

## Ultra Low Phase Noise Frequency Synthesizer

YX-TFS35Y-10

## Features:

- ◆ Broadband output frequency: 5~10GHz
- ◆ Excellent phase noise (at 10GHz):
  - 122dBc/Hz@1kHz
  - 140dBc/Hz@1MHz
- ◆ Open internal YIG sweep function
- ◆ Built-in low phase noise high stability crystal oscillator



## Frequency Specifications



| MODEL                       | TFS35Y-10                |
|-----------------------------|--------------------------|
| RF Output (RF1)             | RF Output frequency(MHz) |
|                             | 5000~10000               |
|                             | Resolution(Hz)           |
|                             | 0.1                      |
|                             | Switching speed(mS)      |
|                             | ≤20(TYP)                 |
| RF Output (RF1)             | Output power(dBm)        |
|                             | ≥10                      |
|                             | Frequency stability      |
|                             | ±0.2ppm(internal clock)  |
| RF Output (RF1)             | Spur(dBc)                |
|                             | ≤-75dBc(Typ) / -70(Max)  |
|                             | Harmonics(dBc)           |
|                             | ≤-10                     |
| Clock Output (RF1)          | Output frequency(MHz)    |
|                             | 100                      |
|                             | Output power(dBm)        |
|                             | ≥10                      |
| Clock Output (RF1)          | Spur(dBc)                |
|                             | ≤-80 dBc                 |
|                             | Harmonics(dBc)           |
|                             | ≤-30 dBc                 |
| Output Phase Noise(100 MHz) | dBc/Hz@100Hz             |
|                             | ≤-135                    |
|                             | dBc/Hz@1kHz              |
|                             | ≤ -167                   |
| Output Phase Noise(100 MHz) | dBc/Hz@10kHz             |
|                             | ≤ -178                   |
|                             | dBc/Hz@100kHz            |
|                             | ≤ -180                   |
| Output Phase Noise(100 MHz) | dBc/Hz@1MHz              |
|                             | ≤ -180                   |

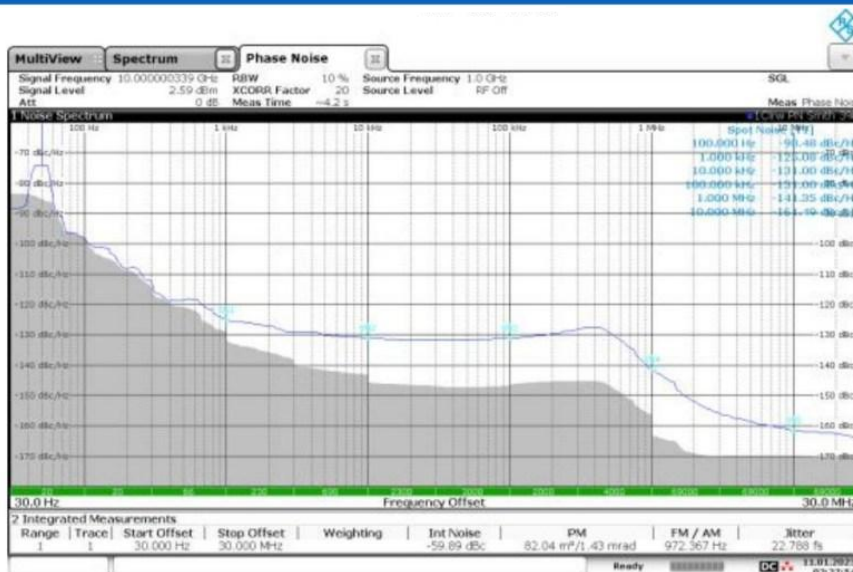
| MODEL                          |                | TFS35Y-10 |
|--------------------------------|----------------|-----------|
| Input reference frequency(MHz) |                | 100       |
| Phase Noise(10MHz)             | dBc/Hz@1 Hz    | ≤-110     |
|                                | dBc/Hz@10 Hz   | ≤-130     |
|                                | dBc/Hz@100 Hz  | ≤-140     |
|                                | dBc/Hz@1 kHz   | ≤-155     |
|                                | dBc/Hz@10 kHz  | ≤-165     |
|                                | dBc/Hz@100 kHz | ≤-165     |
|                                | dBc/Hz@1 MHz   | ≤-170     |
| Input reference power(dBm)     |                | 7±3       |

Note: TFS35Y-10 output signal phase noise in the frequency offset 1Hz~100Hz is correlated with the phase noise of the reference 10MHz.

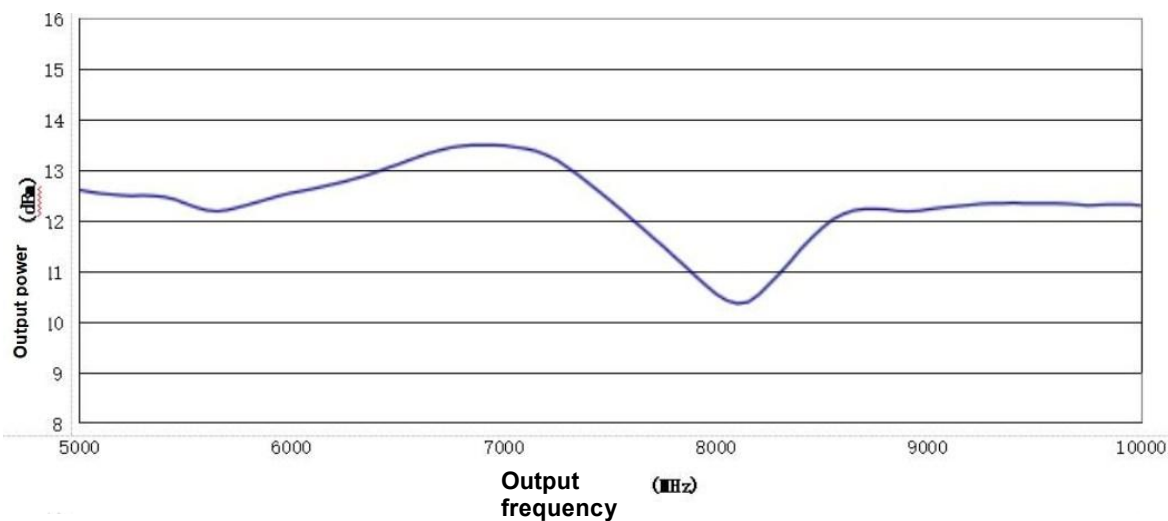
## Phase Noise

| TFS35Y-10     | Output frequency(5~10Gz) |       |
|---------------|--------------------------|-------|
| Phase Noise   | 5Ghz                     | 10Ghz |
| dBc/Hz@100Hz  | ≤-101                    | ≤-95  |
| dBc/Hz@1kHz   | ≤-127                    | ≤-122 |
| dBc/Hz@10kHz  | ≤-135                    | ≤-130 |
| dBc/Hz@100kHz | ≤-135                    | ≤-130 |
| dBc/Hz@1MHz   | ≤-144                    | ≤-140 |

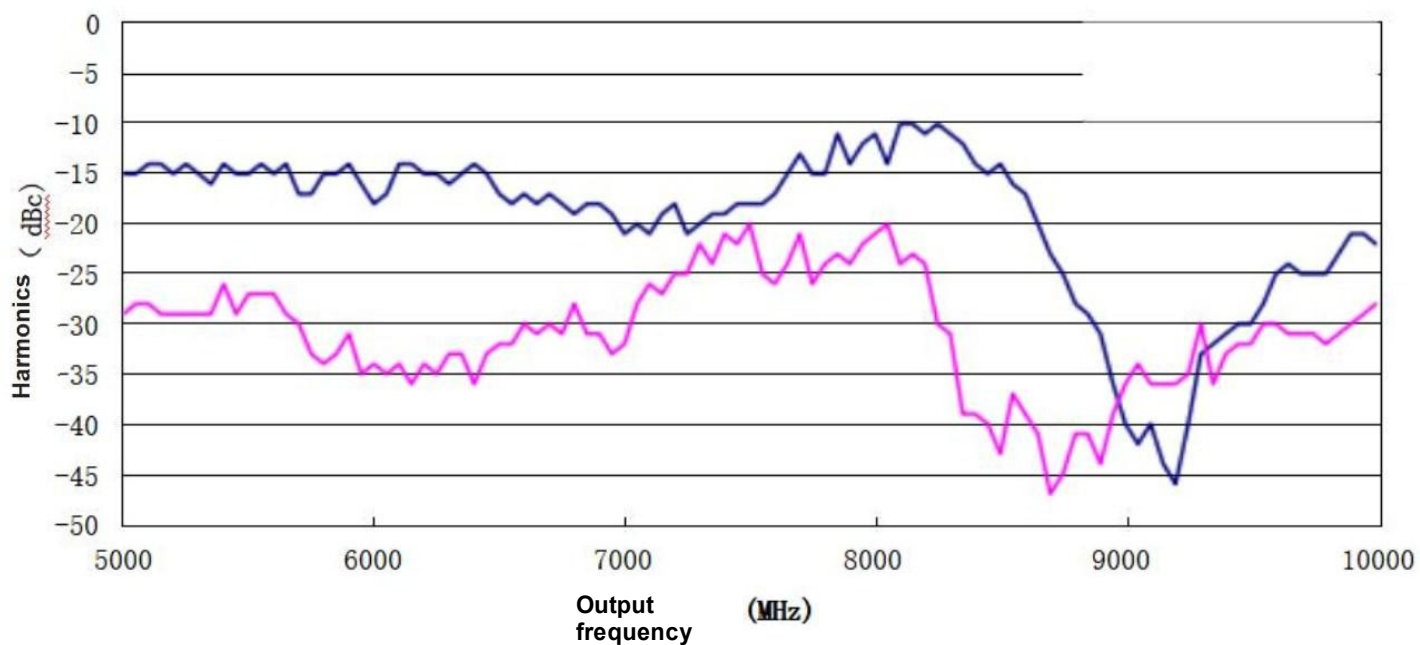
## 10GHz Phase Noise Curve



## Output Power



## Harmonics



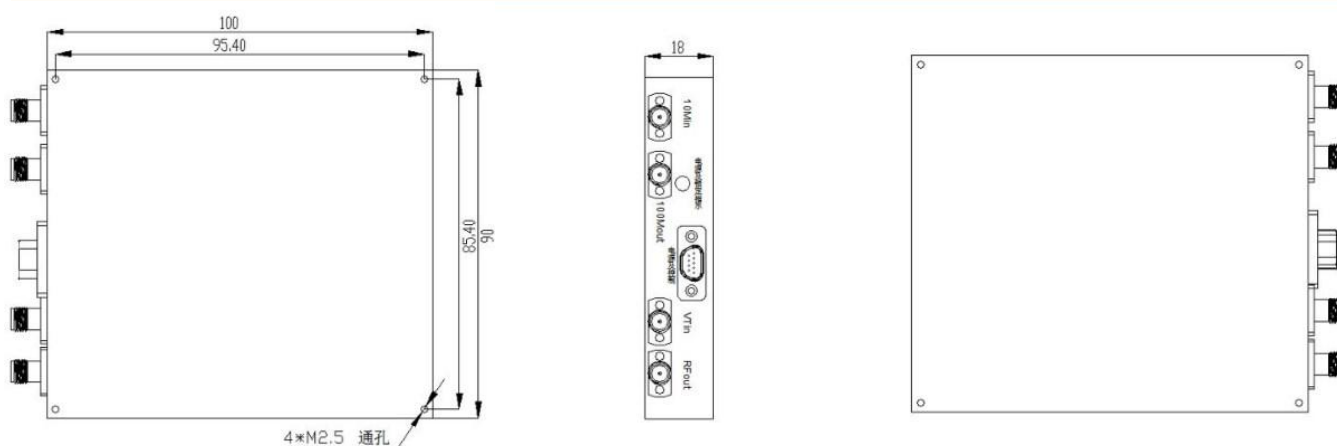
## Electrical

|                         |                                      |
|-------------------------|--------------------------------------|
| Input Voltage (V/A)     | +12V ± 0.5                           |
| Max Voltage             | +15V                                 |
| Current                 | ≤ 2.2 A(Warm-up)/ ≤ 1.95A(Stabilize) |
| Communication Interface | SPI                                  |

## Environmental

|                           |             |
|---------------------------|-------------|
| Operating Temperature (℃) | 0~+50       |
| Storage Temperature (℃)   | -20~+70     |
| Weight                    | ≤ 0.45kg    |
| Dimensions                | 100*90*18mm |

## Dimensions (Unit: mm)



## Interface Connector

|                            |      |                            |                                       |   |           |
|----------------------------|------|----------------------------|---------------------------------------|---|-----------|
|                            |      |                            |                                       |   |           |
| 10M in                     |      | SMA-K (detachable)(Φ0.38)  |                                       |   |           |
| RF out                     |      | SMA-K (detachable) (Φ0.38) |                                       |   |           |
| 100M out                   |      | SMA-K (detachable) (Φ0.38) |                                       |   |           |
| VT in                      |      | SMA-K (detachable) (Φ0.38) |                                       |   |           |
| Power and digital          |      | J30J-9-ZKP                 |                                       |   |           |
| J30J discipline definition |      |                            |                                       |   |           |
| 1                          | +12V | 4                          | GND                                   | 7 | MISO(SPI) |
| 2                          | +12V | 5                          | LD(Lock detect: TTL high when locked) | 8 | SCK(SPI)  |
| 3                          | GND  | 6                          | MOSI(SPI)                             | 9 | LE(SPI)   |