
HMC141/142 MIXER OPERATION NOTE

RF & LO Port Designations for the HMC141 and HMC142 Double-Balanced Mixers

Although the mixers operate acceptably when RF & LO ports are interchanged, use the following guidelines for best performance.

Downconverter Operation

Use the Datasheet Outline Drawing (DOD) to determine port designation for typical downconverter performance per the HMC141/142 data sheet.

- Apply RF Input to RF Port so labelled on DOD and on MMIC die.
- Apply LO Input to LO Port so labelled on DOD and on MMIC die.
- Access IF Output at IF Port so labelled on DOD and on MMIC die.

Upconverter Operation

Reverse the port designation specified by the Datasheet Outline Drawing (DOD) for typical upconverter performance per the HMC141/142 data sheet on page 4-14.

- Apply IF Input to IF Port so labelled on DOD and on MMIC die.
- Apply LO Input to RF Port so labelled on DOD and on MMIC die.
- Access RF Output at LO Port so labelled on DOD and on MMIC die.

HMC143/144 MIXER OPERATION NOTE

RF & LO Port Designations for the HMC143 and HMC144 Double-Balanced Mixers

Although the mixers operate acceptably when RF & LO ports are interchanged, use the following guidelines for best performance:

Upconverter & Downconverter Operation

The RF & LO port markings on the MMIC die are correct and are consistent with the connection designated in the Datasheet Outline Drawing (DOD) found on the HMC143/144 data sheet.

Use the Datasheet Outline Drawing (DOD) to determine port designation for typical performance per data sheet.

Use the same port designations for both upconverter & downconverter operation.

For Example, in Downconverter Operation:

- Apply RF Input to RF Port so labelled on DOD and labelled “RF” on the MMIC die.
- Apply LO Input to LO Port so labelled on DOD and labelled “LO” on the MMIC die.
- Access IF Output at IF Port so labelled on DOD and on MMIC die.

For Example, in Upconverter Operation:

- Apply IF Input to IF Port so labelled on DOD and on MMIC die.
- Apply LO Input to LO Port so labelled on DOD and labelled “LO” on the MMIC die.
- Access RF Output at RF Port so labelled on DOD and labelled “RF” on the MMIC die.