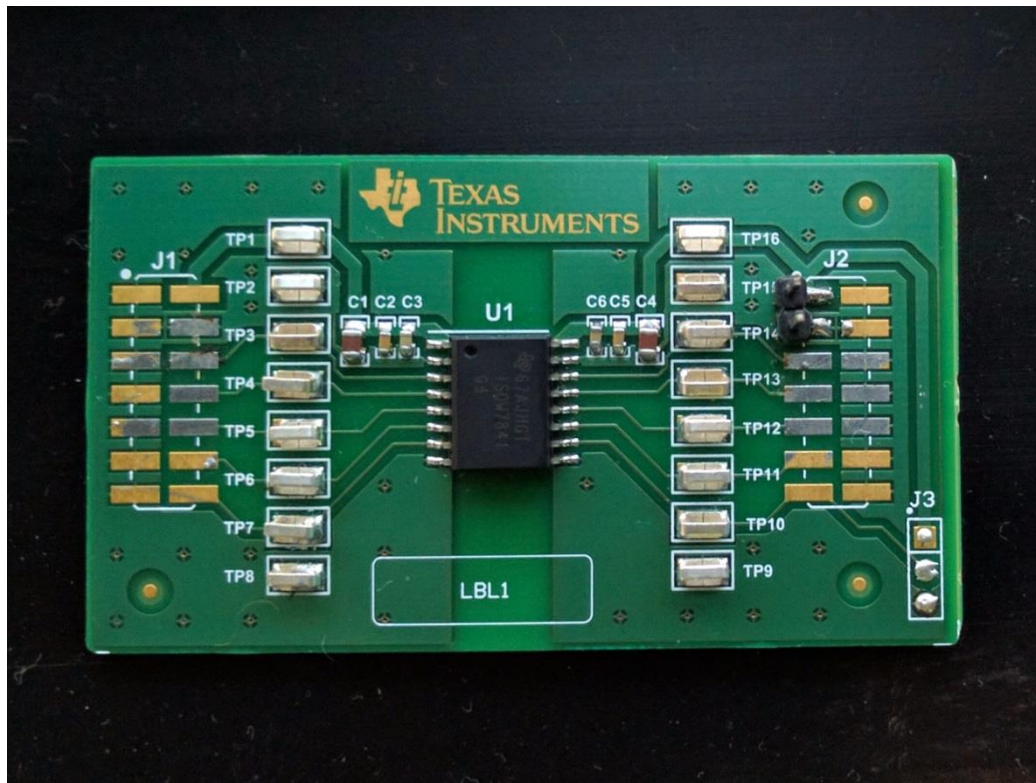


ISOW7841 Emissions Reduction Test Results

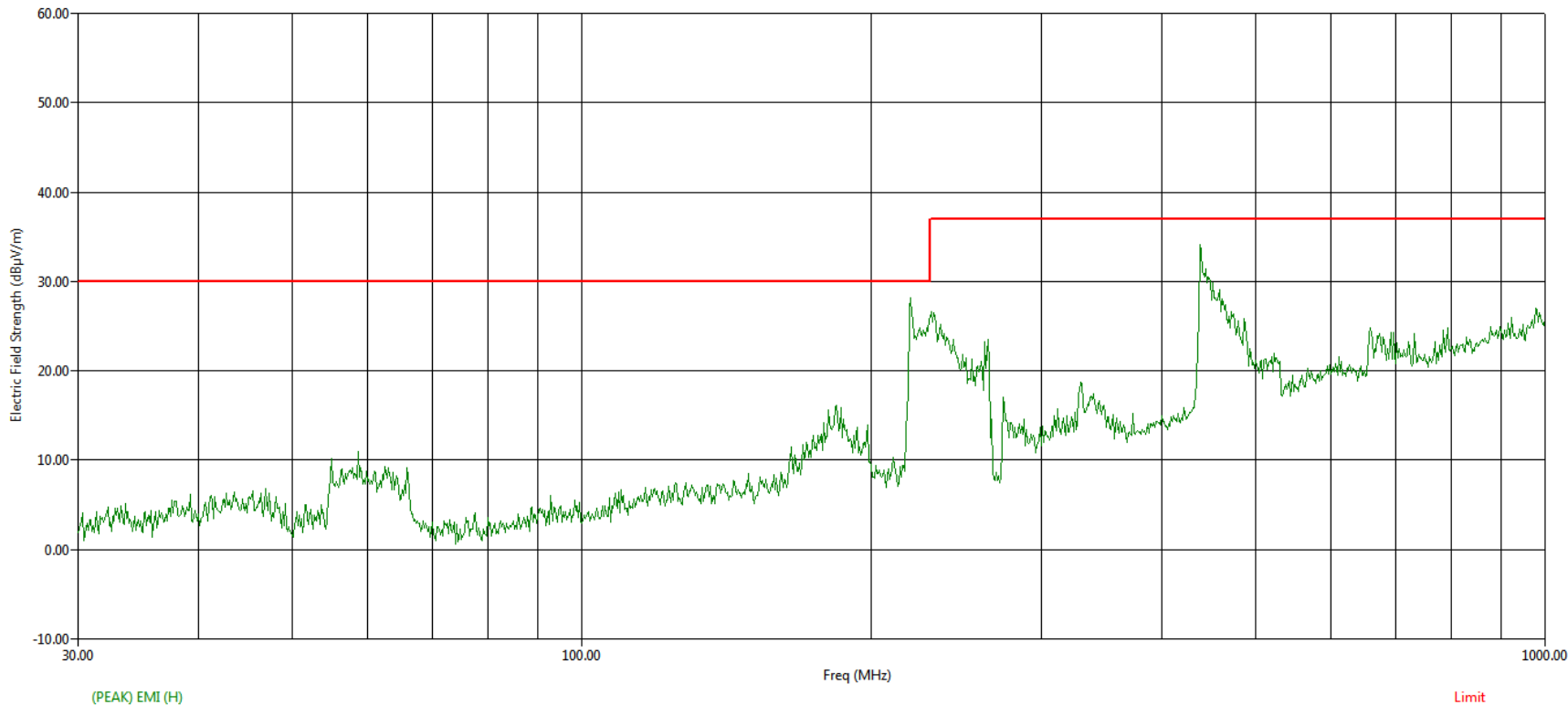
5 April 2017

PCB used for Emissions Tests - ISOW7841EVM



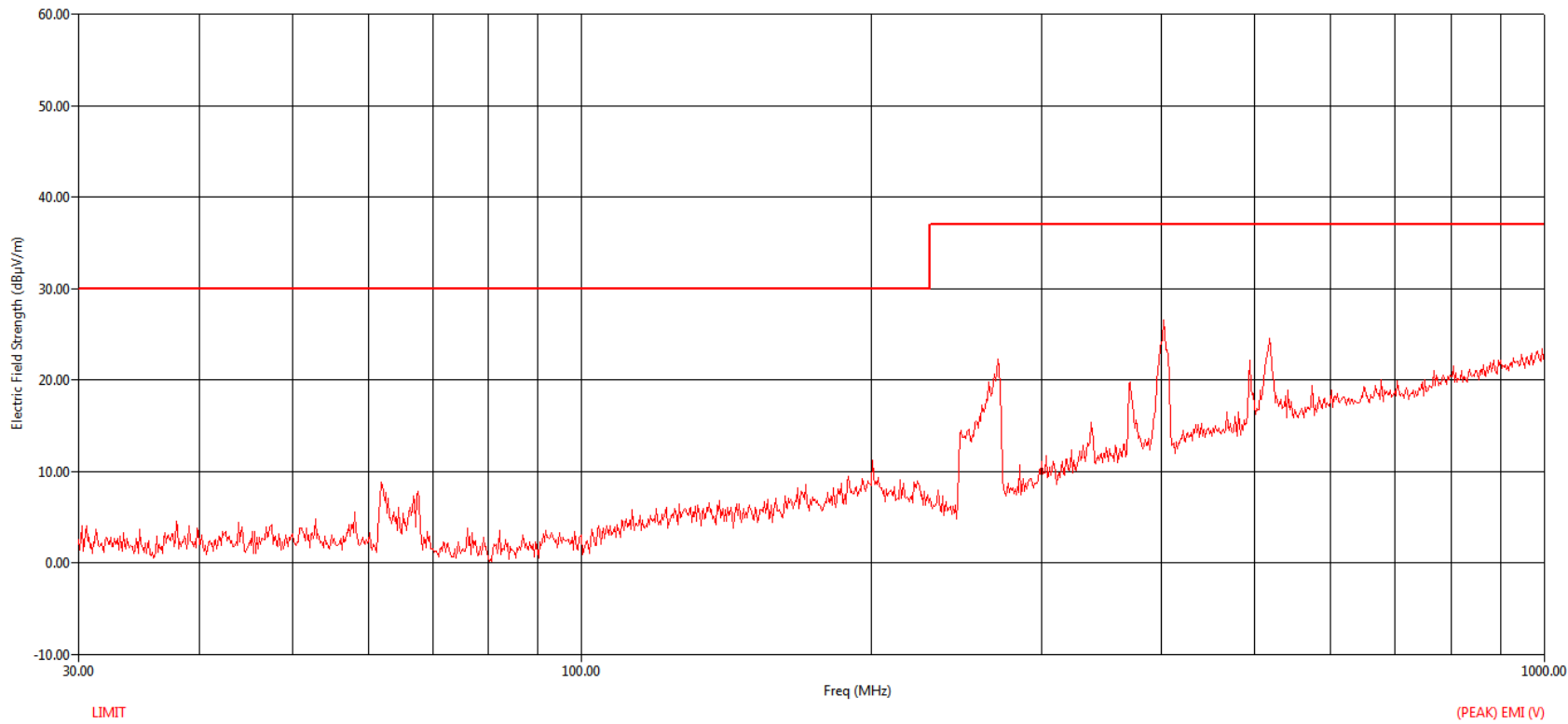
ISOW7841 Emission Results

5V to 3.3V @ 80mA



ISOW7841 Emission Results

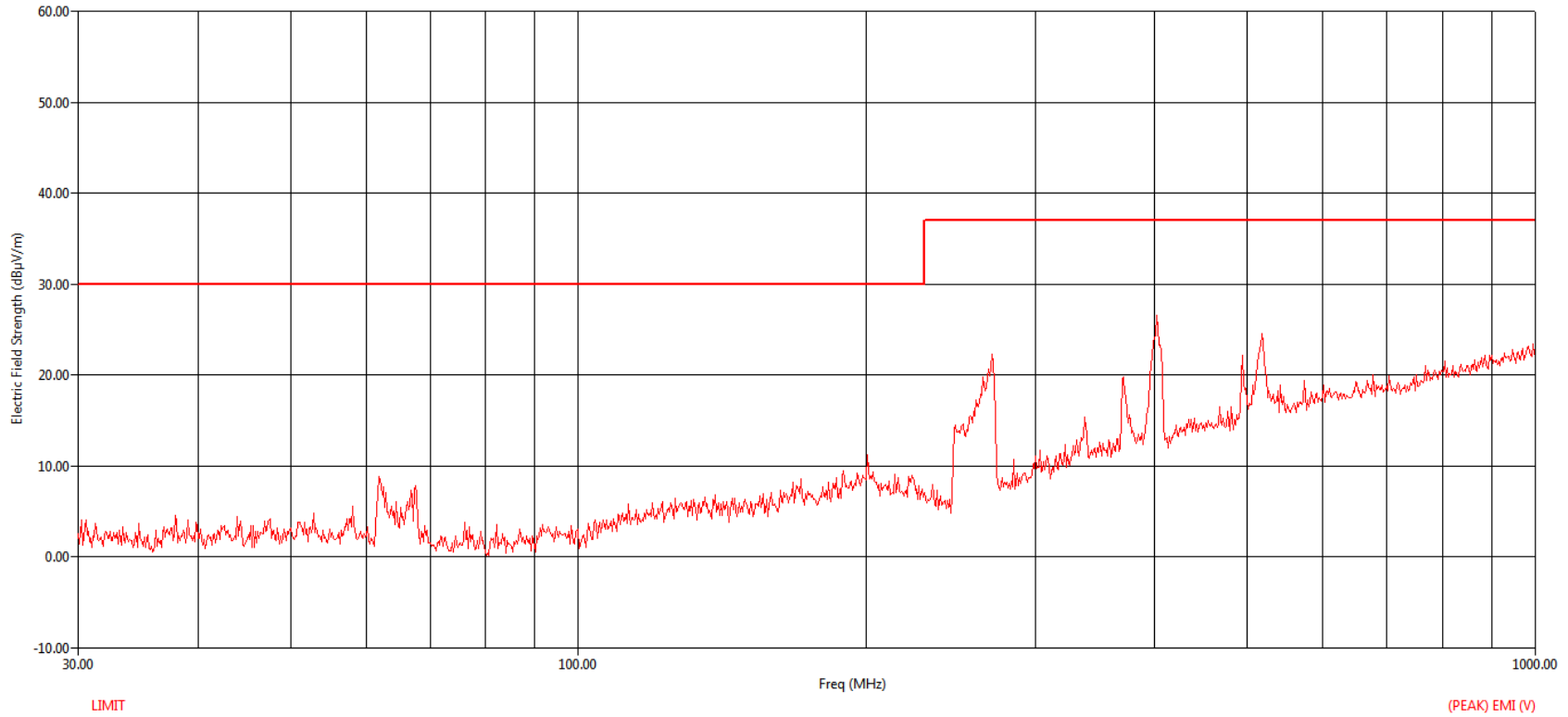
3.3V to 3.3V @ 55mA



ISOW7841 – Emissions Reduction Proposals

Option 1: If VCC2 required is 3.3V, use 3.3V on VCC1

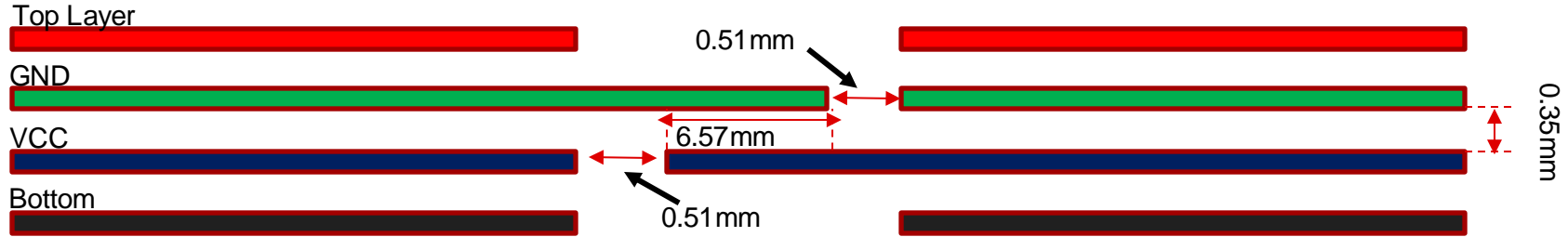
3.3V to 3.3V @ 55mA Vertical (Sample #1)



Option 2: To use inter-layer Stitching Capacitor

0.35mm Dielectric thickness

Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0.40mil	3.5	
3	Top Layer(Signal 1)	Copper	1.40mil		
4	Dielectric1	FR-4	20.00mil	4.2	
5	L2 < GND >	Copper	1.40mil		
6	Dielectric 3	FR-4	14.00mil	4.2	
7	L3 < VCC >	Copper	1.40mil		
8	Dielectric 2	FR-4	20.00mil	4.2	
9	Bottom Layer	Copper	1.40mil		
10	Bottom Solder	Solder Resist	0.40mil	3.5	

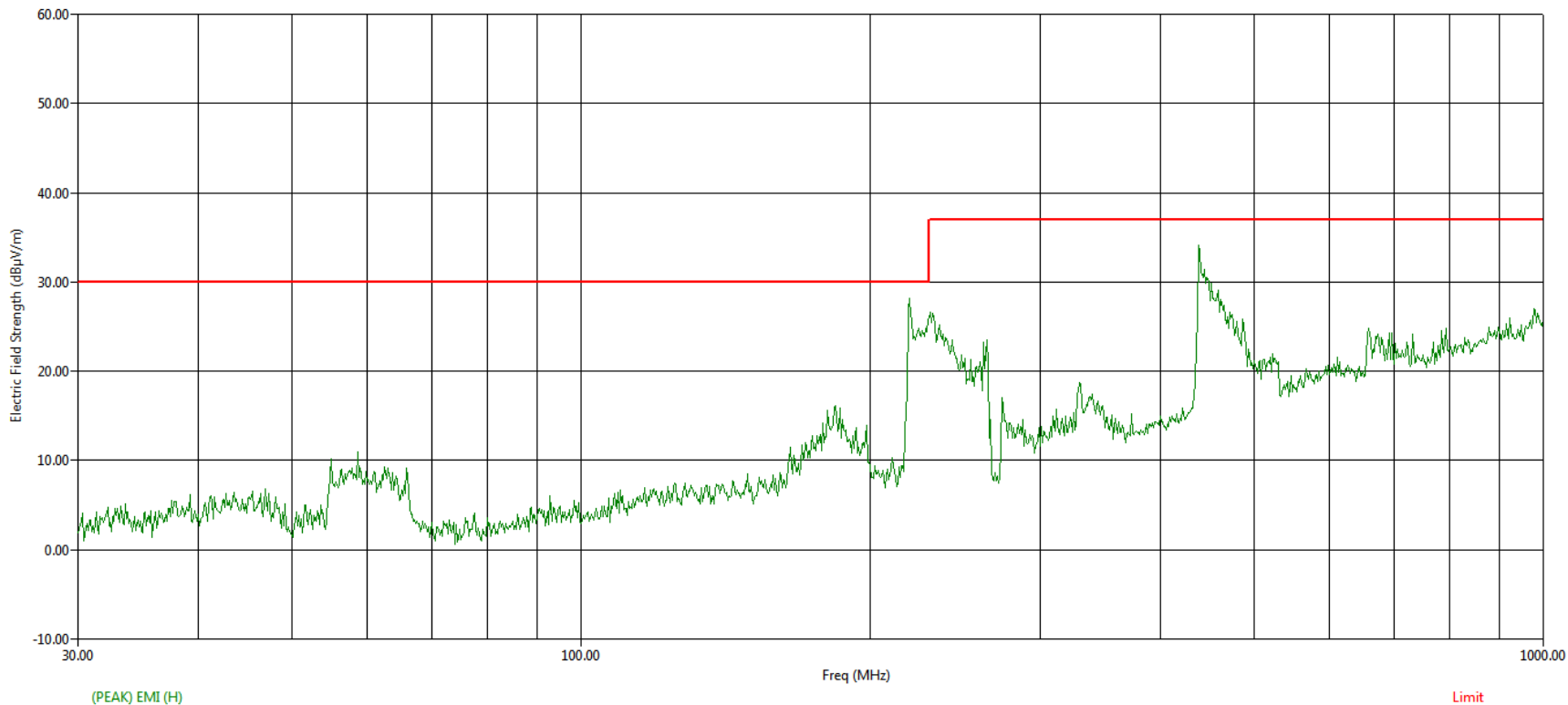


Theoretical capacitance:

	K	Eo	D	L	W	C(pF)
PCB#2	4.2	8.85E-12	0.35	77.3	6.5	53.38

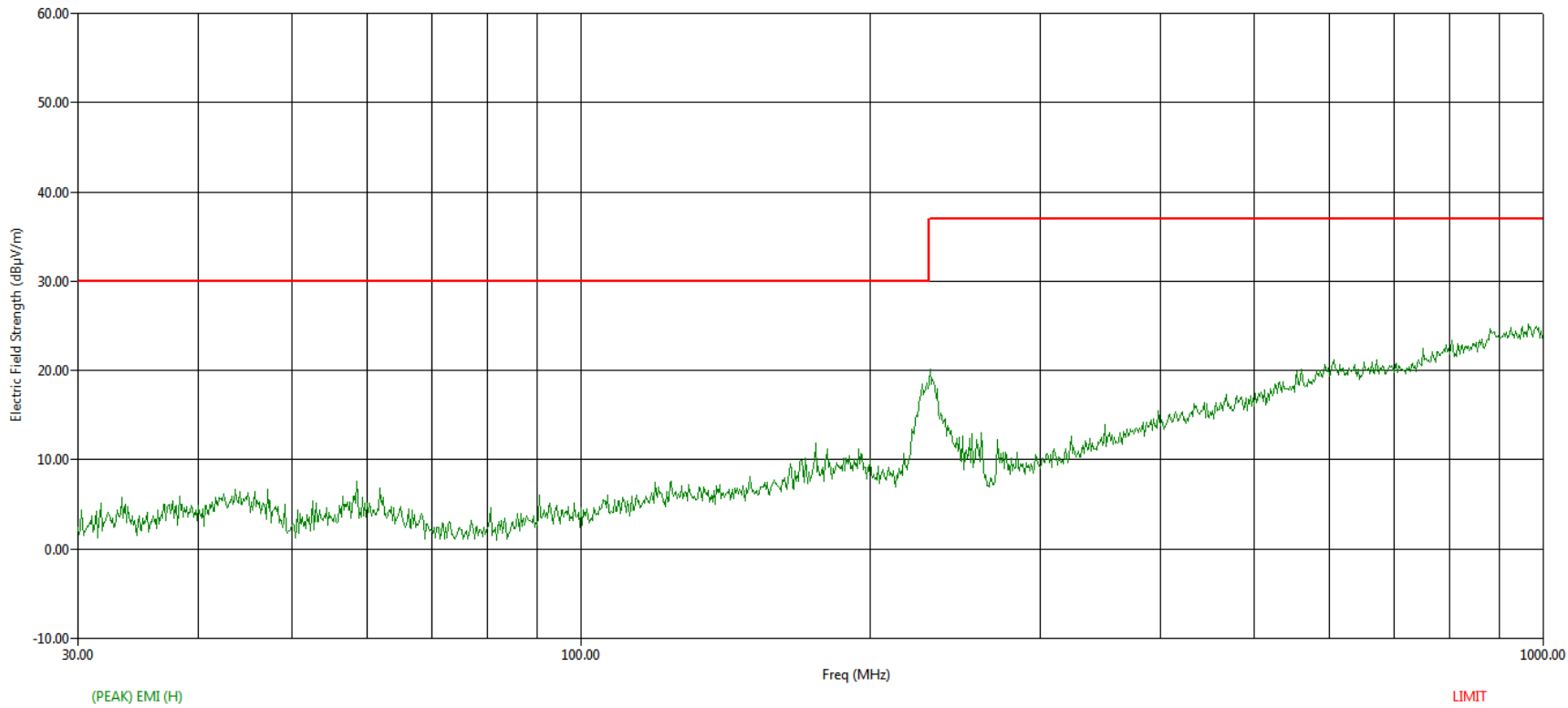
ISOW7841 (Normal EVM)

5V to 3.3V @ 80mA



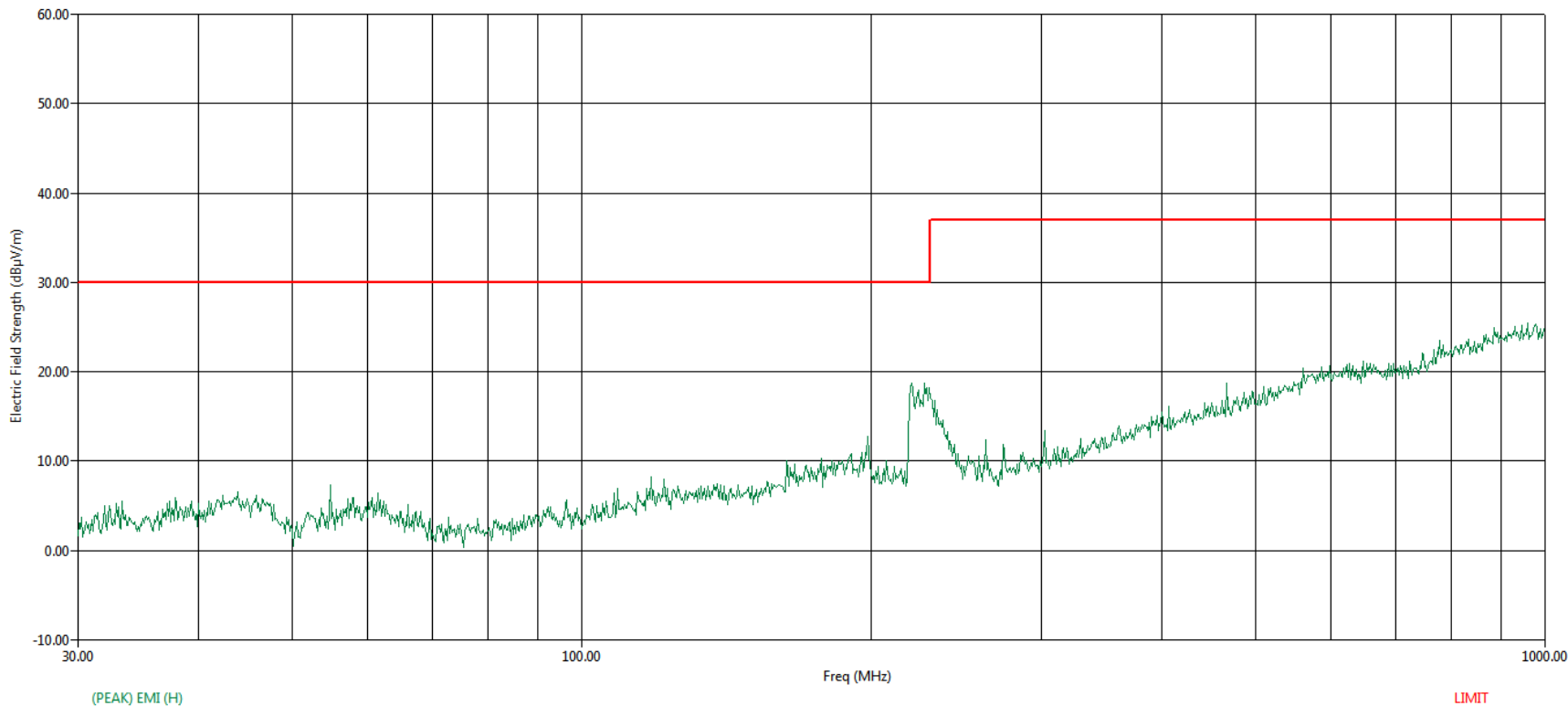
ISOW7841 (30pF Stitching Cap)

5V to 3.3V @ 80mA



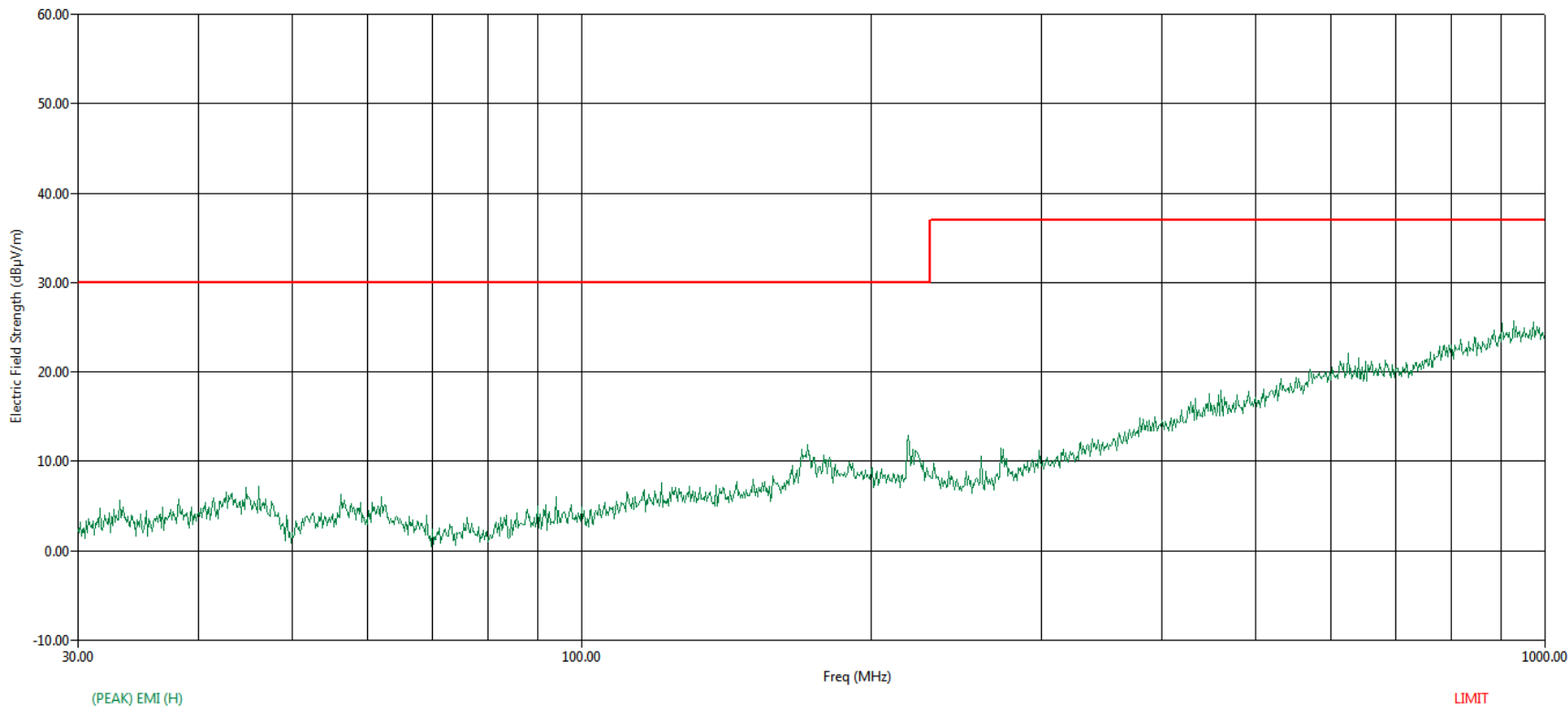
ISOW7841 (50pF Stitching Cap)

5V to 3.3V @ 80mA



ISOW7841 (100pF Stitching Cap)

5V to 3.3V @ 80mA



Summary

- ISOW7841 emissions with 5V input has margin to CISPR 32 Class B limits and it does not change much with increase in output load conditions.
- There are two options to further reduce emissions on ISOW7841
 - Option 1:
 - Using 3.3V on VCC1 to get 3.3V at VCC2 reduces emissions significantly and passes CISPR 32 Class B with a margin of ~15dB.
 - Option 2:
 - ISOW7841 with stitching capacitor of 50pF improves emissions by ~20dB and passes CISPR 32 Class B with a margin of ~20dB.

Thank You