R&S IM Spacing Sweep User Guide

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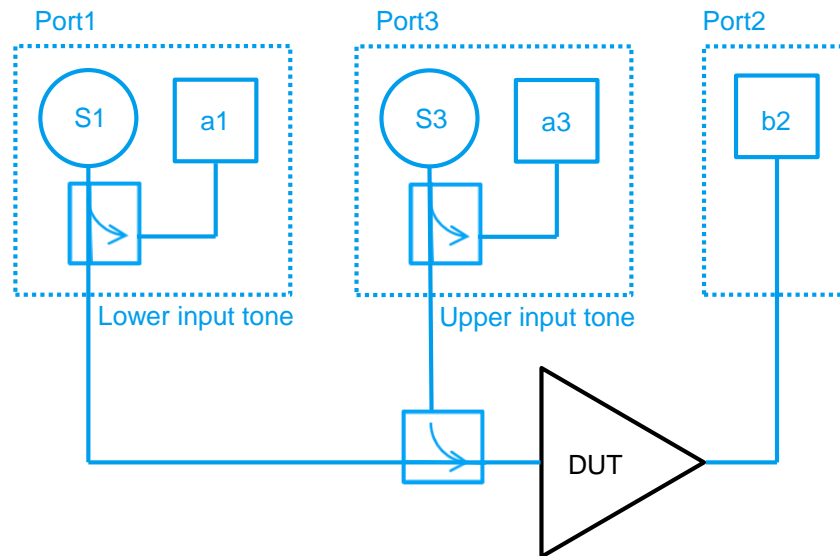
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Typical Setup

- External coupler combined input tones
- Actual setup may vary with measurement needs

Settings

Traces

Type	Feature	Order
Input	Lower	
Input	Upper	
Intermod	Major	3

R&S IM Spacing Sweep 1.3

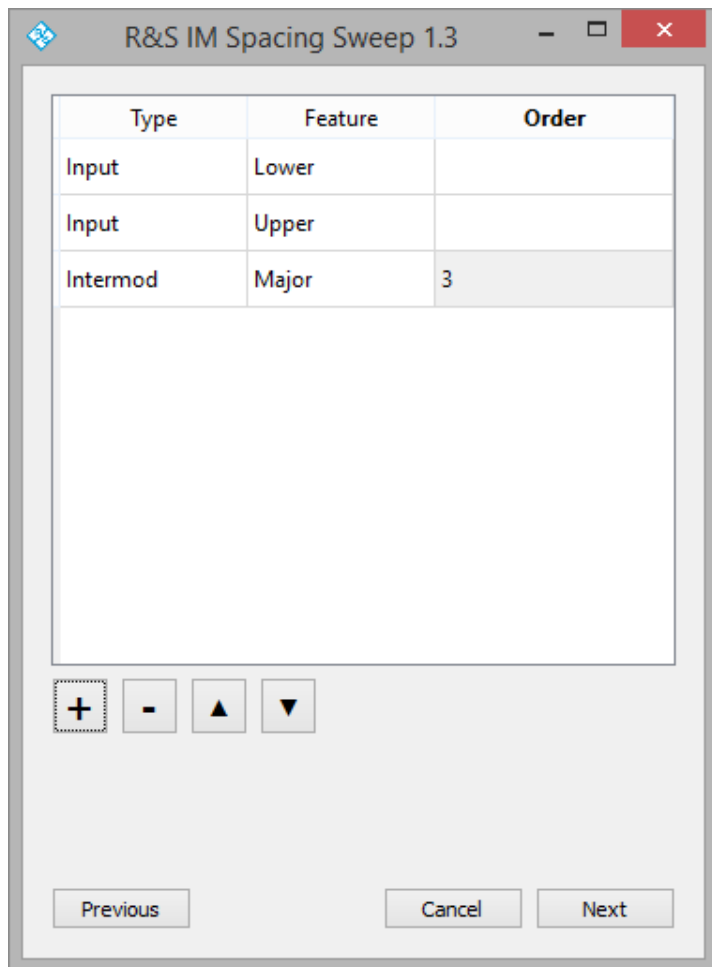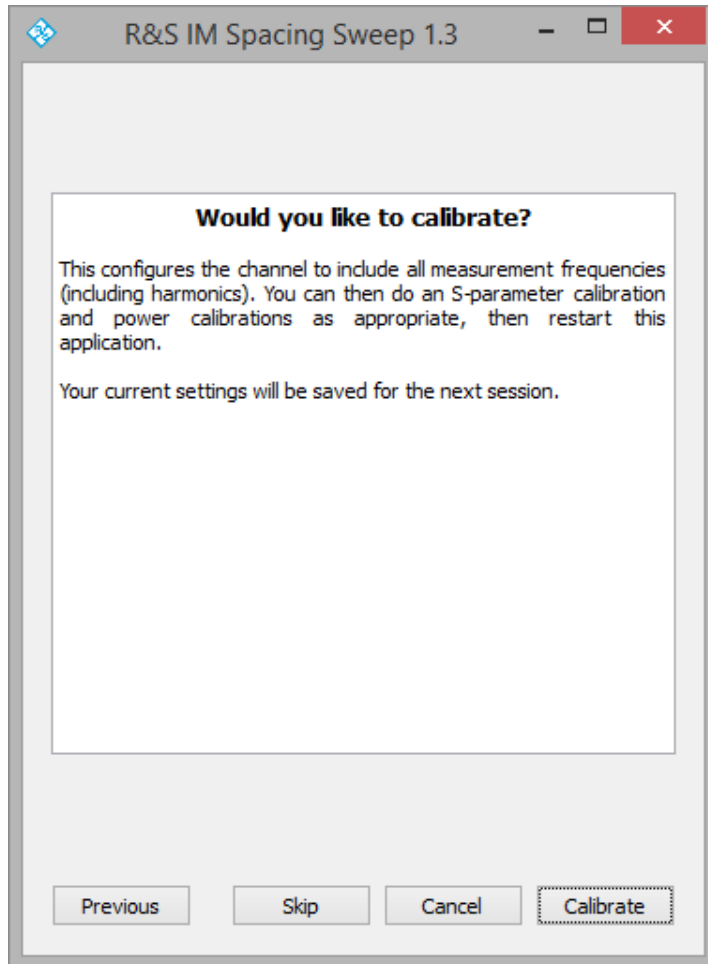+ - ▲ ▼

Previous   Cancel   Next
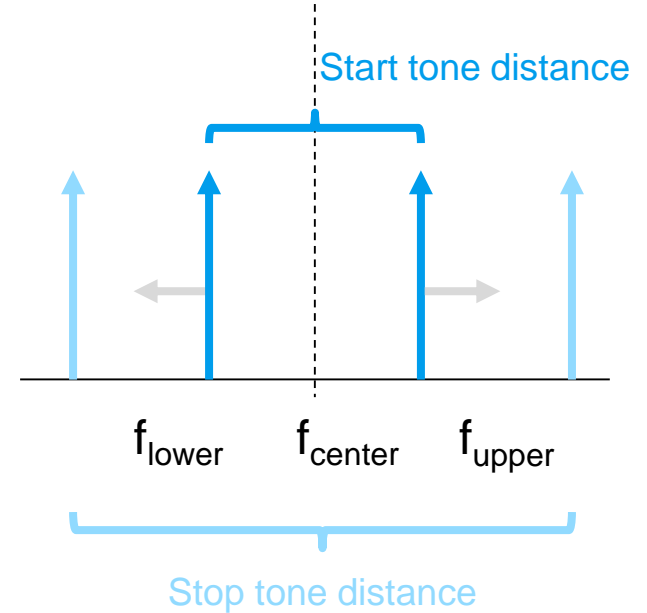
- Type:
  - Input
  - Output
  - Intermod
  - Relative (normalized)
  - Intercept
- Feature:
  - Lower
  - Upper
  - Major (maximum)
- Order:
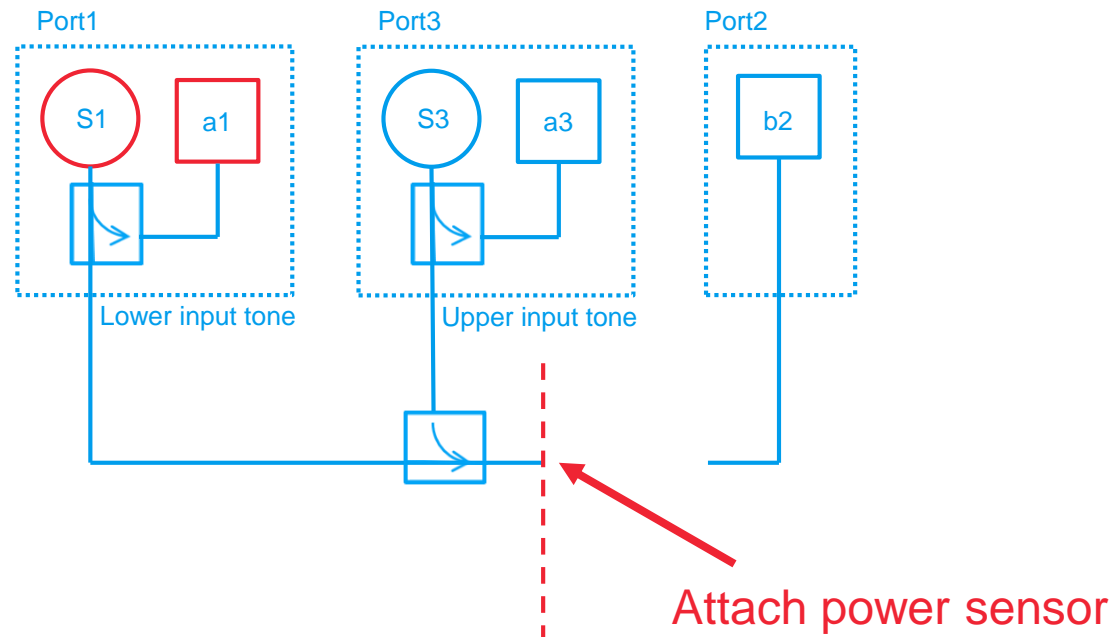 - 3, 5, 7 or 9th order harmonics

Calibration

- Calibration step (optional)
- Creates segmented sweep in channel with all frequencies
- Application exits
- Perform three power cals:
  - Lower source
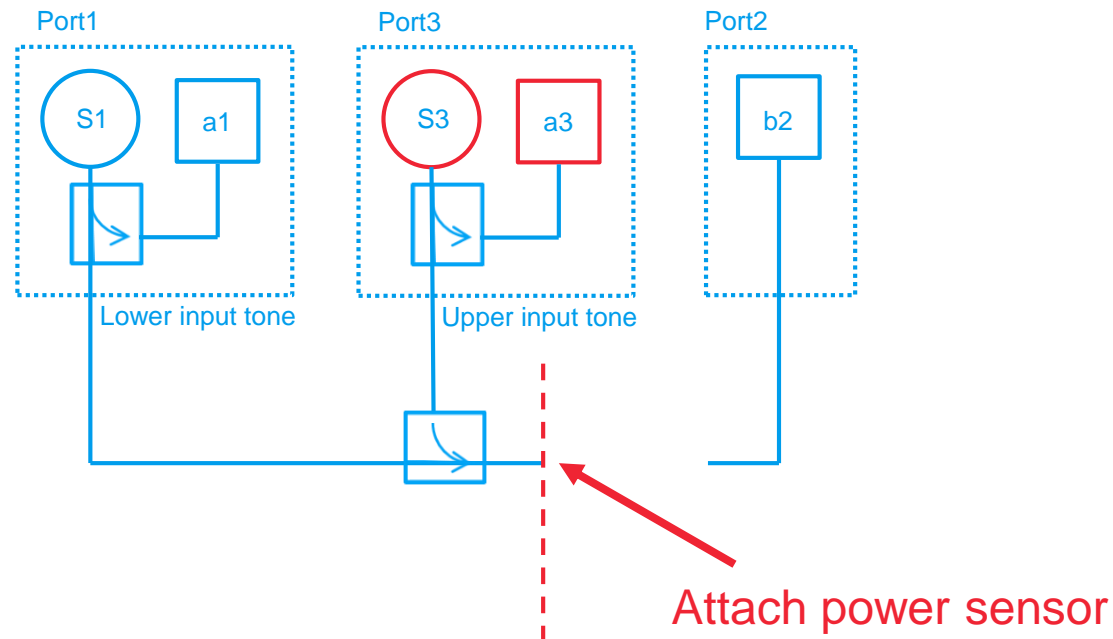 - Upper source
  - Receiver

Typical Calibration

Step 1

▮ Perform power calibration of lower input source and reference receiver at DUT input plane
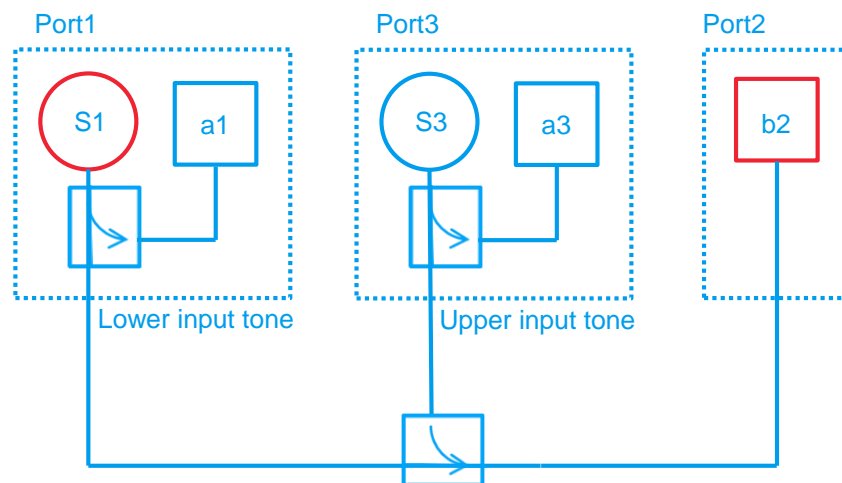
Typical Calibration

Step 2

▮ Perform power calibration of upper input source and reference receiver at DUT input plane

Port1   Port3   Port2

S1   a1   S3   a3   b2

Lower input tone   Upper input tone

Attach power sensor

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Typical Calibration

Step 3

❚ Use one of the calibrated sources to perform a power calibration on the receiver

❚ Note: There will be some imbedded loss from the thru connector used to bypass the DUT. An alternative is to calibrate the source on the unused port with the connector attached, then calibrate the receiver

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Apply traces

▮ Restart application
▮ Confirm settings
▮ Skip calibration (already done)
▮ VNA is configured for measurement
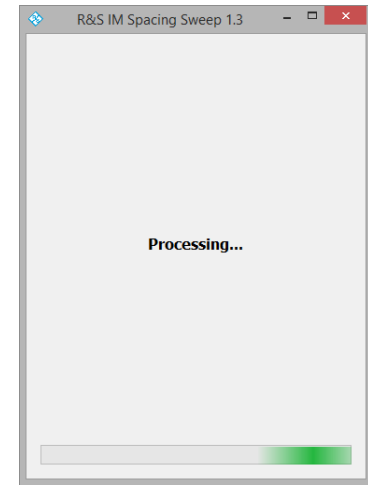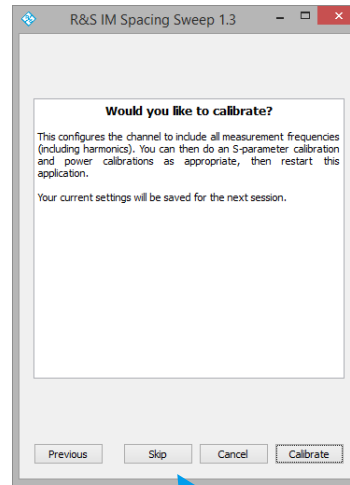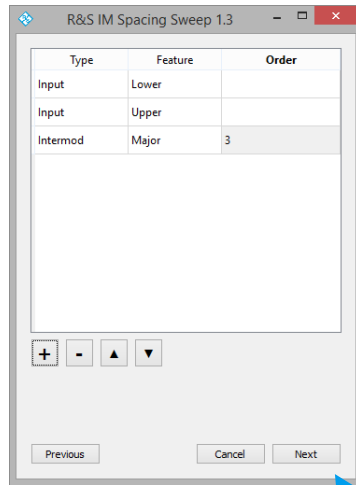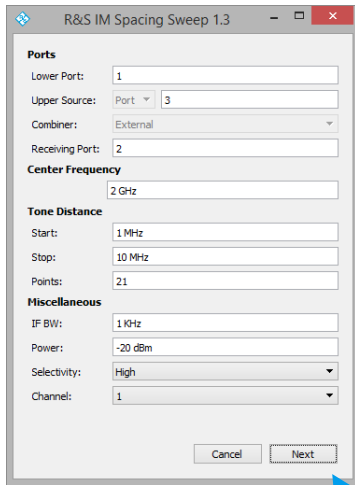
Configure Display

- Traces are created in new display window
- Rearrange traces as necessary
- Do not rename or delete: trace math depends on other traces

Under the hood

∎ The application uses the arbitrary frequency port settings to achieve measurements across tone distance

∎ Here's an example screenshot for the upper 3rd order intermod product with the following settings:

- Port 1 lower input tone
- Port 3 upper input tone
- Port 2 receiver (output)
- 2 GHz center frequency
- 1 MHz start tone spacing
- 10 MHz stop tone spacing
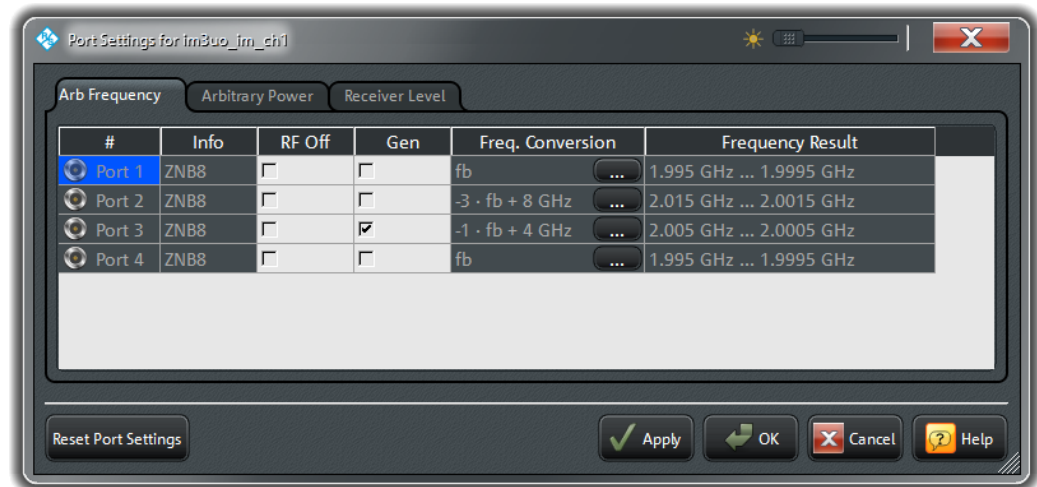
Contact

▎ Please contact me with questions or comments

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