Generate DDR Memory Termination Voltages with MAX1917 using 3.3V Supply

I. If the input voltage of the 2.5V or 1.5V dc-dc converter is 5V and is on the same board where MAX1917 is located, use the following schematics for both 1.25V and 0.75V applications.

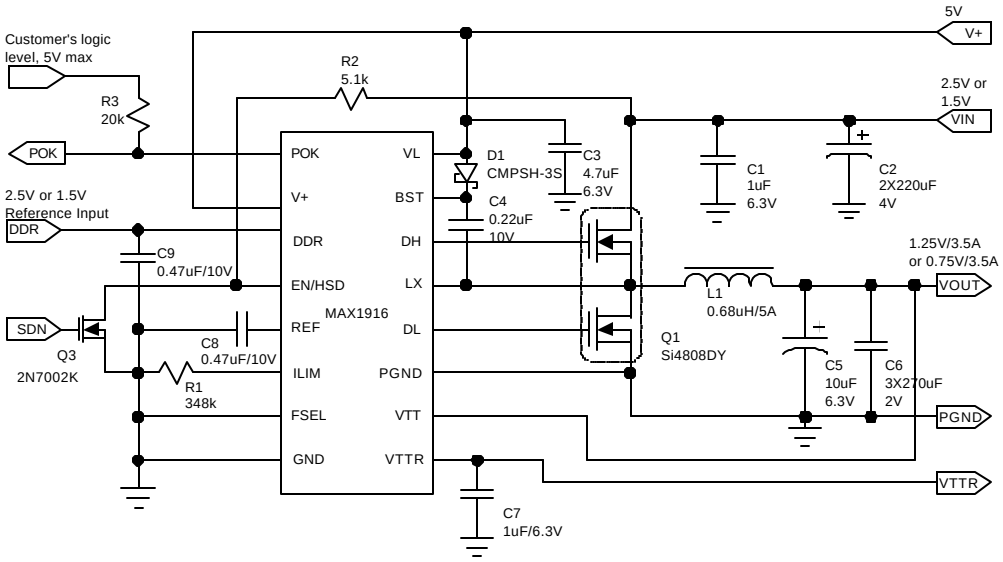

Figure 1 Schematics with 5V V+ supply available.

Table I: Bill of Materials:

Comp.	Description	Comments
C1, C7	1.0uF/6.3V ceramic capacitor, JMK107BJ105MA	Taiyo Yuden
C2	2X220uF/4V POSCAP, 4TPA220M, or 2X330uF/6V tantalum capacitor, T510X337M006AS	SANYO Kemet
C3	4.7uF/10V ceramic capacitor, LMK316BJ475ML	Taiyo Yuden
C4, C8	0.47uF/10V ceramic capacitor, LMK107BJ474MA	Taiyo Yuden
C5	10uF/6.3V ceramic capacitor, JMK316BJ106ML	Taiyo Yuden
C6	3X270uF polymer caps (Panasonic EEFUE0E271R)	Panasonic
C9	0.47uF/25V ceramic capacitor, TMK316BJ474ML	Taiyo Yuden
D1	30V/100mA Schottky diode, CMPSH-3S	Central Semi.
L1	0.68uH/9A, DO3316P681HC (esr, 5mΩ max)	Coilcraft
Q1	Si4808DY or Si4830DY	Vishay Siliconix
R1	348k, 1%	
R2	5.1k, 5%	
R3	20k, 5%	
IC1	MAX1917	MAXIM

II. If the input voltage of the 2.5V or 1.5V dc-dc converter is 3.3V and is on the same board where MAX1917 is located, and also if the LX switching node is accessible, use the following schematics for both 1.25V and 0.75V applications. D2, C10 and C11 form a voltage doubler to double the 3.3V input voltage to feed the V+.

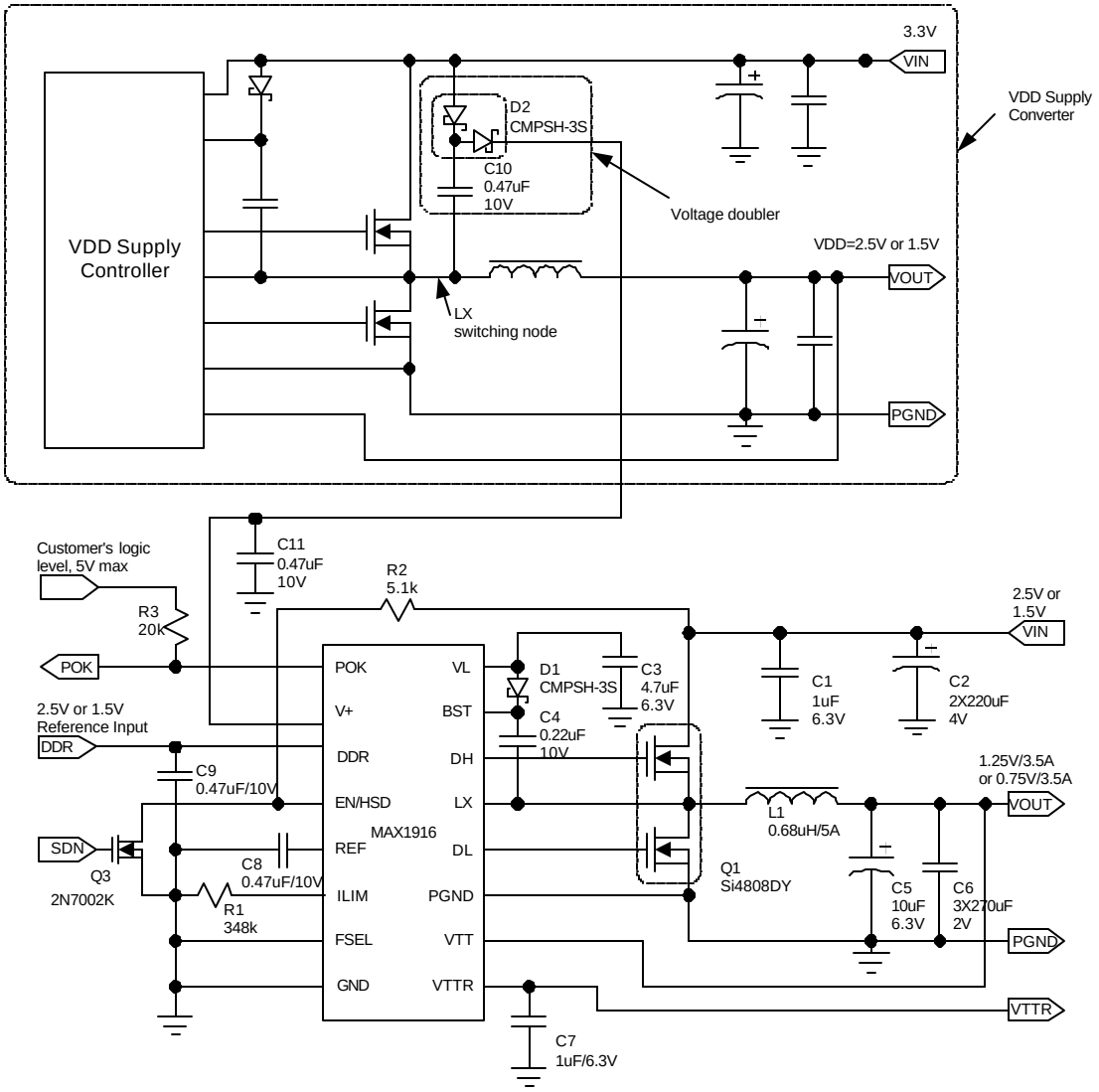

Figure 2 Schematics with a voltage doubler from the 2.5V or 1.5V dc-dc converter.

Table II: Additional Bill of Materials over schematics in Figure 1:

Comp.	Description	Comments
C10, C11	0.47uF/10V ceramic capacitor, LMK107BJ474MA	Taiyo Yuden
D2	30V/100mA Schottky diode, CMPSH-3S	Central Semi.

III. If the input voltage of the 2.5V or 1.5V dc-dc converter is 3.3V the switching node, LX, is not accessible, a charge pump, such as MAX1683, should be used to double the 3.3V input voltage to supply V+ of the MAX1917. Following schematic shows the MAX1917, together with MAX1683, operates from 3.3V input.

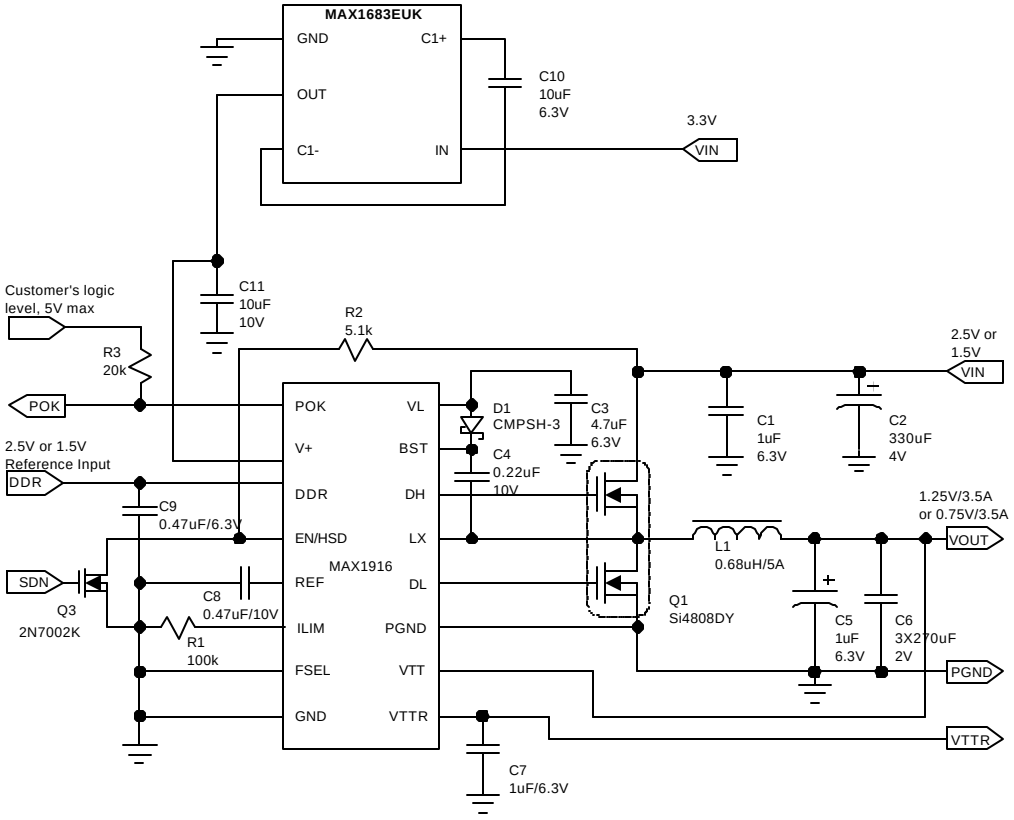

Figure 3 Schematics with MAX1683 charge pump to generate V+ supply for MAX1917.

Table III: Additional Bill of Materials over Figure 1:

Comp.	Description	Comments
C10	10uF/6.3V ceramic capacitor, JMK316BJ106ML	Taiyo Yuden
C11	10uF/10V ceramic capacitor, LMK325BJ106MN	Taiyo Yuden
IC2	MAX1683	MAXIM