

## Circuits parameters analyzer DPNA-6G AXIe

The AXI DPNA-6G module is the world's first circuits parameters analyzer, in accordance to the AXIe-1 standard. Also, the AXI DPNA-6G is the first Russian device to comply with the AXIe-1 standard.

In the circuits parameters meter mode, the AXI DPNA-6G module measures the vector values of the network parameters via two ports: transmission factors (S12, S21) and reflections (S11, S22). At the same time, all necessary types of calibrations are supported: one- and two-port short-circuits, XX, coordinated load, transmission normalization. The software supports the import of third-party calibration parameters.

In the measuring receiver mode, the module provides:

- generation of a harmonic signal (frequency synthesizer);
- spectrum analyzer and power level in a given band;
- measuring the frequency of a known signal;
- measurement of analog modulation parameters;
- phase noise measurement.

Modular design in accordance with the AXIe-1 standard allows to achieve compactness at sufficiently high operating parameters, and the use of SMA connectors allows reducing the number of used equipment (adapters and calibration measures). Unified software allows automatic calibration and verification of the main characteristics of the device.

The listed features of the device, the characteristics comparable to russian and some foreign products, and the possibility of software expansion of the set of options allow it to take the right place in the solution of problems on checking the parameters of antennas,



- Frequency range up to 6000 MHz
- Maximum output level up to +10dBm

linear active and passive nodes, and devices with frequency transfer. Sufficiently versatile hardware allows you to extend the functionality of the module with the help of software options by combining several devices in one.

It is also possible to scale the system to a larger number of ports using RF switches.

### Key features:

- two modes of operation: the meter of the parameters of the circuits, the measuring signal receiver;
- control over Ethernet 100BASE-T and PCIe x4 Gen 2;
- fully compatible with AXIe-0 architecture;
- the possibility of working from the system source of the reference frequency of the chassis AXIe;
- semi-automated calibration process using reference measures;

## Specifications

Frequency range from 60 to 6000 MHz	Limits of permissible relative error setting the frequency of the source of the output signal $\pm 1 \times 10^{-8}$
Level of harmonic components of output signal power 0 dBm not more than -25 dBs	The level of non-harmonic components in the output signal power 0 dB / mW, not more than -30 dBc
Output signal level, in the frequency range from 60 to 6000 MHz from -80 to +10 dBm	Limits of the permissible absolute error setting the output power level $\pm 1$ dB
RMS trace of the signal receiver at the filter band 3 kHz, not more than 0,001 dB	Directionality, uncorrected, not less than 18 dB
Limits of the permissible absolute error of the transmission coefficient modulus at value of reflection coefficient modulus the device under investigation is no more than -32 dB and the values coefficient of transmission coefficient: <ul style="list-style-type: none"><li>• from 5 dB to 15 dB - 0,2 dB</li><li>• from -50 to +5 dB - 0,1 dB</li><li>• from -70 to -50 dB - 0,2 dB</li><li>• from -90 to -70 dB - 1,0 dB</li></ul>	Limits of the permissible absolute error phase of the ransmission factor at value of reflection coefficient modulus. The device is no more than -32 dB and values of the transmission coefficient modulus: <ul style="list-style-type: none"><li>• from 5 dB to 15 dB - 2 deg.</li><li>• from -50 to +5 dB - 1 deg.</li><li>• from -70 to -50 dB - 2 deg.</li><li>• from -90 to -70 dB - 6 deg.</li></ul>
Limits of the permissible absolute error measurements of the reflection coefficient modulus at its values: <ul style="list-style-type: none"><li>• from -15 to 0 dB - 0.4dB</li><li>• from -25 to -15 dB - 1.0 dB</li><li>• from -35 to -25 dB - 3.0 dB</li></ul>	Limits of the permissible absolute error measurements of the phase of the reflection coefficient at its values: <ul style="list-style-type: none"><li>• from -15 to 0 dB - 3deg.</li><li>• from -25 to -15 dB - 6 deg.</li><li>• from -35 to -25 dB - 20 deg.</li></ul>
The level of noise in the band measuring filter 100 Hz, not more than -125 dBm	The reflection coefficient of the port in the mode source of the signal is uncorrected, not more than -18 dB
The reflection coefficient of the port in the mode signal receiver is uncorrected, not more -18 dB	Directionality, uncorrected, not less than, dB 18