**Gathered information on how to configure a RadiSense probe in the R&S EMC32 software**

For an example EMC32 device configuration file see: <https://www.raditeq.com/wp-content/uploads/2021/01/RadiSense_DeviceConfiguration_EMC32.docx>

Another example of the DeviceConfiguration file for a multislot RadiCentre is:

|  |
| --- |
| [FileInfo]  Author=Rohde&Schwarz  Version=2.0  MeasClass=0  Start=0.0  Stop=0.0  Description=GenericFieldProbe  [General]  ;ATTENTION ! Do not modify the next line !!  Driver=GenericFieldProbe  ;  ;From here on lines may be modified  ;  DeviceVersion=1.0  Miscellaneous=RadiSense Field Probe  [VisaSettings]  ;1=CR 2=NL 3=CR+NL  EOITermination=1  VisaTimeout=5000  ;Parity 0=None, 1=Odd, 2=Even  Baud=115200  DataB=8  StopB=1  Parity=0  AnswerOnSetCmd=1  ;Visa strings can have leading characters:  ; @n@ wait n milliseconds after this command  [Identify]  ;Identification Query1  Count=1  VisaLine1=\*IDN?  VisaResponse1=Raditeq  [Initialize]  ;Initialize on system start  Count=0  [StartTest]  ;Initialize on start test  ;set mode  Count=1  VisaLine1=1:CLEAR  [StopTest]  ;do on stop test  Count=0  [CheckActive]  ;Wait for probe is active, e.g. laser is on  Count=1  VisaLine1=1:STATUS?  VisaResponse1=LASERON  [SetAxis]  ;Command for setting the measurement axis  ;count may be > 1  Count=0  [SetAvgCount]  ;Command for setting the averaging count of measured values  Count=1  VisaLine1=1:FILTER 3  [DoZeroing]  ;Command for zeroing of the probe  ;count may be > 1  Count=0  [ActivateCorr]  ;Command for activating the frequency correction  Count=0  [SetMeasFreq]  ;Command for sending the current measurement freq in Hz to the device for frequency correction  ;Represented by %FRQ%  Count=1  VisaLine1=1:FREQ %FRQ%  [Trigger]  ;Command for triggering a measurement, count may be > 1  Count=0  [TriggerForce]  ;Command for triggering a measurement, count may be > 1  Count=0  [TriggerStatus]  ;Wait for probe is triggered  Count=0  [ReadAxisResult]  ;Read Result for current axis, count must be => 1  ;Current axis is represented by %AXIS%  Count=0  [ReadAllAxis]  ;Read Result for all axis, count must be => 1  Count=1  VisaLine1=1:D5  ;Header offset: first delete 2 characters then split by ';' character  HeaderOffset1=2@;  ਍ |

For some background information (but using the codes of the LumiLoop probes), see: <https://www.raditeq.com/wp-content/uploads/2021/01/Format_Specification_for_Generic_Field_Probe.pdf>

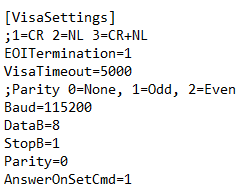
It is advised to use the Generic Field Probe driver

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This driver also support VISA interface.

A short description how to set this up in EMC32:

1. The attached file “RadiSense EMCenter.DeviceConfiguration” needs to be copied into the “C:\ProgramData\EMC32\Configuration\Others” folder
2. Open the file with an editor and modify in each “VisaLine” the card index, in the reference file “1:” to the current index of your RadiSens plug-in cards
3. If you want to connect via USB interface that is mapped to a virtual COM port the interface settings in the section “VisaSettings”. Take also care on the end character EOITermination set here to CR.  
   
4. Restart EMC32 when you saved the file.
5. In the properties of the driver you need to select the corresponding file you modified above

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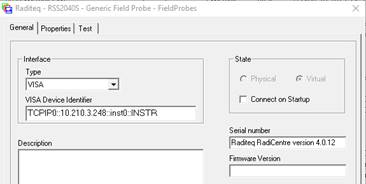
Description automatically generated

1. In the General tab you need to fill in the VISA resource identifier, for COM port it is “ASRL<x>::INSTR” where x is the COM port index

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1. In case you want to connect via LAN you need to change the VISA Device Identifier to “TCPIP0::<ip address>::inst0::INSTR” where you need to fill in your IP address. Take care to use the same letter case you see.



For a RadiCentre 1 configuration, the prefixes (like ‘1:’)in the commands should be removed. This should be done for all major communication commands (thus for all 5 commands in the DeviceConfiguration file)

In the field probe configuration dialog in EMC32, it is possible to configure the ‘Frequency Correction XYZ (isotropic)’ and also the frequency correction for the individual axes (‘Frequency Correction X’, etc…).

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A calibration certificate of a field probe often specify all those 4 corrections, and what will happen if all those 4 corrections are specified?

Thus if ‘XYZ (isotropic)’, and ‘X’ and ‘Y’ and ‘Z’ is specified, does the driver only use one of the corrections, or are two corrections (for example ‘XYZ (isotropic)’ and ‘X’) applied on top of each of other?

The EMC32 driver will use one of the following three calculations:

1. Each axis is corrected and the isotropic value XYZ is calculated by the driver. (this is also the case if additional an XYZ correction is defined, which is then thus NOT used)
2. probe supports measurement of individual axis X, Y, Z and but user has defined only the correction for the isotropic XYZ value in the properties dialog: then the isotropic value XYZ is calculated by the driver and finally the XYZ correction is applied.
3. probe supports only measurement of the XYZ isotropic value: only the use of the isotropic XYZ correction is used.