc/Hz -101 dBc/Hz -108 dBc/Hz -108 dBc/Hz -110 dBc/Hz |
| 9 | Control Mode | RS232/SPI | SPI |

**TYPICAL CHARACTERISTICS
ON
PFS-18G40G**

