

RFMD RFFC207x & RFFC507x Example Mixer Tables

1 Introduction

Results were measured on the standard RFFC2071 evaluation board with wideband transmission line transformers. The local oscillator was set to a fixed frequency and the RF input swept whilst monitoring the IF output. The spurious responses produced by the evaluation board were tabulated and normalized to the wanted output at $F_{RF} - F_{LO}$. The table is read by determining what product you are interested in. For example if you want to know the response due to the second harmonic of the input frequency mixing with the third harmonic of the LO to generate a spur at your IF you look in the second column ($2 \cdot F_{RF}$), third row ($3 \cdot F_{LO}$) of the tables.

2 Example Mixer Tables

Table 1: $F_{LO} = 1500\text{MHz}$ (VCO at 3000MHz and $LO / 2$)

(dBr) $F_{LO} = 1500\text{MHz}$, $F_{IF} = 100\text{MHz}$, $F_{RF} = 0\text{dBm}$, $MIX_IDD = 5$

$LO \backslash RF$	0	1	2	3	4	5
0		-50	-64	<-65	<-65	<-65
1	-30	0	-31	-44	<-65	<-65
2	-24	-63	≤ -65	<-65	<-65	<-65
3	-34	-20	-61	-59	<-65	<-65
4	-16	≤ -65	<-65	<-65	<-65	<-65
5	-42	-26	-60	<-65	<-65	<-65

Table 2: $F_{LO} = 900\text{MHz}$ (VCO at 3600MHz and $LO / 4$)

(dBr) $F_{LO} = 900\text{MHz}$, $F_{IF} = 100\text{MHz}$, $F_{RF} = 0\text{dBm}$, $MIX_IDD = 5$

$LO \backslash RF$	0	1	2	3	4	5
0		-42	<-65	<-65	<-65	<-65
1	-32	0	-37	-55	<-65	<-65
2	-35	-57	-59	<-65	<-65	<-65
3	-39	-12	-54	-64	<-65	<-65
4	-28	-63	<-65	<-65	≤ -65	<-65
5	-37	-24	≤ -65	≤ -65	<-65	<-65
6	-21	<-65	<-65	<-65	<-65	<-65
7	-42	-34	<-65	<-65	<-65	<-65