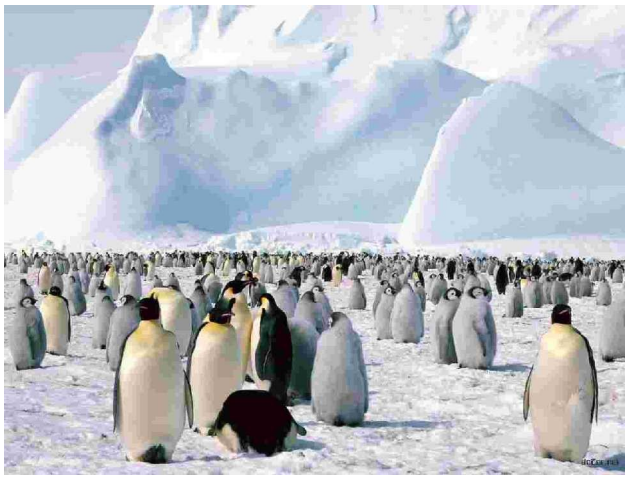
NMDG
LEADING BEYOND S-PARAMETERS

LabVIEW™ and MATLAB™ support @ ICE



6/2012

Summary

Goal: allow engineers to extend the capability of ICE by creating applications in their preferred development environment

Here it is shown that it is possible to interact with ICE from within **LabVIEW**™ 2011 and **MATLAB**™ R2012A using **.NET remoting**

- running on the same machine using an IPC channel (inter-process communication)
- running on different machines using a TCP channel (transmission control protocol)
- interacting with instruments and other schematics configured in ICE
  - control RF and DC sources
  - control switching matrices
  - control RF and DC analysers
  - initiate measurements
  - retrieve calibrated(*) data from analysers and DUT
- possibly directly controlling additional hardware which is not controlled by ICE

(*) the calibration itself needs to be performed in ICE

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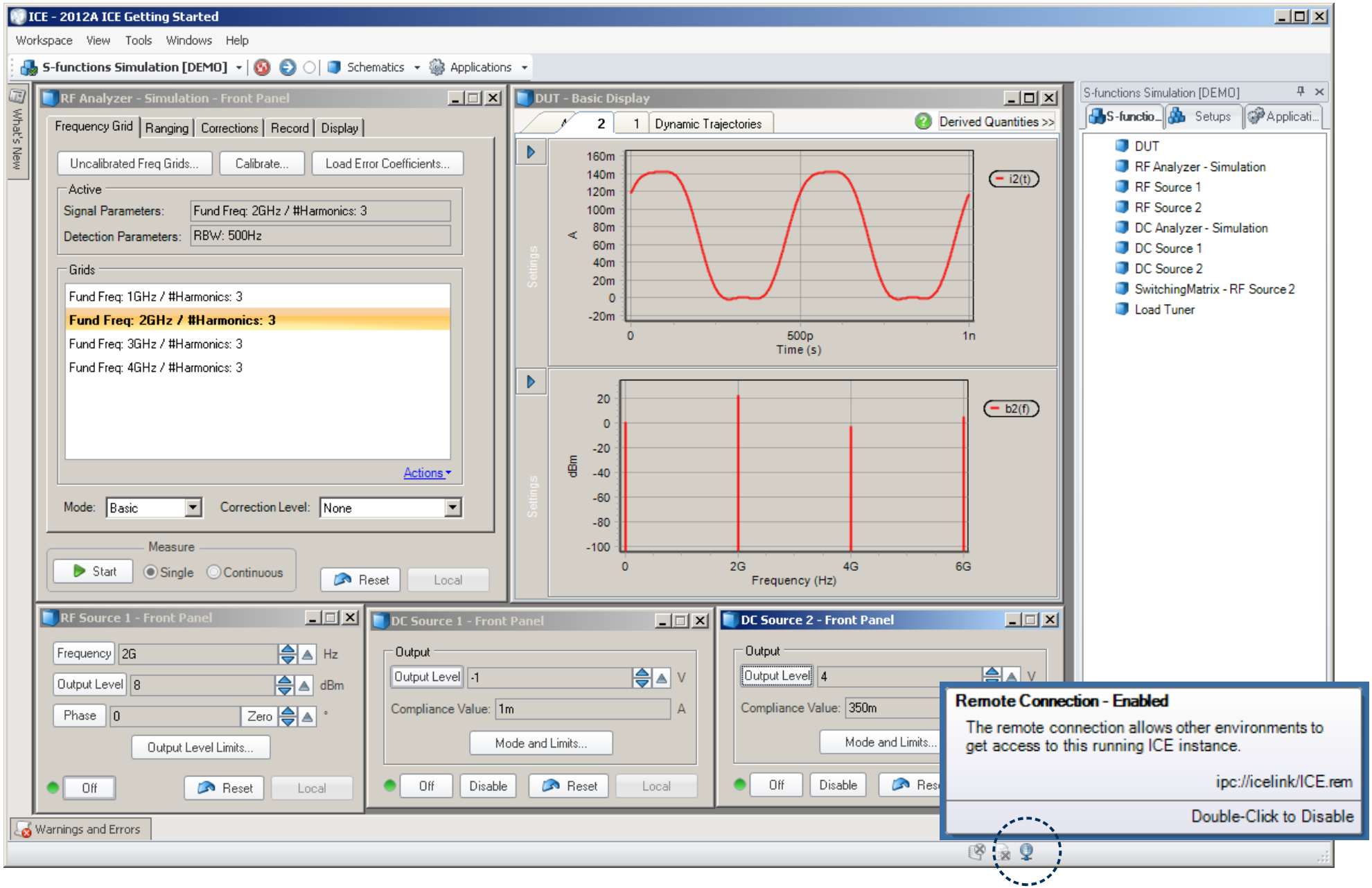
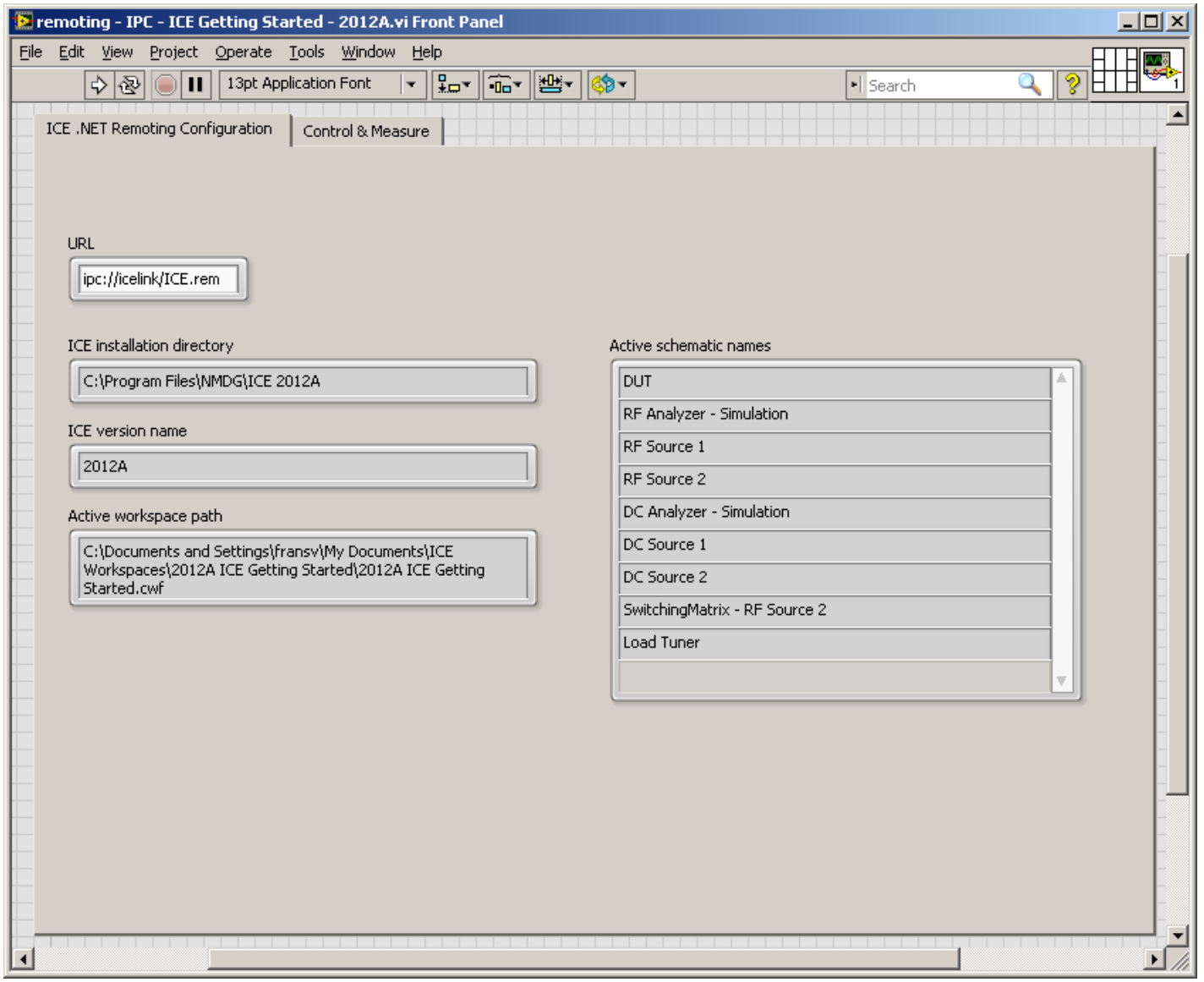
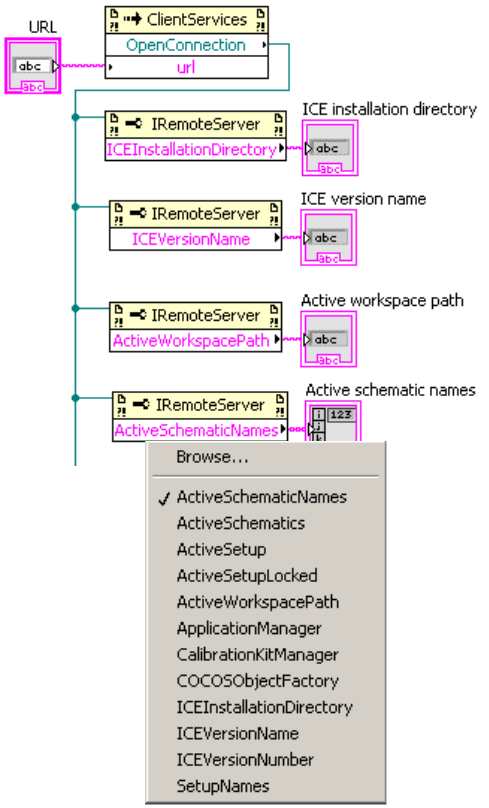
LabVIEW example #1 – ICE Getting Started – using IPC (I)



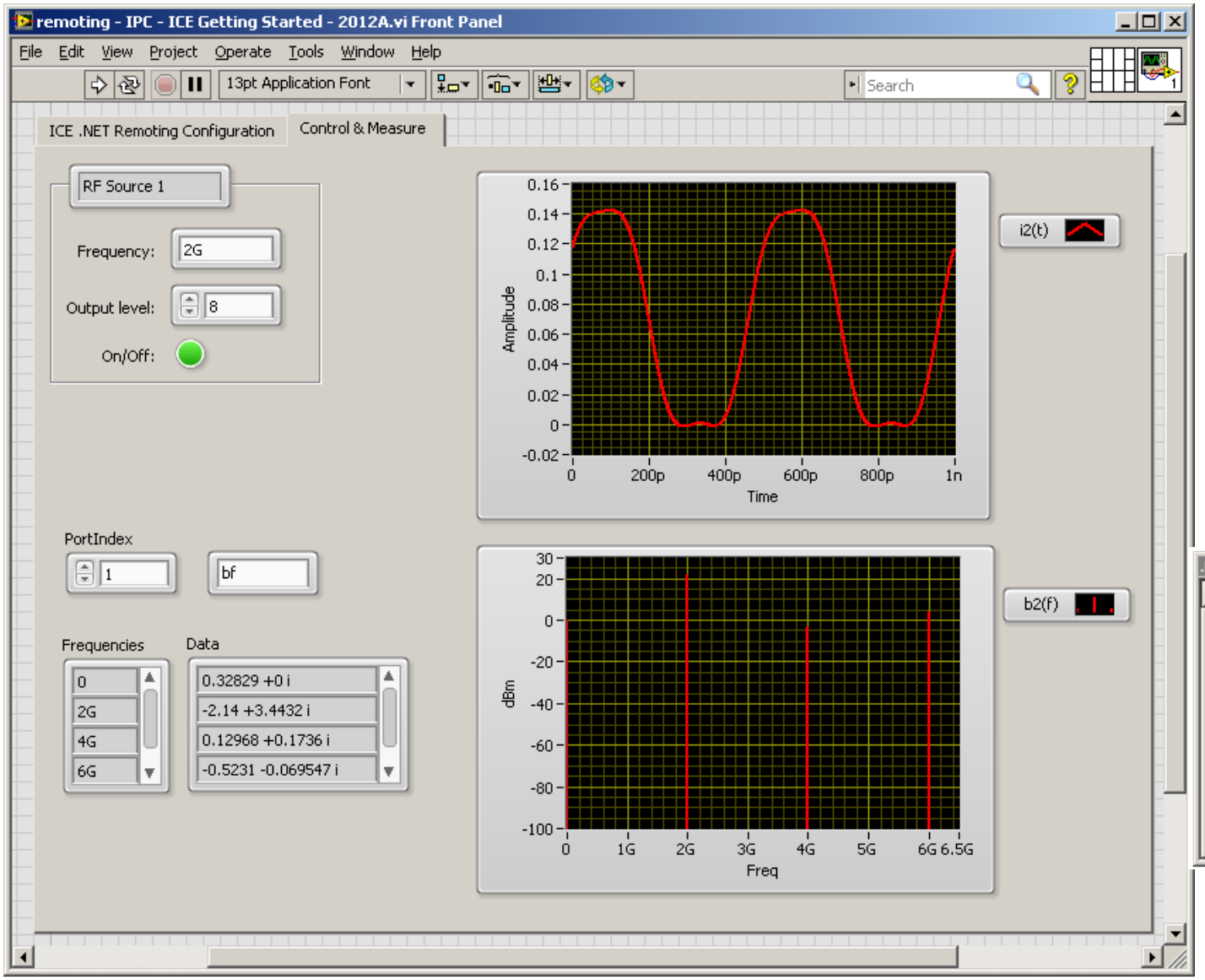
LabVIEW example #1 – ICE Getting Started – using IPC (II)

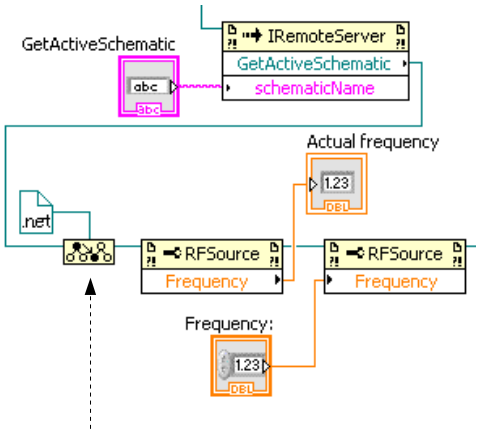


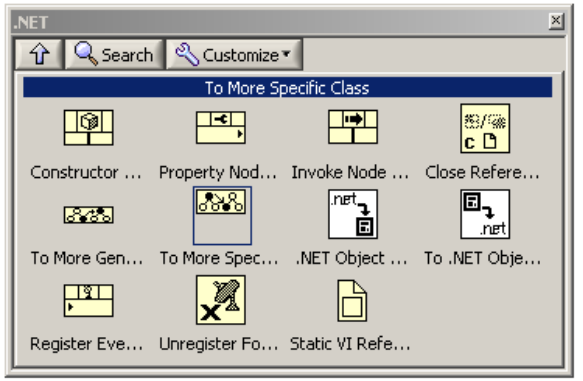


LabVIEW allows to select the desired property or method of the IRemoteServer which is returned when opening the connection at the specified URL

LabVIEW example #1 – ICE Getting Started – using IPC (III)

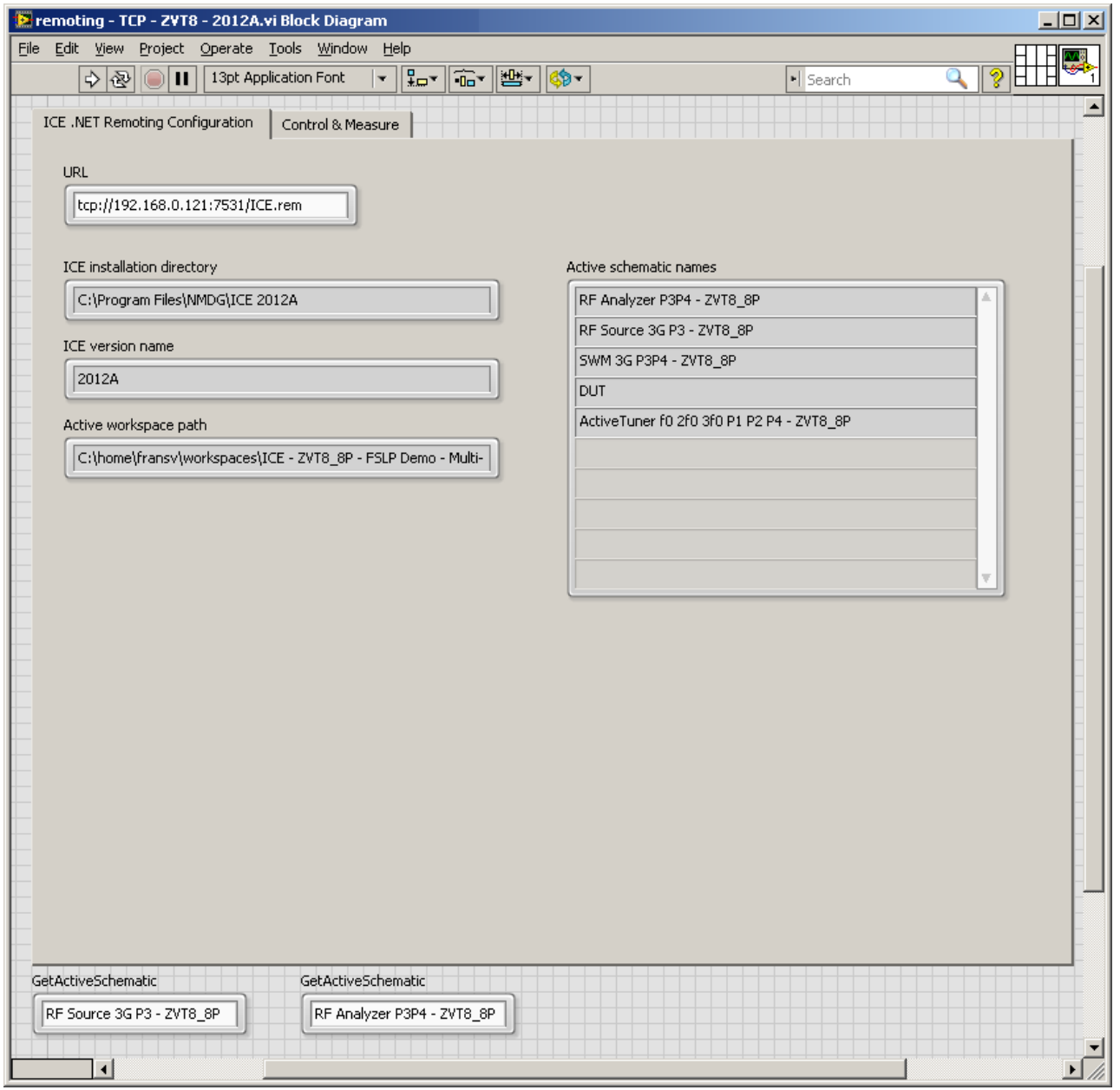






Schematic returned by IRemoteServer must be casted to RFSource in order to access its source-related properties

LabVIEW example #2 – ZVT8 – using TCP (I)

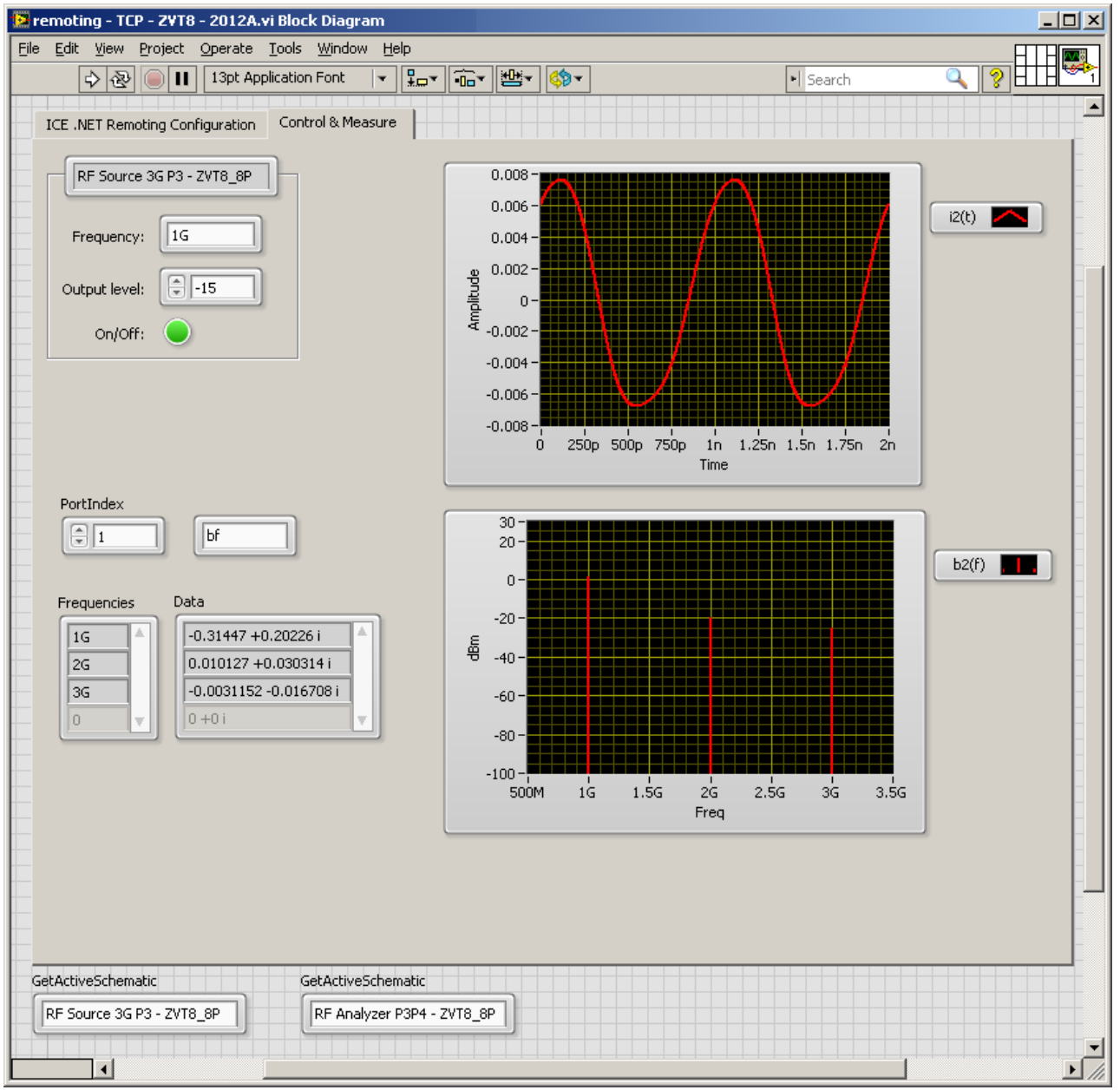


ICE running on a R&S ZVT8
IP address : 192.168.0.121

ICE .NET remoting server “ICE.rem”
listening at port 7531 as TCP channel

LabVIEW running on laptop
connected to the same network

LabVIEW example #2 – ZVT8 – using TCP (II)

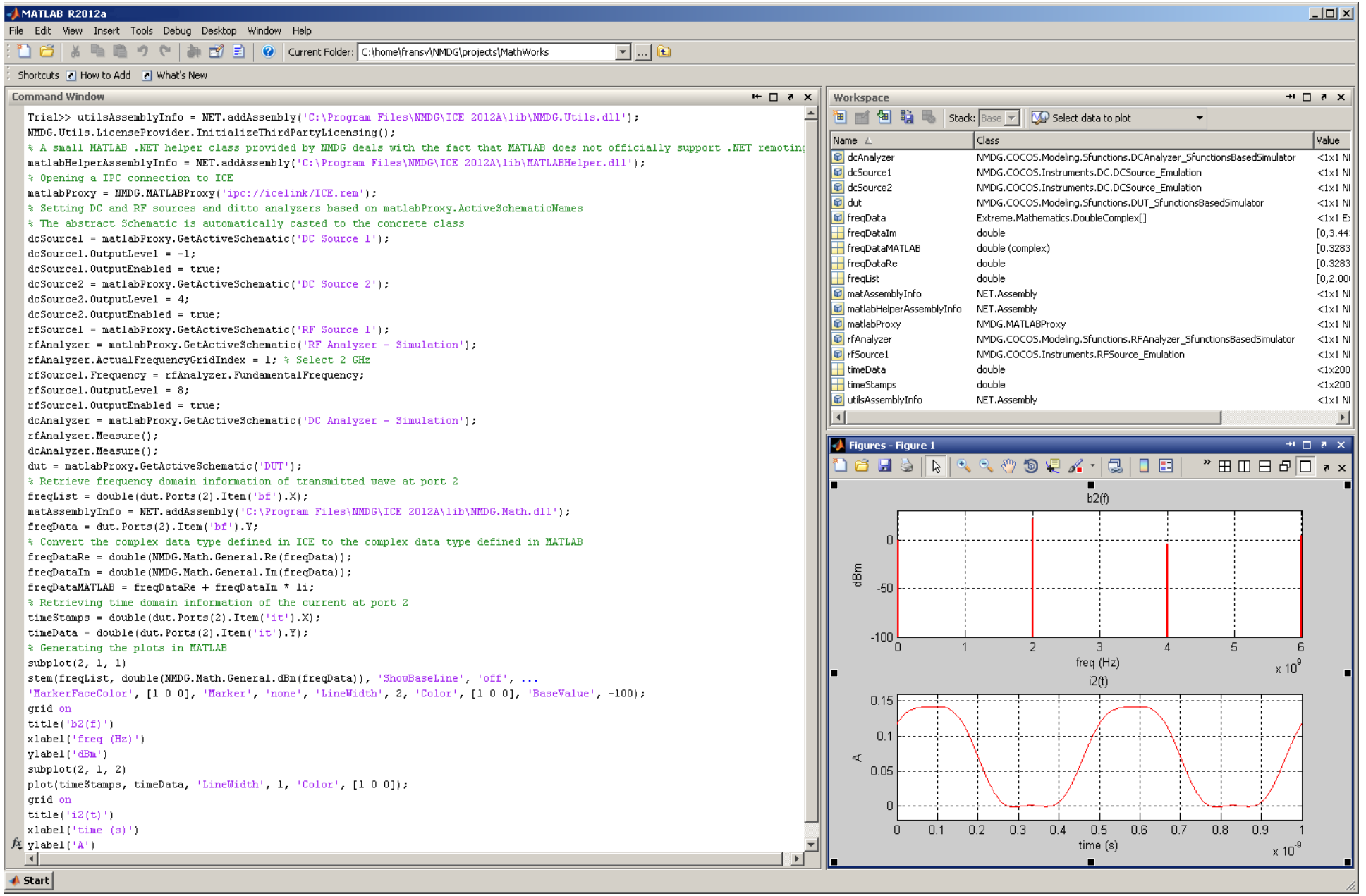


Setting the frequency and output level of the RF source based on the unique name assigned in ICE

Retrieving the time-domain and frequency-domain data from the DUT (e.g. “bf” at port 2)

Converting the complex type defined in ICE to the complex type defined in LabVIEW

MATLAB example – ICE Getting Started – using IPC (TCP also supported)



Acknowledgements

- NMDG wants to thank National Instruments and The MathWorks for their support

Contact info

Want to try this capability?
Contact us
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