

## How to set your user defined test frequency in WM-11

The Wandermeter WM-11 from Pendulum Instruments is a tool for verifying wander parameters in networks. WM-11 has some 20 fixed frequencies and data rates, but **the user can easily add custom test frequencies, following the procedures below**, provided that it fulfills the following:

1. It must be a signal with a fix period (clock type or sine wave). No data streams like HDB3 with variable period
2. The frequency must be between 20 Hz and 60 MHz
3. The input level must be between 60 mV and 10 Vp-p within a -5V...+5V window

4. The test frequency must be expressed as an 16-bit integer number between 0 and 65535 in Hz or kHz. This means that for example 2000 Hz is OK, so is 12345 kHz, but not 99999 Hz

**The procedure to enter a new test frequency is as follows:**

1. Open the text file W SIGNALS.DAT found in the Wanderview directory (normally C:\Program Files\Pendulum Instruments\WanderView) in a text editor (e.g. Notepad). This file contains groups of frequency definitions. Just open the file and study it. The structure is easily understood:

```
WSIGNALS.DAT - do not modify

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16:54

[4 kHz]
Frequency = 4000 Hz
Code = None
Group = 10
.
.
.
[52 Mbit/s]
Frequency = 51840000 Hz
Code = AMI
Group = 130
```

2. Insert a new frequency definition, like e.g.

```
[19.44 MHz]
Frequency = 19440000 Hz
Code = NONE
Group = 17
```

The group structure is as follows:

- First line: This is the signal name label within brackets
- Second line: This is the frequency value expressed as an integer number of Hz. Note you can NOT write e.g. "19.440 MHz"
- Third line: Code = NONE means a clock signal, with the same period for all cycles (no data coding)
- Fourth line: Group = a unique number (integer), not previously used. This is normally used to group mask definitions to certain signal types

3. Repeat step 2 and add all new test frequencies you like, there is no limit in WanderView, but there is a limit of how many test signals you can simultaneously use in WM-11. In WM-11 you can have totally 11 test signals defined, thereof 7 are user selectable and 4 are fixed (2.048 MHz/Mbps and 1.544 MHz/Mbps)

4. Save the edited file under the same name (WSIGNALS.DAT)

5. Open the text file **SIGGRP.DAT** in the Wanderview directory in a text editor (e.g. Notepad). This file contains a list of the signal groups used for matching possible masks to the relevant signals.

Just open the file and study it. The structure is easily understood, it contains a list of signal groups with matching group numbers and names:

```
SIGGRP.DAT - do not modify

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1, "E1 (2.048 MHz, 2.048 Mbit/s)"
2, "T1 (1.544 MHz, 1.544 Mbit/s)"
10, "4 kHz"
.
.
.
130, "52 Mbit/s"
```

6. Insert a new line, corresponding to the new signal defined in W SIGNALS.DAT, e.g.

```
17, "19.44 MHz"
```

7. Save the edited file under the same name (SIGGRP.DAT)

8. Start WanderView and connect to the WM-11

9. Select "Signal types" and download the new defined signals (e.g. "19.44 MHz") to WM-11

10. Now the WM-11 is ready to accept the new test frequency

11. DONE! Start to MEASURE and ANALYZE (MTIE, TDEV, ADEV etc)

