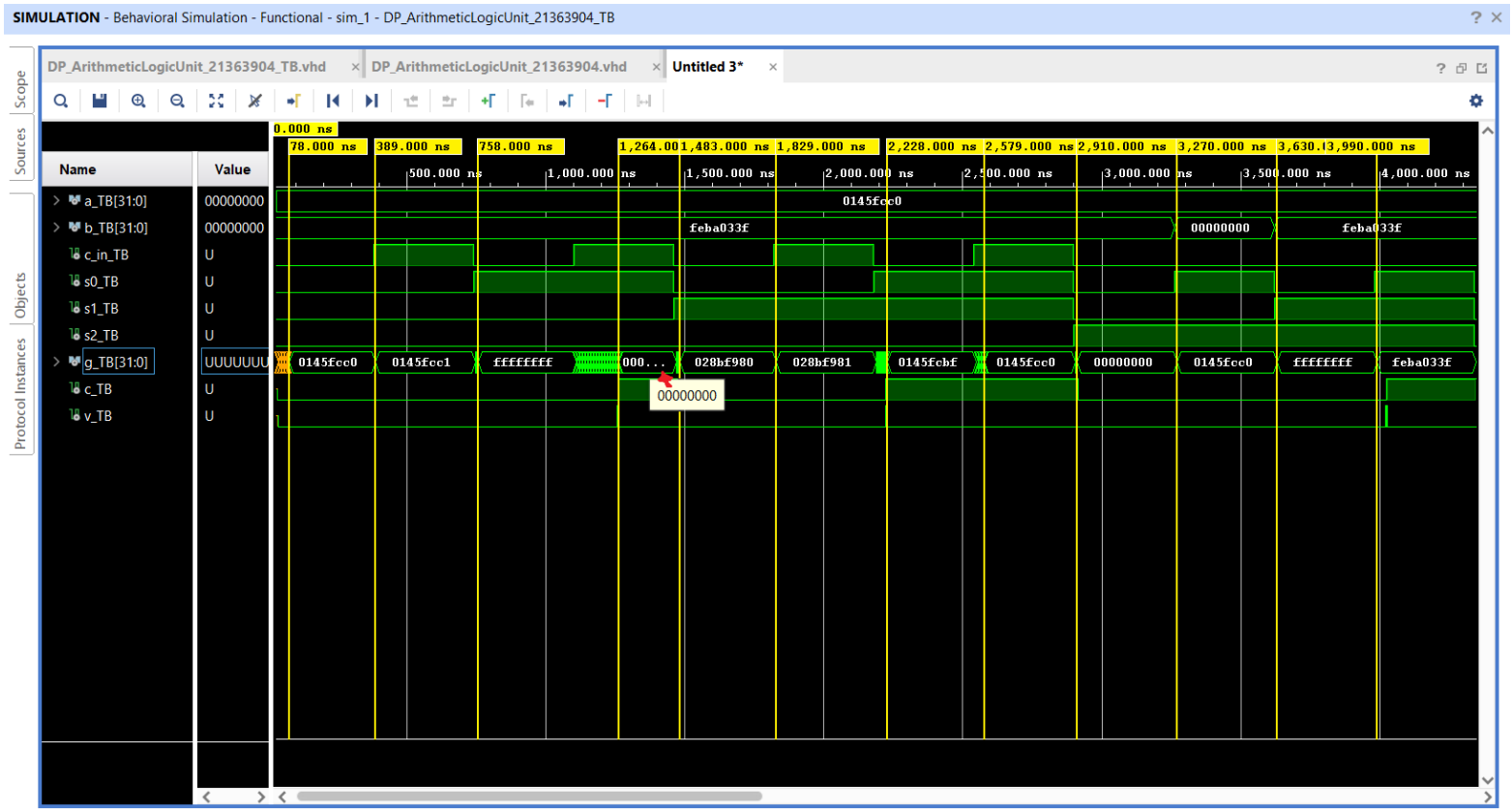
DP_ArithmeticLogicUnit_21363904



The timing diagram for the Arithmetic Logic Unit is shown above. On the following page the waveform is split up into two parts in order to better view the times and values. All numbers are in Hexadecimal notatation. In each image, the yellow lines indicate when the correct value of each operation appears at the output. Each of the twelve arithmetic operations are perfromed in order via the setting of select and carry in signals according to the FS Code: A, $A+1$, $A+B$, $A+B+1$, $A+NOT(B)$, $A+NOT(B)+1$, $A-1$, A, $A\ AND\ B$, $A\ OR\ B$, $A\ XOR\ B$, and $NOT(A)$. I have provided my Student Number ($0145FCC0$) for input A, and its inverse / 1s Complement ($FEBA033F$) for input B, except for the OR test, in which I chose all 0s in order to better demonstrate the OR operation and differentiate it from the XOR test. The correct result of each operation can be seen on the waveform.

DP_ArithmeticLogicUnit_21363904