

EME Conference 2002 - N/F Contest

N/F Contest consists of the noise figure N/F [dB] and the associated gain G [dB] measurement on preamplifiers (LNA) and on RX part of transverters in the frequency bands 144, 432, 1296 MHz directly and on 2,3 + 3,4 + 5,7 + 10 GHz via auxiliary transverters.

On each frequency band (category) the LNAs and/or transverters will be settled in an order by the best measured N/F.

The overall N/F Contest results will be officially announced during the Sunday conference program.

The three best units in each category will acquire the Kepler diploma. The best preamplifier in each category will be appreciated by special prize from the EME Conference committee.

The measurement will be realized in Czech Academy of Sciences in the professional laboratory provided with HP8970B N/F measuring set and HP346B noise source.

The measurement of N/F and associated gain will cover the input frequency bands (categories) and the coaxial connector interfaces defined in the Table 1.

Table 1

| Frequency band (Category) | | Connectors (WG) available: | | | Remarks: |
|------------------------------|----------|---------------------------------------|----------------------------|----------------------|--|
| | | Connector: | WG: | Other types: | |
| A | 144 MHz | N a SMA (male and/or female) | n.a. | 7/16, TNC, BNC | In other cases the device must be provided with a transition (adaptor) to the available type |
| B | 432 MHz | | n.a. | | |
| C | 1296 MHz | | n.a. | | |
| D | 2,3 GHz | | n.a. | n.a. | |
| E | 3,4 GHz | | R40 (WR229) | n.a. | |
| F | 5,7 GHz | | R70 (WR137) | n.a. | |
| G | 10 GHz | | R100 (WR90) R120 (WR75) | n.a. | |

N/F Contest Terms:

Only the equipment (LNA/Transvertor) corresponding to the data presented in Table 1 will be allowed to enter the contest. In the case of transvertor the output (intermediate) frequency must fall into the frequency range of 10 to 1600 MHz.

Individual LNAs from 2,3 GHz up to 10 GHz will be measured via transvertors (convertors), preceding the NF measuring instrument. DB6NT and DownEast Microwave transvertors with frequency inputs on 2304/2320/2424 MHz, 3400/3456 MHz, 5760 MHz and 10368 MHz providing 144 MHz output will be employed.

Common terms for contest handover and return of equipment (LNA/transvertor):

To assure the participation in the N/F Contest the particular equipment must be handed over at the EME conference reception in the hotel latest on Friday, August 16, 2002 till 21,00 UTC.

Each unit posed to competition will be assigned with an ordinal number label and the owner (contestant) will be given the receipt document confirming the equipment handover.

Due to the fact that N/F Contest is strictly anonymous, each contestant is asked to support the objectivity by removing all the respective identity identifiers (like the call sign, etc.) from the units under test.

Tested equipments will be returned to the respective contestants at the official announcement of the N/F Contest results.

If an equipment will not be handed back during the official program it will be available in the EME Conference reception up to Sunday, August 18, 2002 and will be handed back to the contestant against to the respective receipt document.

Any individual requirements as regards the handover and return of equipment under the N/F contest shall be agreed in advance at the EME Conference reception, or with the N/F Contest measurement providers respectively.

Technical rules for the admission of equipment:

The following rules will be applied at the equipment handover to enter the N/F Contest:

- Input frequency band (to assign category), and the output frequency data in the case of a frequency conversion (transverter).
- Type and specification of the equipment under test (e.g. LNA or TRX, NF<0.5dB at 15 dB gain, etc.), eventually (wanted !) type of transistor used on the input (e.g.. MGF1302, ATF36077,) and the maker (producer) information (e.g. HB LNA - design W5LUA, TRX DB6NT,),.
- Fully understandable equipment specifications and four-square definition of power requirements and respective connections (e.g. the red color wire to +12 V, power consumption <100 mA, -12 V connect to the body of equipment under test, etc.).
- Each contestant takes full responsibility for the respective provisions to allow the equipment to be easily and unambiguously connected to the power supply to enable its contest measurement (e.g. flexible colored and/or labeled wires with free ends, etc.).

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