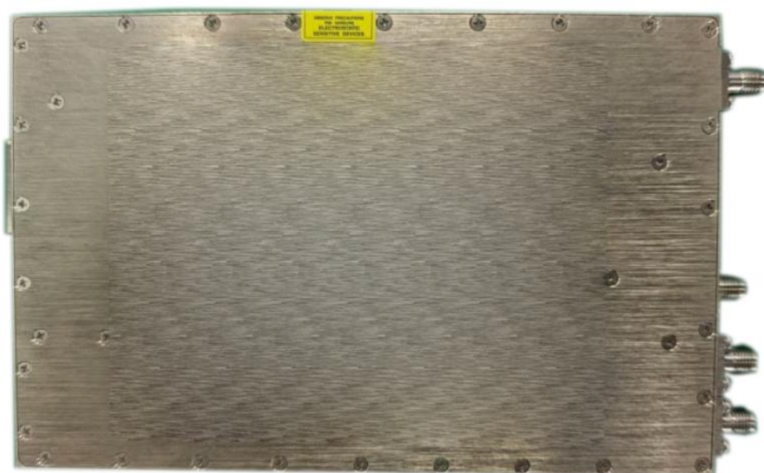


# WIDEBAND FAST-SWITCHING FREQUENCY SYNTHESIZER



## 1.25 to 40 GHz

Fast frequency switching  
Parallel interface control  
10 kHz frequency step  
Switching time:  $\leq 300$  ns  
146.1 × 95 × 18 mm package  
Weight:  $\leq 0.65$  kg

The OBFS110-0140 is a wideband fast-switching frequency synthesizer with an output frequency range of 1.25 to 40 GHz. Control interface: Parallel interface. The frequency step is 10 kHz. Frequency switching time:  $\leq 300$  ns. Output power:  $\geq 10$  dBm. Dimensions: 146.1 × 95 × 18 mm. Weight:  $\leq 0.65$  kg. Operating temperature: -40 to +70 °C.

# TECHNICAL SPECIFICATIONS

## OBFS110-0140

| Property                 | Value                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------|
| Output frequency range   | 1.25-40 GHz                                                                            |
| Frequency step           | 10 kHz                                                                                 |
| Frequency switching time | ≤300 ns                                                                                |
| Output power             | ≥10 dBm                                                                                |
| Frequency stability      | $2 \times 10^{-7}$ ; follows external reference when connected                         |
| Spurious level           | ≤-65/-60 dBc (typical/maximum; 1.25-20 GHz); ≤-60/-55 dBc (typical/maximum; 20-40 GHz) |
| Harmonic level           | ≤-5 dBc                                                                                |
| Supply voltage           | +12 V                                                                                  |
| Supply current           | 2.5 A startup; 1.8 A steady state                                                      |
| Control interface        | Parallel interface                                                                     |
| Operating temperature    | -40 to +70 °C                                                                          |
| Storage temperature      | -55 to +85 °C                                                                          |
| Dimensions               | 146.1 × 95 × 18 mm                                                                     |
| Weight                   | ≤0.65 kg                                                                               |
| Reference connector      | SMA female                                                                             |
| RF output connector      | 2.92 mm female                                                                         |
| Power/control connector  | J30J-31                                                                                |
| Pulse modulation depth   | ≥60 dBc (1.25-20 GHz); ≥55 dBc (20-40 GHz); tested at +10 dBm                          |
| Pulse width              | 100 ns-10 ms                                                                           |
| Pulse rise/fall time     | ≤50 ns / ≤100 ns                                                                       |

# TECHNICAL INFORMATION

## OBFS110-0140 | Phase Noise (dBc/Hz)

| Output Frequency | 100 Hz | 1 kHz | 10 kHz | 100 kHz | 1 MHz |
|------------------|--------|-------|--------|---------|-------|
| 1.25 GHz         | ≤-110  | ≤-128 | ≤-135  | ≤-135   | ≤-143 |
| 10 GHz           | ≤-90   | ≤-110 | ≤-118  | ≤-118   | ≤-126 |
| 20 GHz           | ≤-84   | ≤-104 | ≤-112  | ≤-112   | ≤-120 |
| 40 GHz           | ≤-76   | ≤-98  | ≤-106  | ≤-106   | ≤-114 |

Column headings specify frequency offset from the carrier. Output frequency is listed in the first column. Values and limit signs follow the source tables.

## Specification Notes

The supplied 10 GHz analyzer screenshot displays UNLOCKED. It is reproduced as a source measurement record, not as proof of a valid locked-state test or a guaranteed specification.

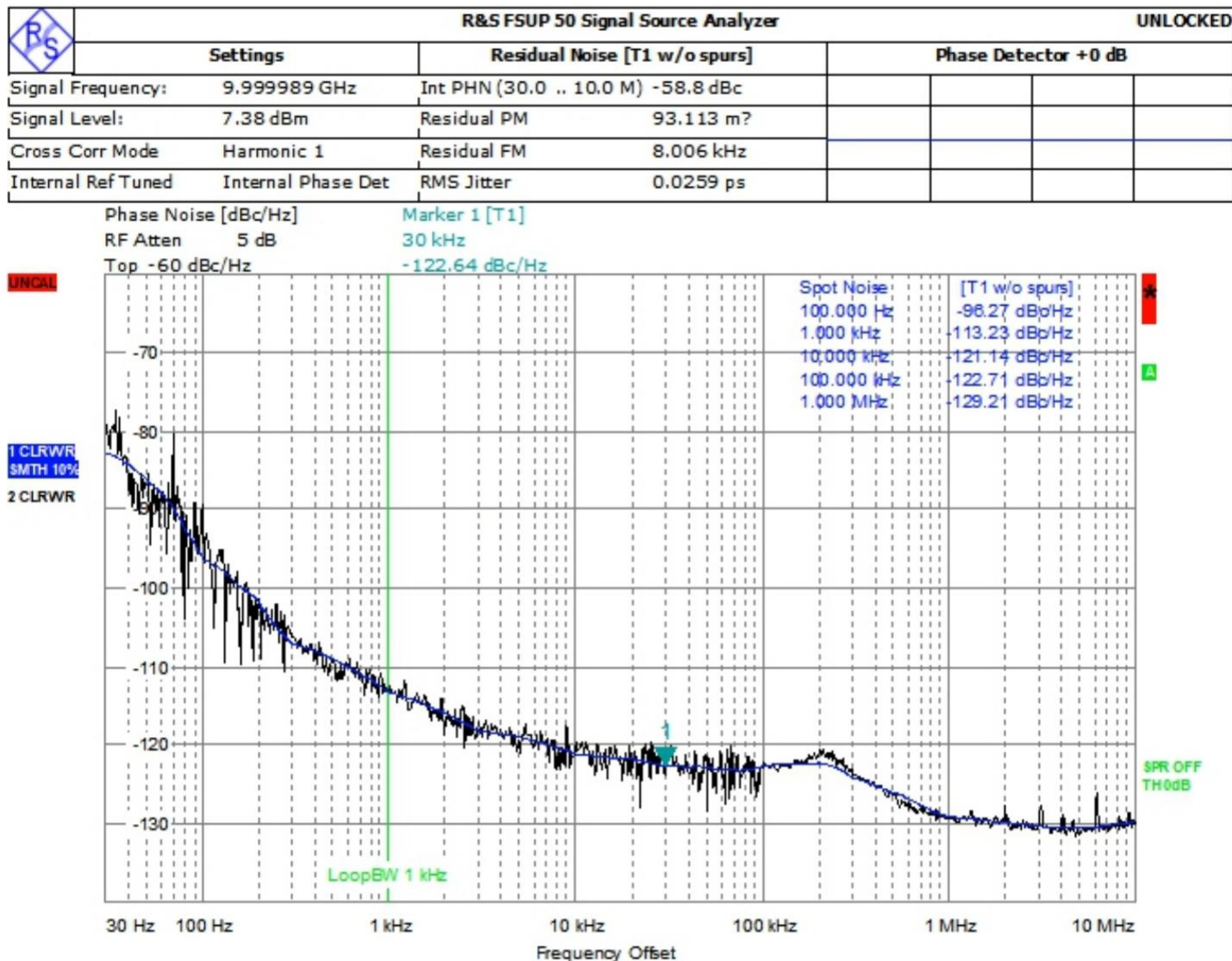
The feature text specifies 146 × 95 × 18 mm, while the specification table states 146.1 × 95 × 18 mm. Both source values are retained.

## Source Catalogue Overview

The OBFS110 series is an ultra-fast frequency-hopping source with switching between any two frequencies in its specified range in 300 ns or less. The family covers 1.25 to 40 GHz with a minimum frequency step of 10 kHz and low phase noise: at 10 GHz output, phase noise reaches -110 dBc/Hz at 1 kHz offset. Its compact 146 × 95 × 18 mm package is suitable for many RF systems, particularly fast frequency-hopping systems with stringent switching-time requirements. The source describes established design and manufacturing processes intended to provide high reliability and suitability for demanding RF systems.

# MEASUREMENT CURVES

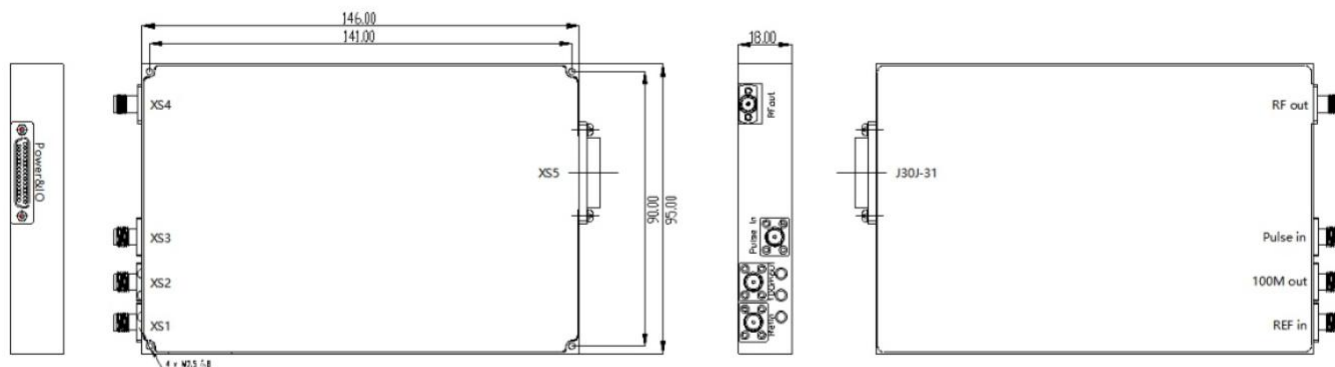
## 10 GHz Source Measurement Record



Source measurement record: analyzer displays UNLOCKED.

# TECHNICAL INFORMATION

## Mounting Dimensions



Dimensions in mm.

## Connector Definitions

| Connector               | Definition                  |
|-------------------------|-----------------------------|
| XS1 / REF in            | SMA female                  |
| XS2 / 100M out          | SMA female                  |
| XS3 / PULSE             | SMA female                  |
| XS4 / RF out            | 2.92 mm female              |
| XS5 / Power and control | J30J-31 miniature connector |

# INTERFACES & PIN ASSIGNMENTS

## J30J-31 Power / Parallel-Control Pin Assignments

| Pin  | Definition                                       |
|------|--------------------------------------------------|
| 1    | +12 V                                            |
| 2    | LD: lock indication                              |
| 3    | +12 V                                            |
| 4    | NC                                               |
| 5    | GND                                              |
| 6    | N1: parallel control word, least significant bit |
| 7-26 | N2-N21: parallel control word                    |
| 27   | PULSE: pulse modulation input                    |
| 28   | N22: parallel control word, most significant bit |
| 29   | NC                                               |
| 30   | LE: latch enable                                 |
| 31   | NC                                               |