COLIN,

QUICK QUESTION BEFORE MOVING ON. THE BOTTOM SIGNAL IN FIGURE A BELOW SHOWS THE *GDT SEC 1 (Pin #5 & Pin #6)* USING A *muRata Pulse Transformer #1002C* WHICH I WAS PREVIOUSLY USING. THE REASON I CHANGED TO THE SD250-3L GDT MADE BY COILCRAFT IS THAT I WASN'T SURE WHETHER A PULSE TRANSFORMER WOULD WORK SAME AS A GDT.

GENERAL QUESTION: I AM ASKING FOR YOUR OPINION ONLY, WOULD THE muRata Pulse Transformer #1002C, BEING IT IS REFERENCED AS A PULSE TRANSFORMER, NOT A GDT, WOULD BE AN ACCEPTABLE ALTERNATE TO THE COILCRAFT GDT?). I don't see much difference between the two.

SEE BELOW FOR THE DATA SHEETS: (*muRata Pulse Transformer #1002C), (*Coilcraft SD250-3L GDT)

I GUESS WHAT I AM ASKING IS IF THE PRESENT COILCRAFT SD250-3L GDT DOES NOT WORK CORRECTLY THEN WOULD THE muRata Pulse Transformer #1002CBE BE A SUITABE CANDIDATE.

FIGURE A: UCC28950 - BOTTOM Channel 2 - muRata Ps #1002C GDT SEC 1 (Pin #5 & Pin #6) Identical signal on SEC 2

muRata Ps
Murata Power Solutions

1000 Series

Pulse Transformers

FEATURES

- RoHS compliant
- UL 94V-0 Package Material
- Isolation to 4kVrms
- Compact Footprint
- PCB Mounting
- Backward compatible with Sn/Pb soldering systems

DESCRIPTION

The 1000 series are intended for wideband and pulse operations. They are also suitable for signal isolation and use in small isolated power supplies. The compact footprint makes them ideal for applications where space is at a premium.

SELECTION GUIDE[1]

Order Code	Turns Ratio ±2%	Min. Primary Inductance	Min. Primary Constant, E·t	Max. Leakage Inductance	Max. Interwinding Capacitance	Max. DC Resistance Primary Winding	Max. DC Resistance Secondary 1 winding	Max. DC Resistance Secondary 2 winding	Isolation Voltage	Pin Connection Style	Mechanical Dimensions
		mH	Vµs	µH	pF	Ω	Ω	Ω	Vrms		
1001C	1:1	3.0	200	32	23	1.2	1.0	-	2000	A	2
1002C	1:1:1	3.0	200	30	51	1.4	1.3	1.7	2000	B	1
1003C	2:1:1	12	400	62	58	5.0	2.0	3.0	2000	B	1
1007C	1:1:1	7.4	310	20	55	2.9	2.5	3.4	2000	B	1
1009C	1:1:1	22	550	85	71	13.4	11	15.8	2000	B	1
1013C	1:1:1	3.0	200	3	585	2.0	2.0	2.0	500Vdc	B	1
1016C	1:1	3.0	200	22	23	1.2	1.0	-	3500	A	2
1017C	1:1	0.8	130	4	20	0.4	0.3	-	4000	A	2
1024C	1.2CT:1CT	8.8	340	60	25	2.5	2.5	-	2000	C	1
1025C	2:1:1	24	570	90	83	8.7	3.5	5.2	2000	B	1
1026C	1:1:1	6.0	285	30	62	4.0	4.0	4.9	2000	B	1
1082C	100:1	6.1	280	-	6	1.1	0.1	-	2000	A	2

ABSOLUTE MAXIMUM RATINGS

Operating free air temperature range	0°C to 70°C

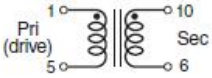
- Lower cost than toroidal equivalents
- Frequency range of 10 – 250 kHz and up
- Industry standard pin centers
- 3750 Vrms, one minute isolation (hipot) between primary and secondary windings; 1500 Vrms, one minute between secondaries
- UL1446 Class B (130°C) Insulation System (UL File E83628)

Coilcraft **Designer's Kit No. P404** contains samples of four standard driver transformers. To order, contact Coilcraft or visit **http://order.coilcraft.com** to purchase on-line.

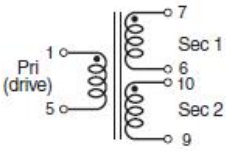
	SD250-1L	SD250-2L	SD250-3L	SD250-4L
Turns ratio ±3% (pri:sec)	1 : 1	1 : 1.5	1 : 1 : 1	1 : 1.5 : 1.5
Primary winding				
Inductance (min)[1]	1.5 mH	1.5 mH	1.5 mH	1.5 mH
Leakage inductance (max)[1]	4.0 µH	4.0 µH	4.0 µH	4.0 µH
DCR	0.4Ω	0.4Ω	0.4Ω	0.4Ω
Volt-time product	375 V-µsec	375 V-µsec	375 V-µsec	375 V-µsec
Secondary winding(s)				
Capacitance, pri to sec (max)	50 pF	50 pF	50 pF	50 pF
DCR, each section (max)	0.75Ω	2.5Ω	0.75Ω	2.5Ω

1. Measured at 1 Vrms, 15.75 kHz.
2. Operating temperature range –40°C to +85°C.
3. Electrical specifications at 25°C.

SD250-1 and 250-2



SD250-3 and 250-4



Recommended

THE BELOW WAVEFORMS HAVE BEEN MODIFIED WITH A LARGER CAPACITOR ALONG WITH A RESISTOR TO GROUND. WHAT THIS HAS DONE IS REDUCE THE NUMBER OF RINGS BETWEEN SIGNALS FROM FOUR TO TWO. IN REVIEWING THE PREVIOUS WAVEFORMS, I SAW THAT THE SIGNAL WAS ONLY SPLITTING WHEN THERE WAS FOUR RIPPLES WHERE THE WAVEFORM THAT ONLY HAD TWO RIPPLES WAS OK.

I ALSO SLIGHTLY ADJUSTED THE DELAY TIME ON DELAB TO 20.84K AND DELCD TO 21.72K.

PLEASE REVIEW FIGURE 1 THRU FIGURE 22 WAVEFORMS BEFORE I ATTACH MOSFETS AND DC INK VOTAGE. SEE IF YOU CAN FIND ANY IRREGULARITIES IN THE WAVEFORMS BELOW.

PLEASE ET ME KNOW IF THERE IS ANY OTHER INFORMATION YOU NEED SO I CAN GET IT TO YOU BY THE NEXT DAY.

THANK YOU

EDDIE LOY

FIGURE 1. UCC28950 GDT Q1-Q2 PA LEG (Yellow, Teal), GDT Q3, Q4 AP LEG (Magenta, Blue)

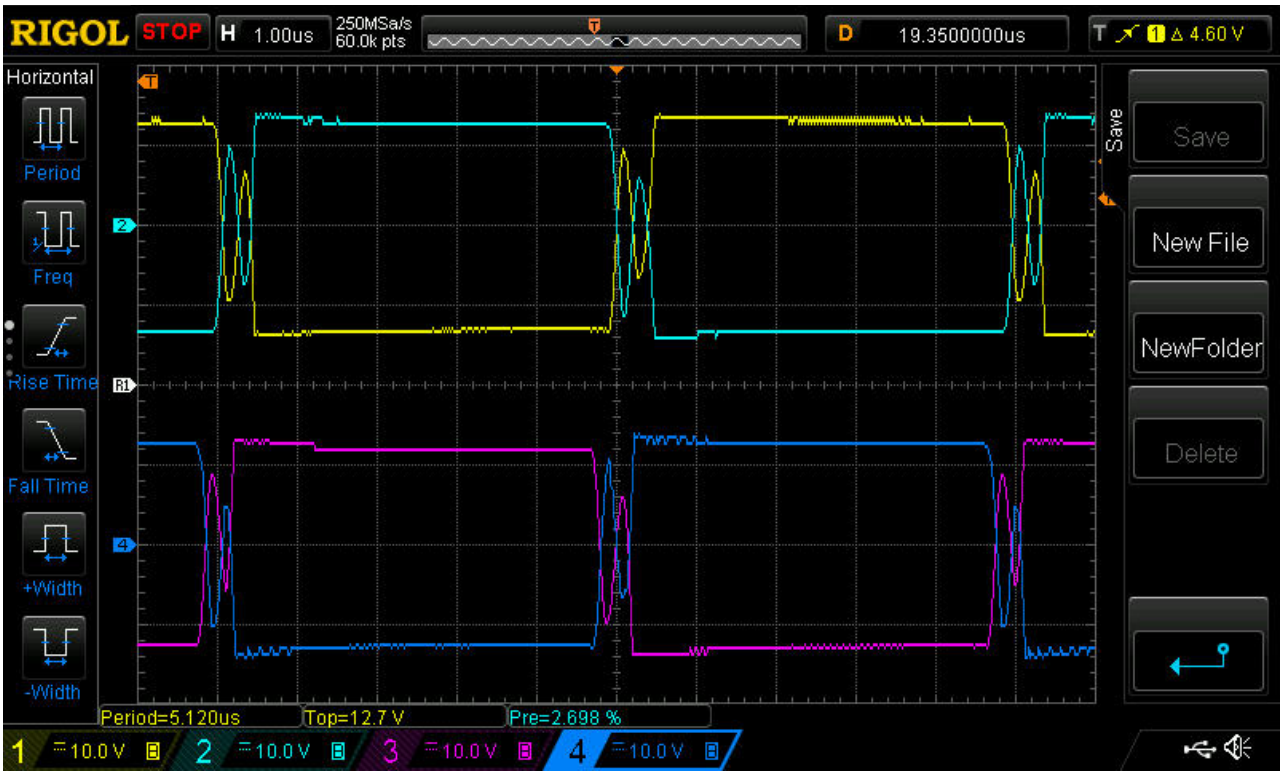


FIGURE 2. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **96ns**

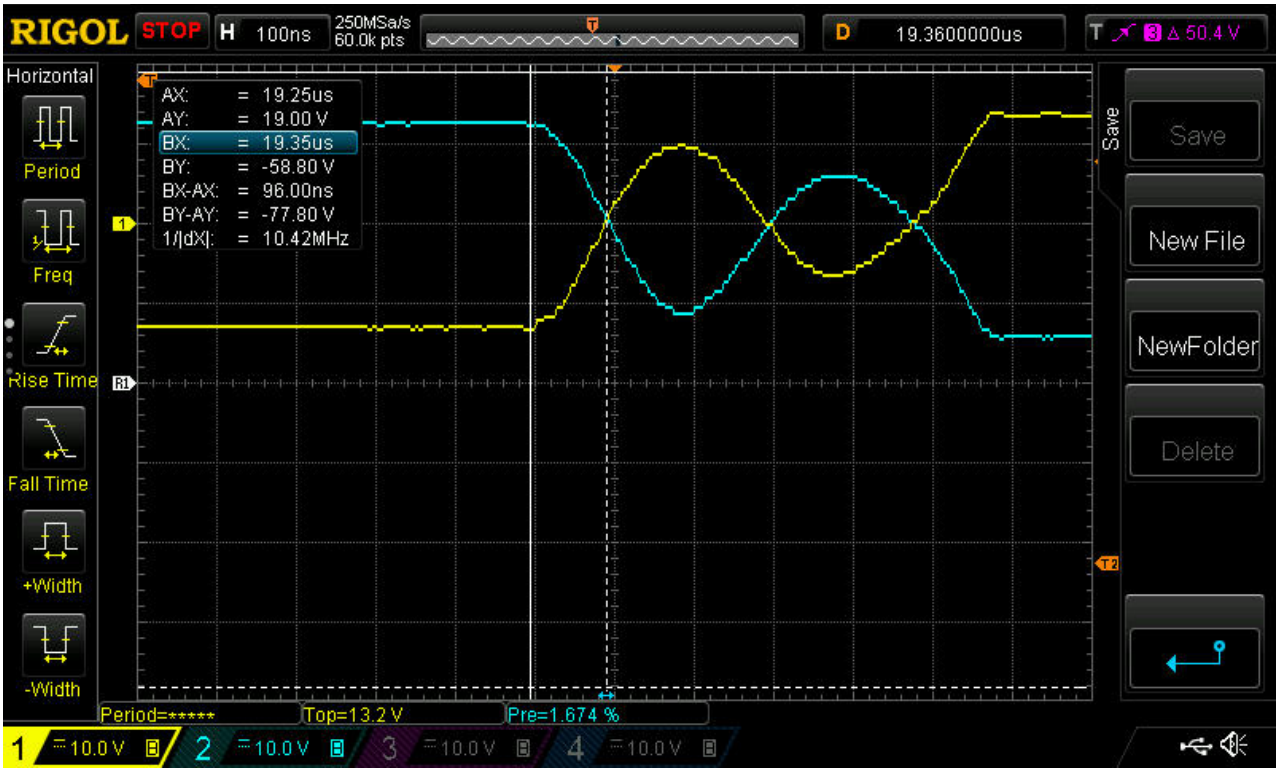


FIGURE 3. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **386ns**

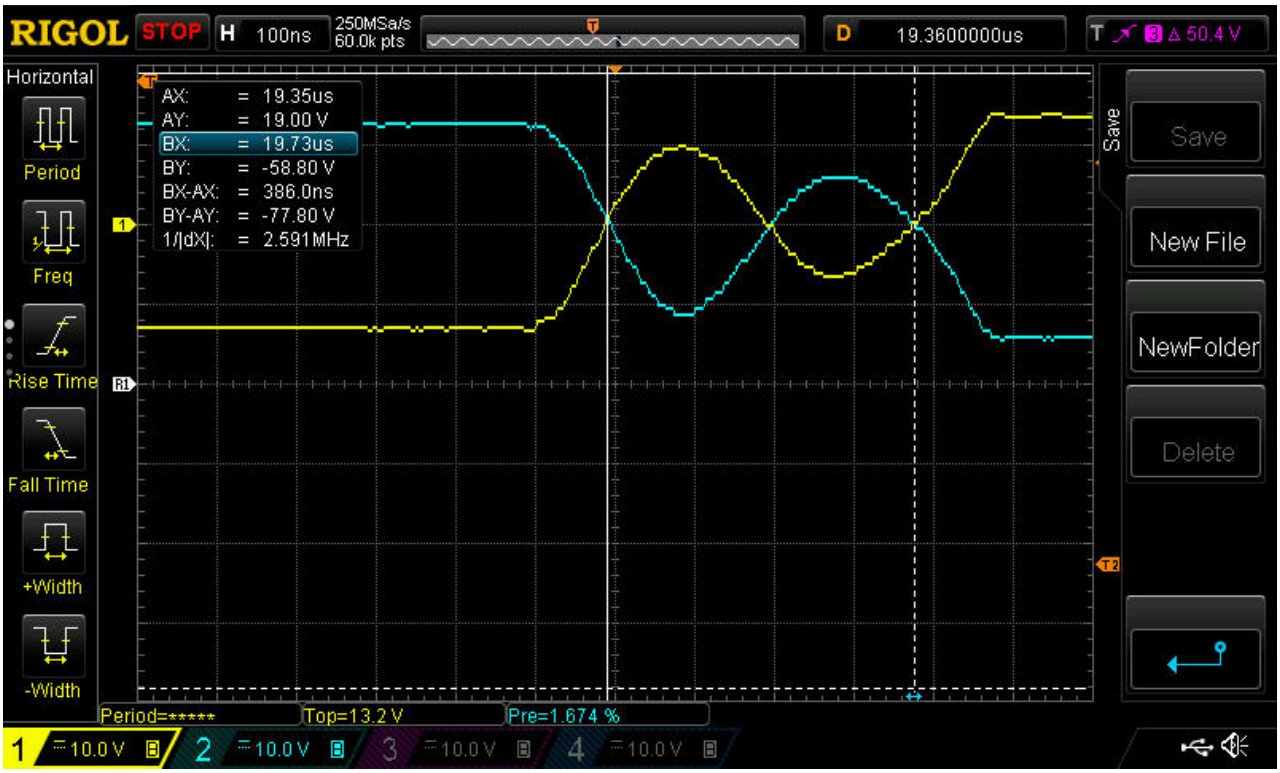


FIGURE 4. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **94ns**

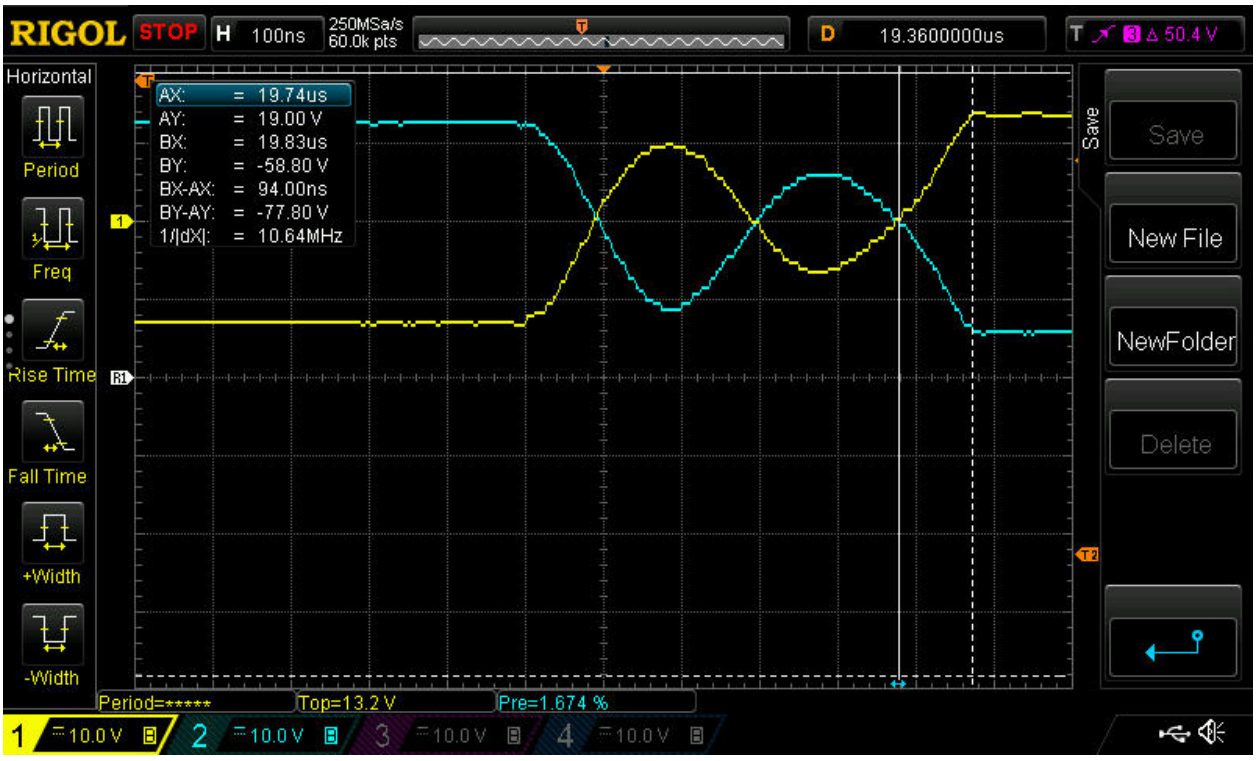


FIGURE 5. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **96ns**

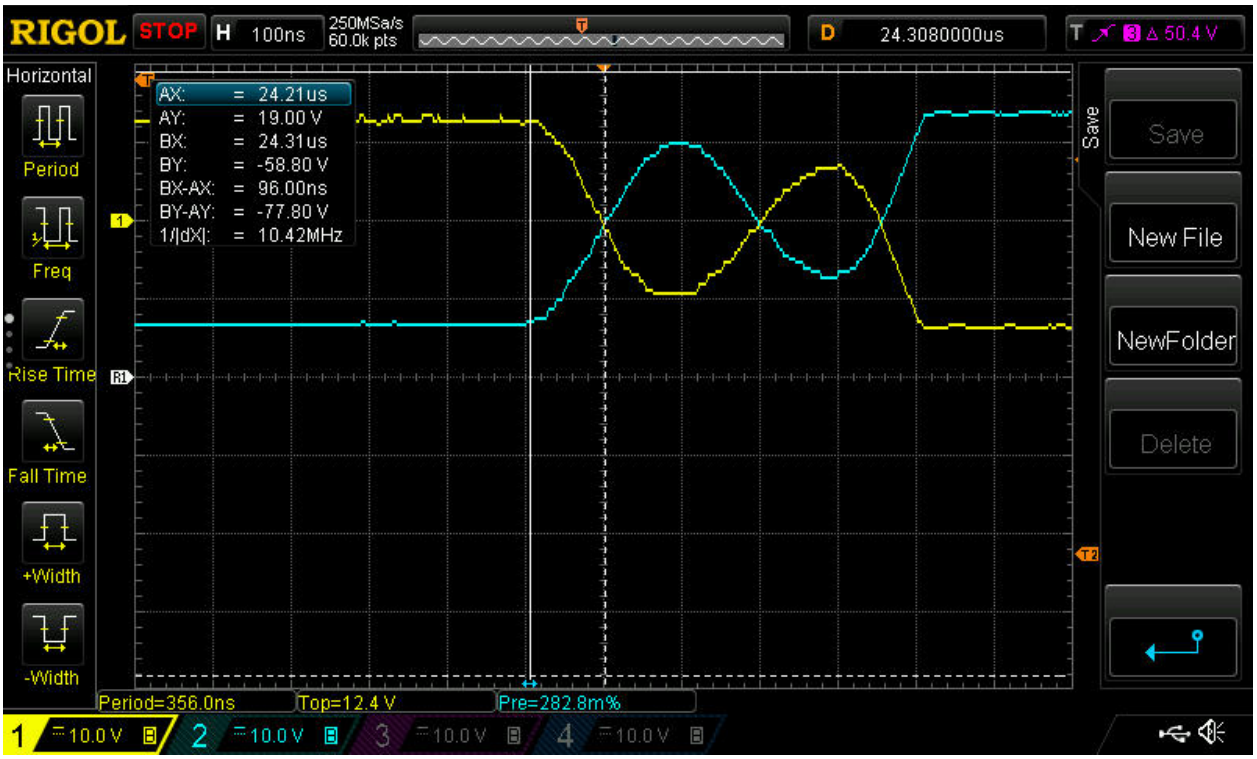


FIGURE 6. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **356ns**

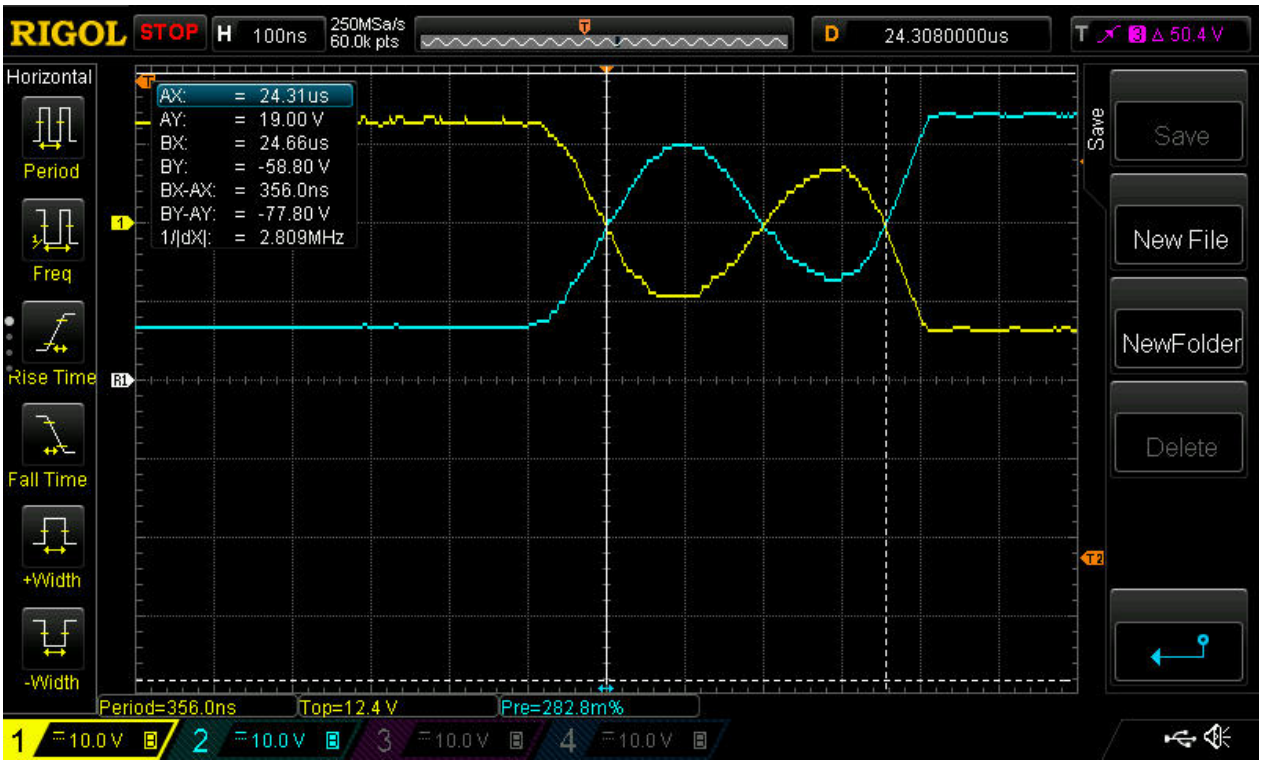


FIGURE 7. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **54ns**

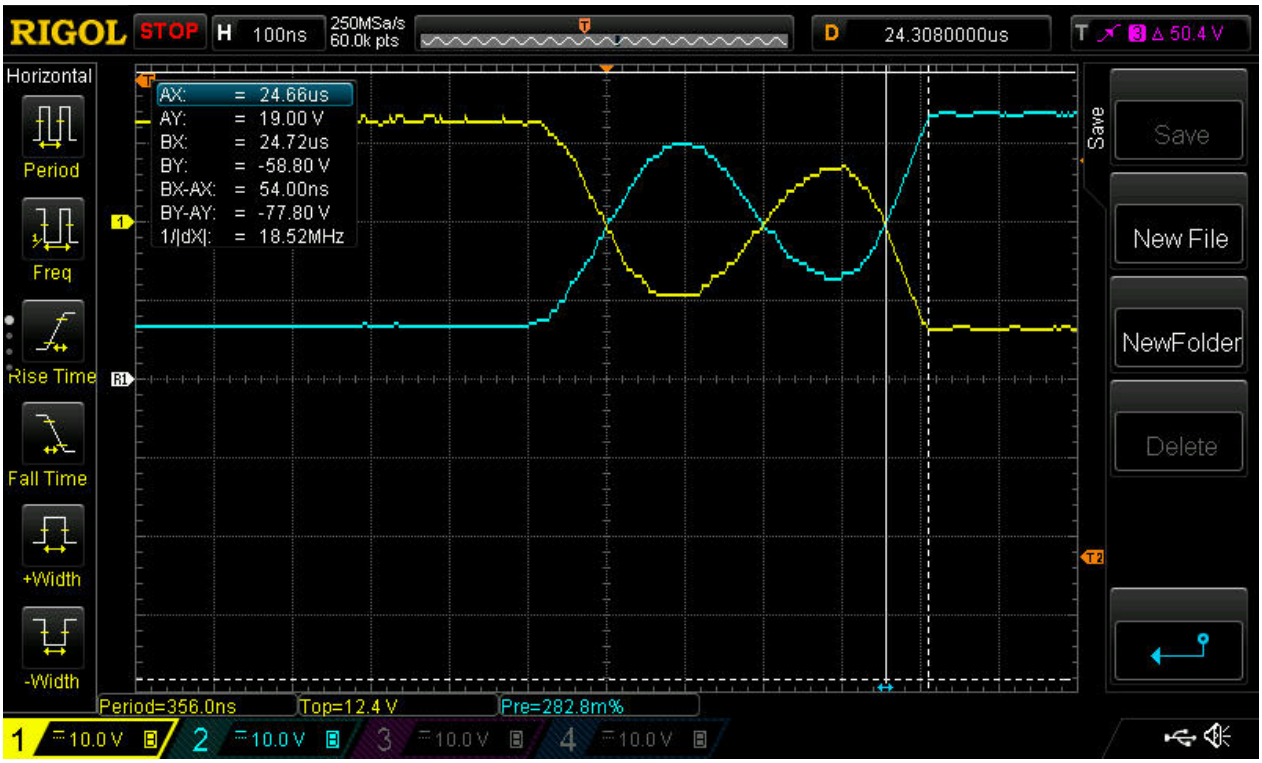


FIGURE 8. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **492ns**

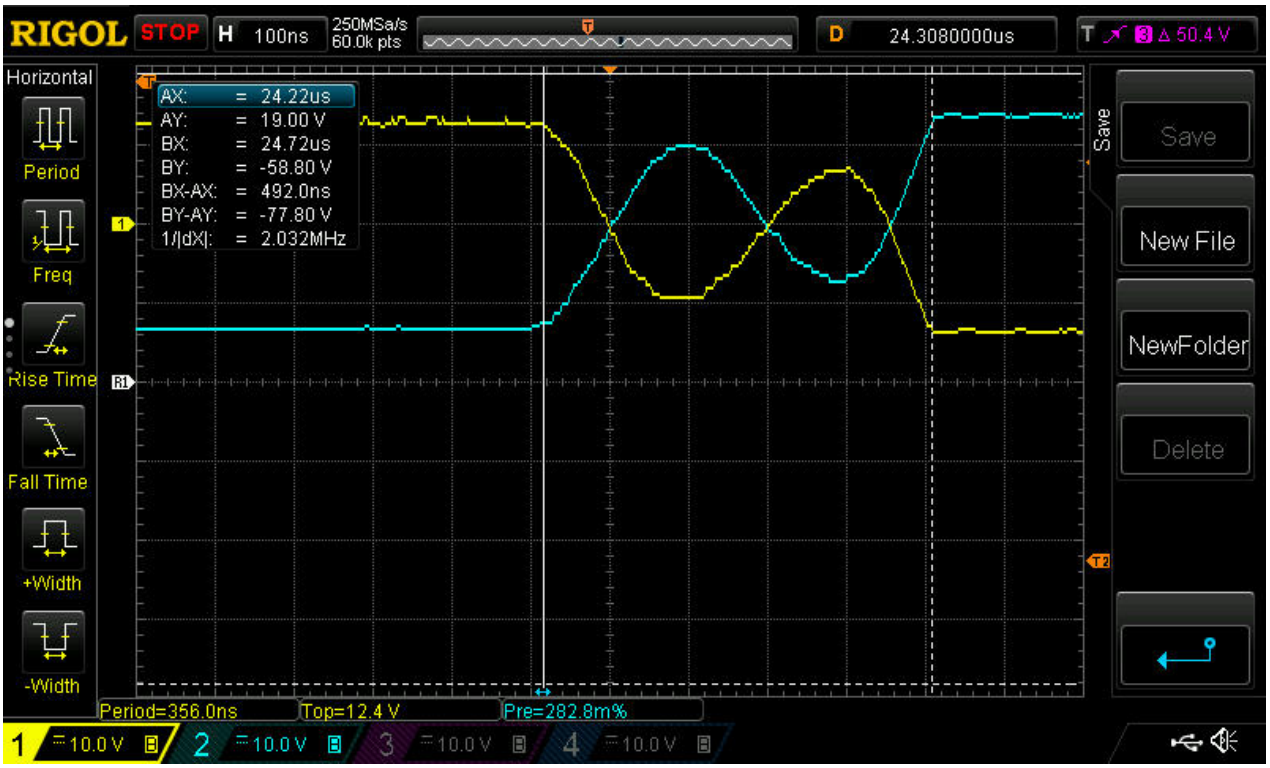


FIGURE 9. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), NO MOSFET, NO DC LINK -- **566ns**

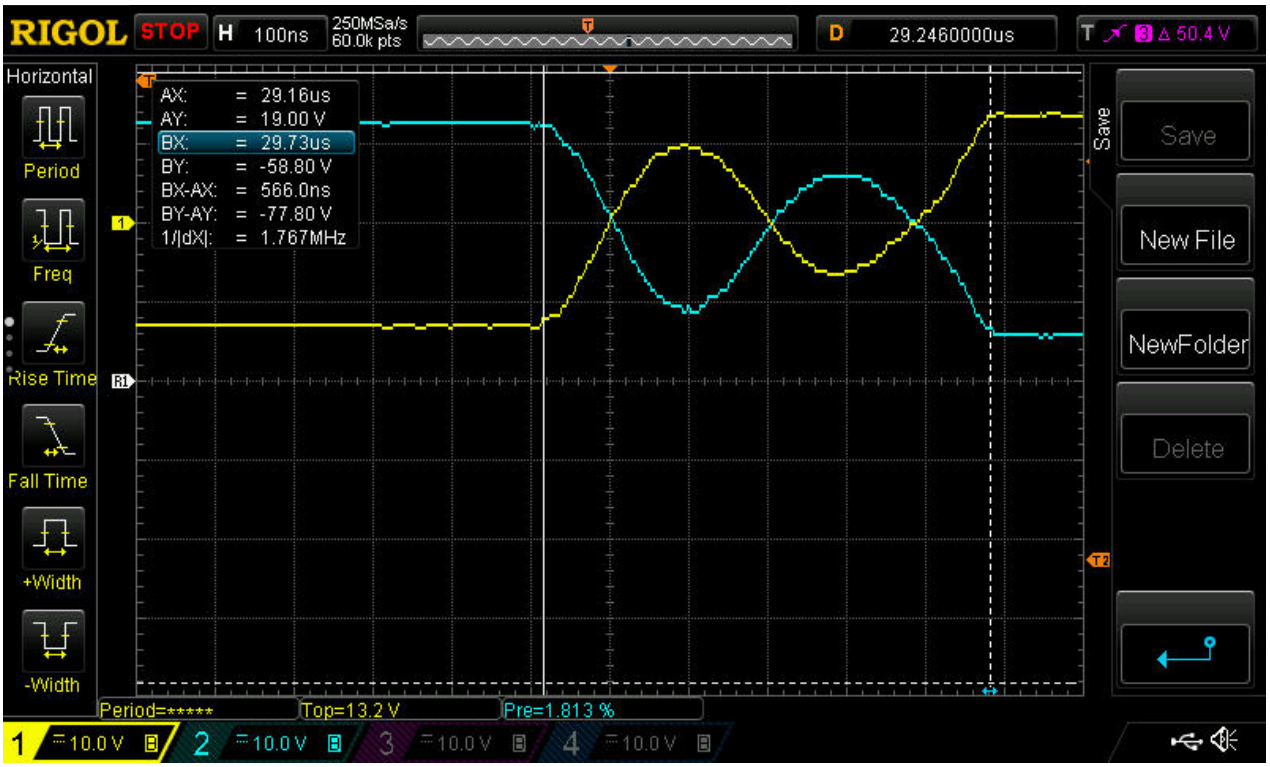


FIGURE 10. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **94ns**

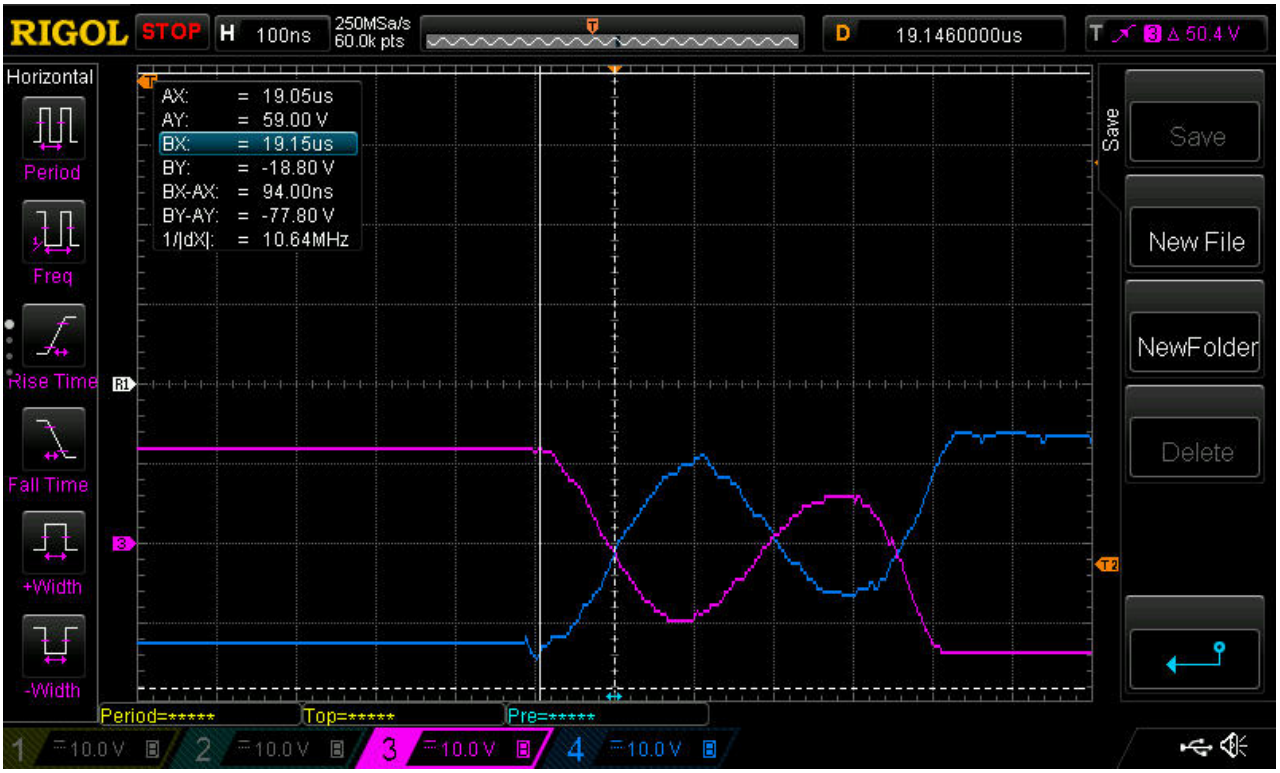


FIGURE 11. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **358ns**

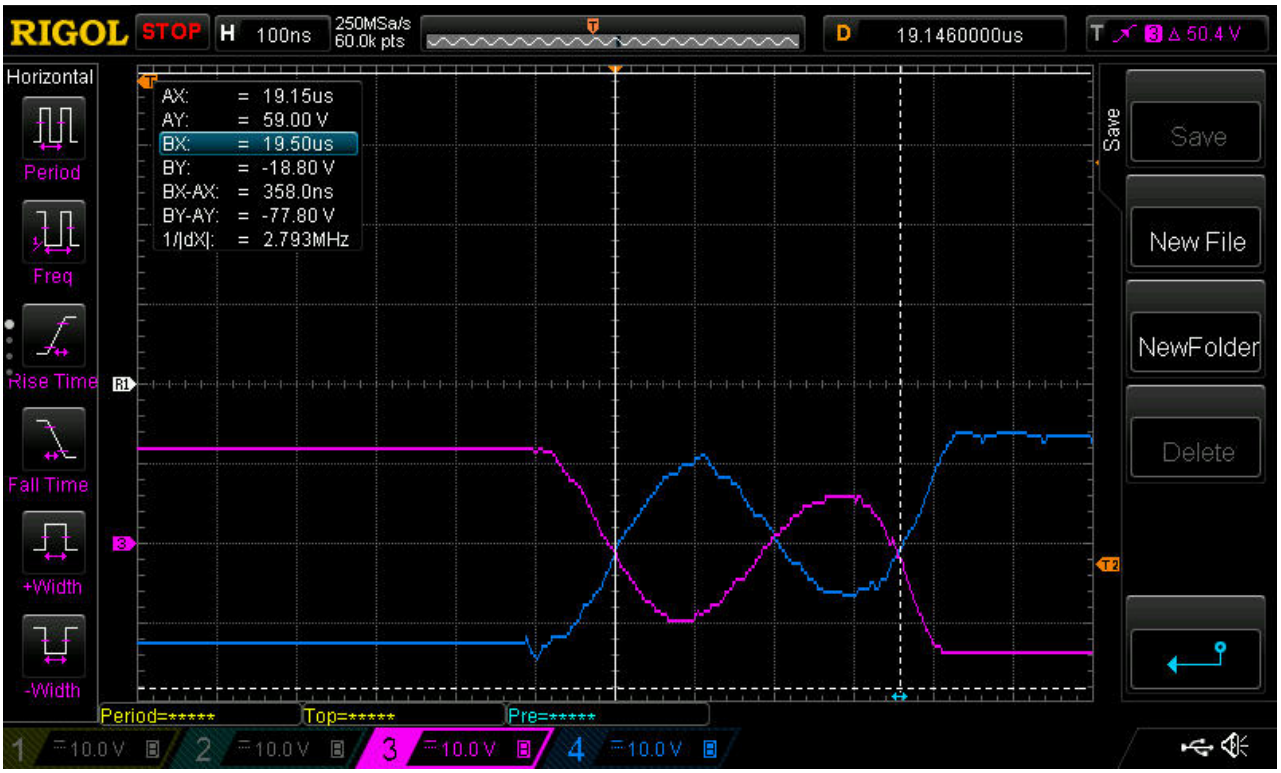


FIGURE 12. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **58ns**

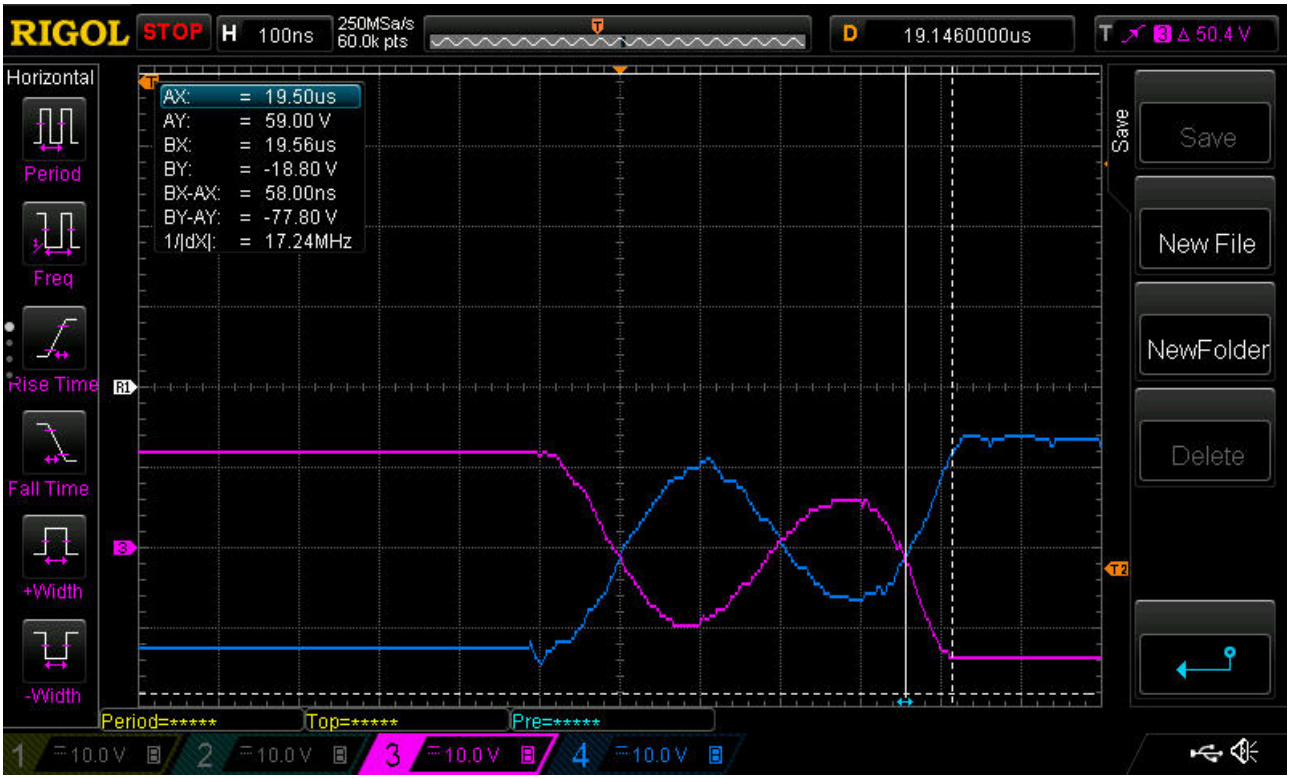


FIGURE 13. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **102ns**

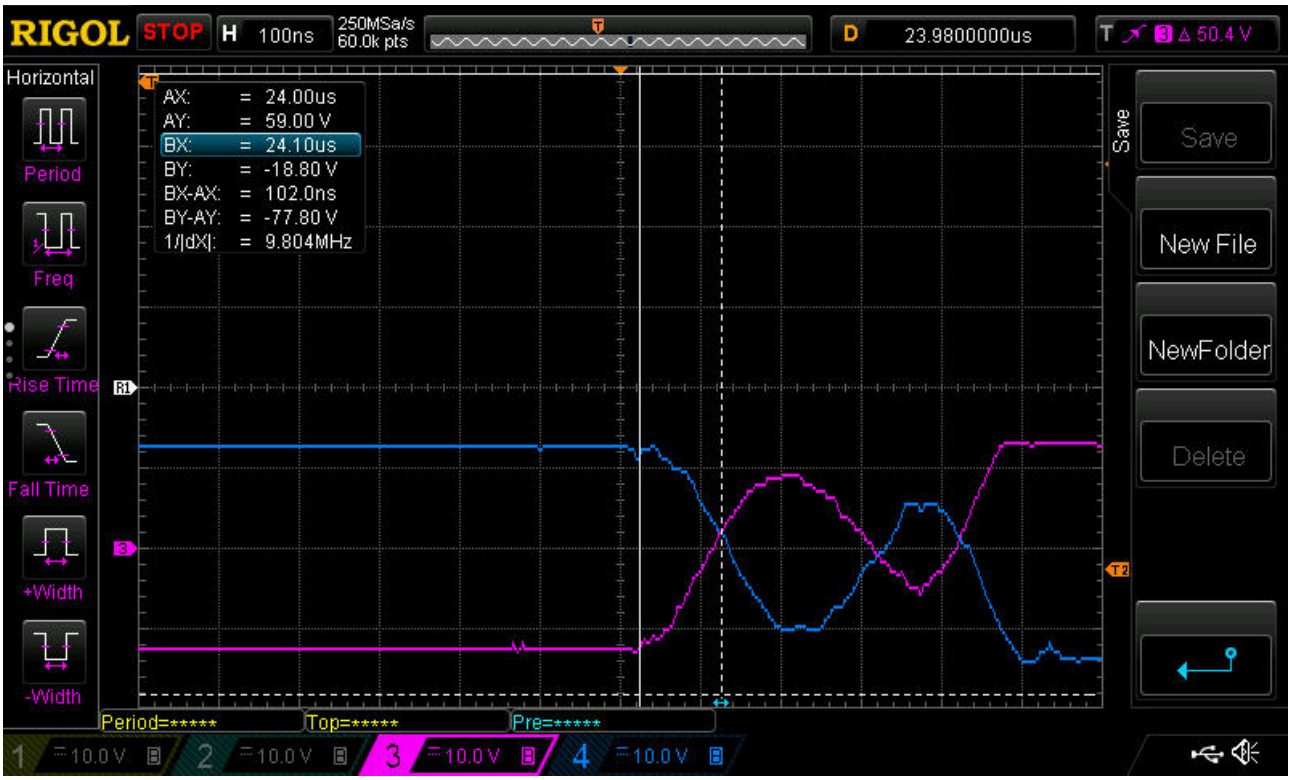


FIGURE 14. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **300ns**

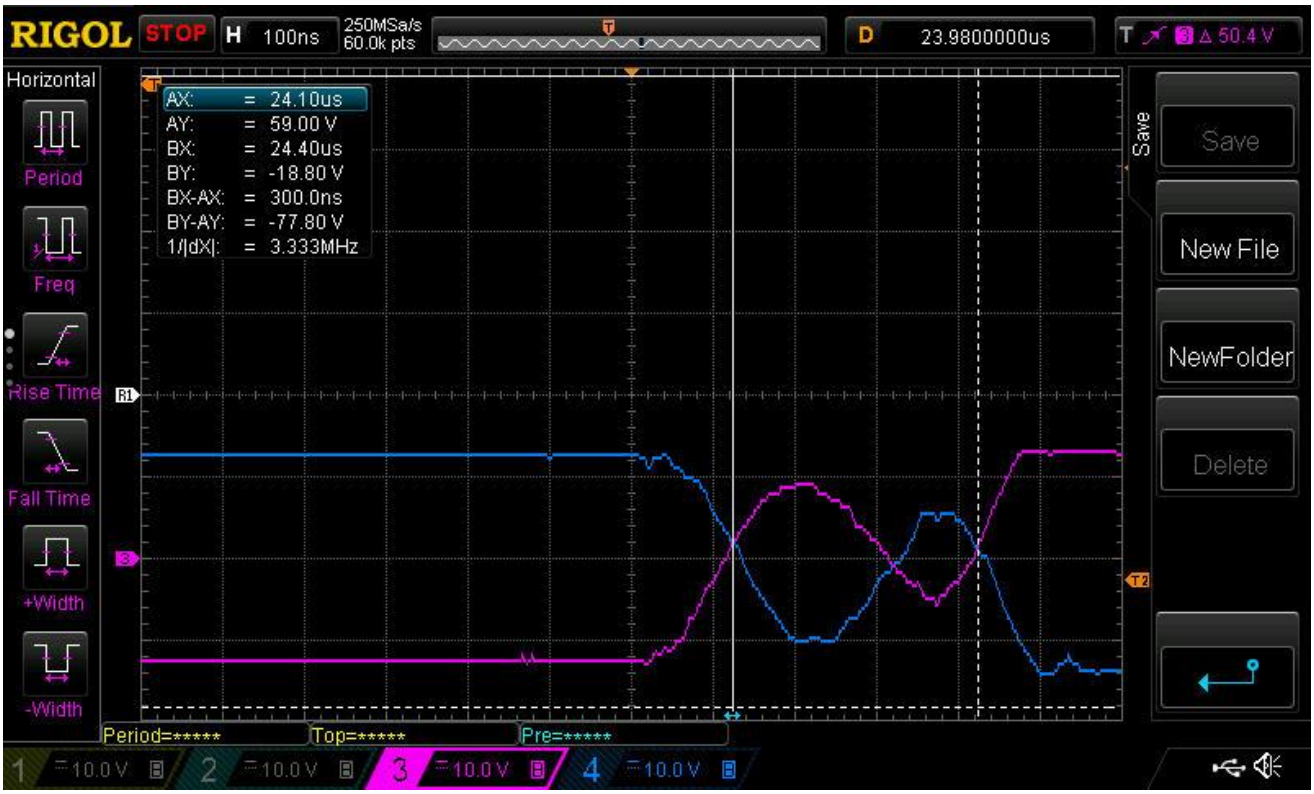


FIGURE 15. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **58ns**

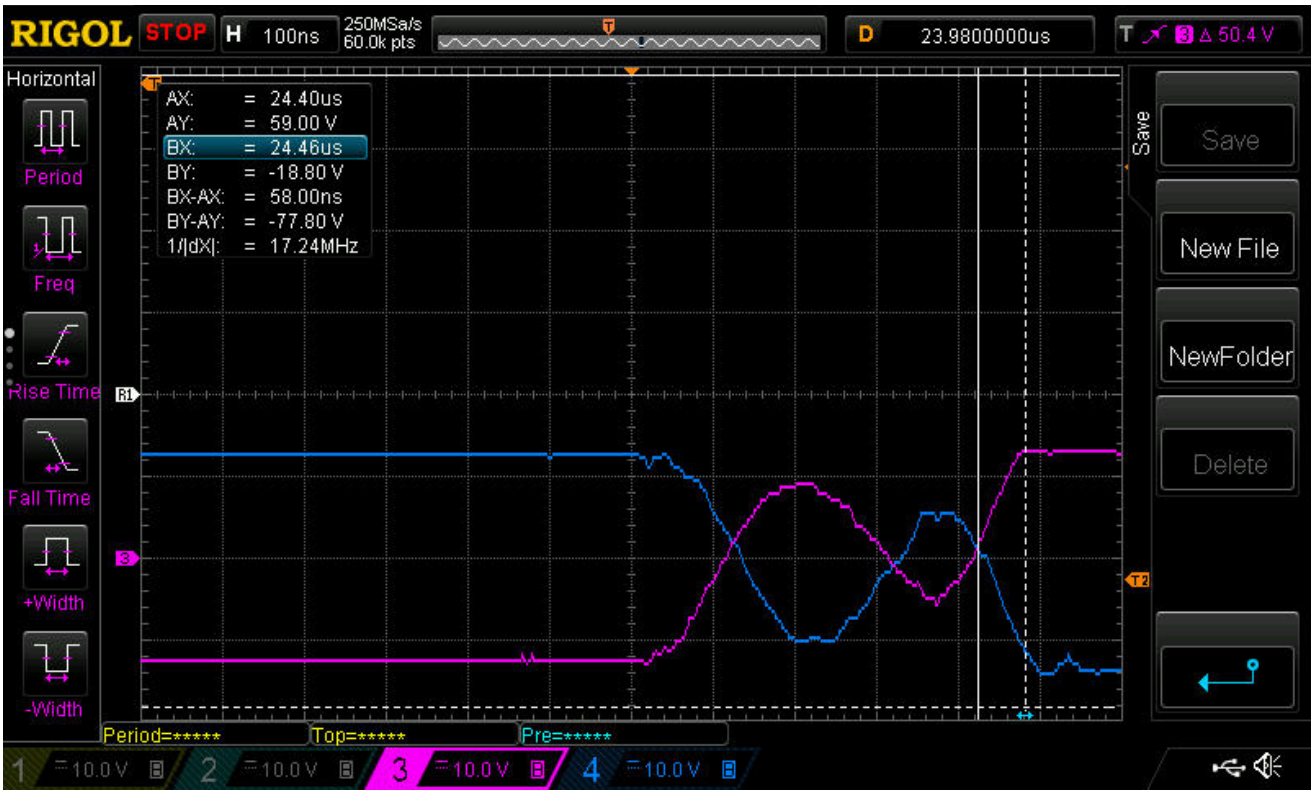


FIGURE 16. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **74ns**

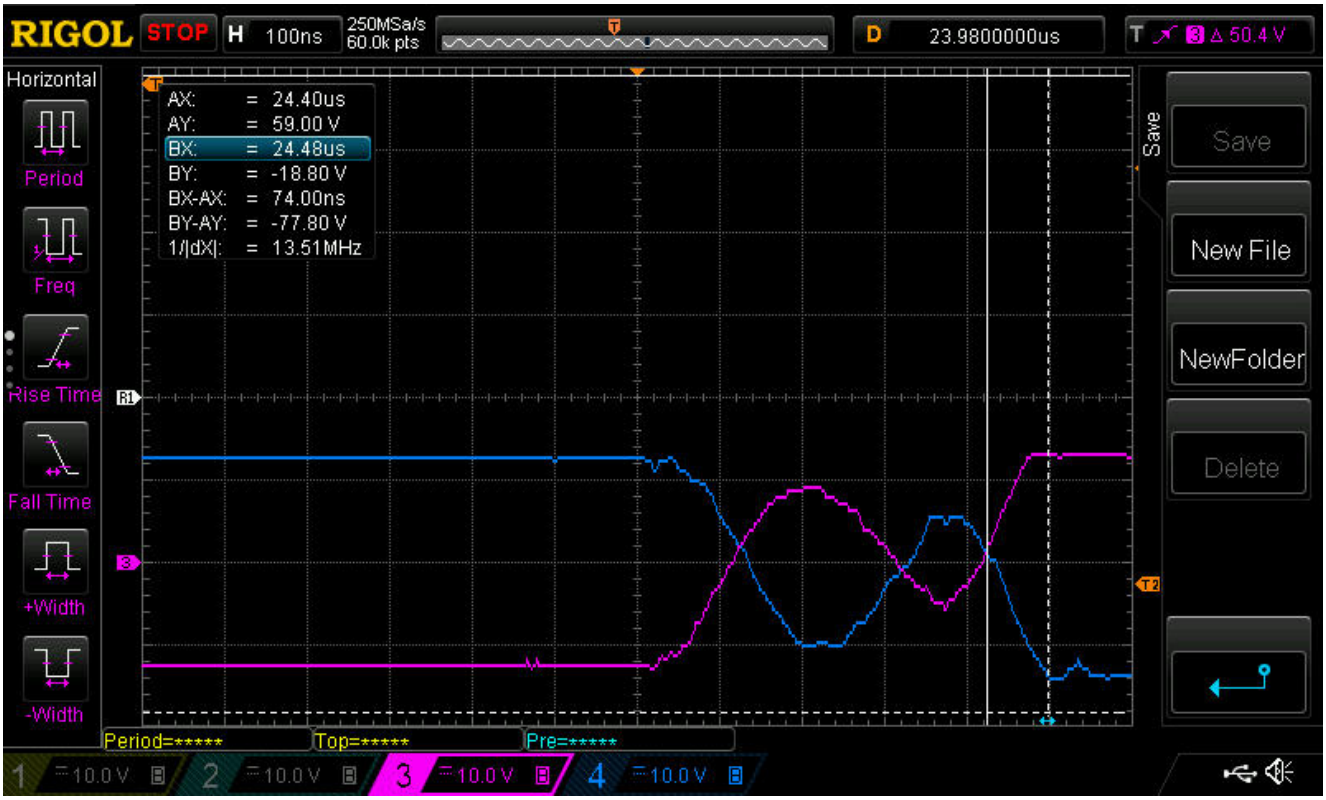


FIGURE17. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **518ns**

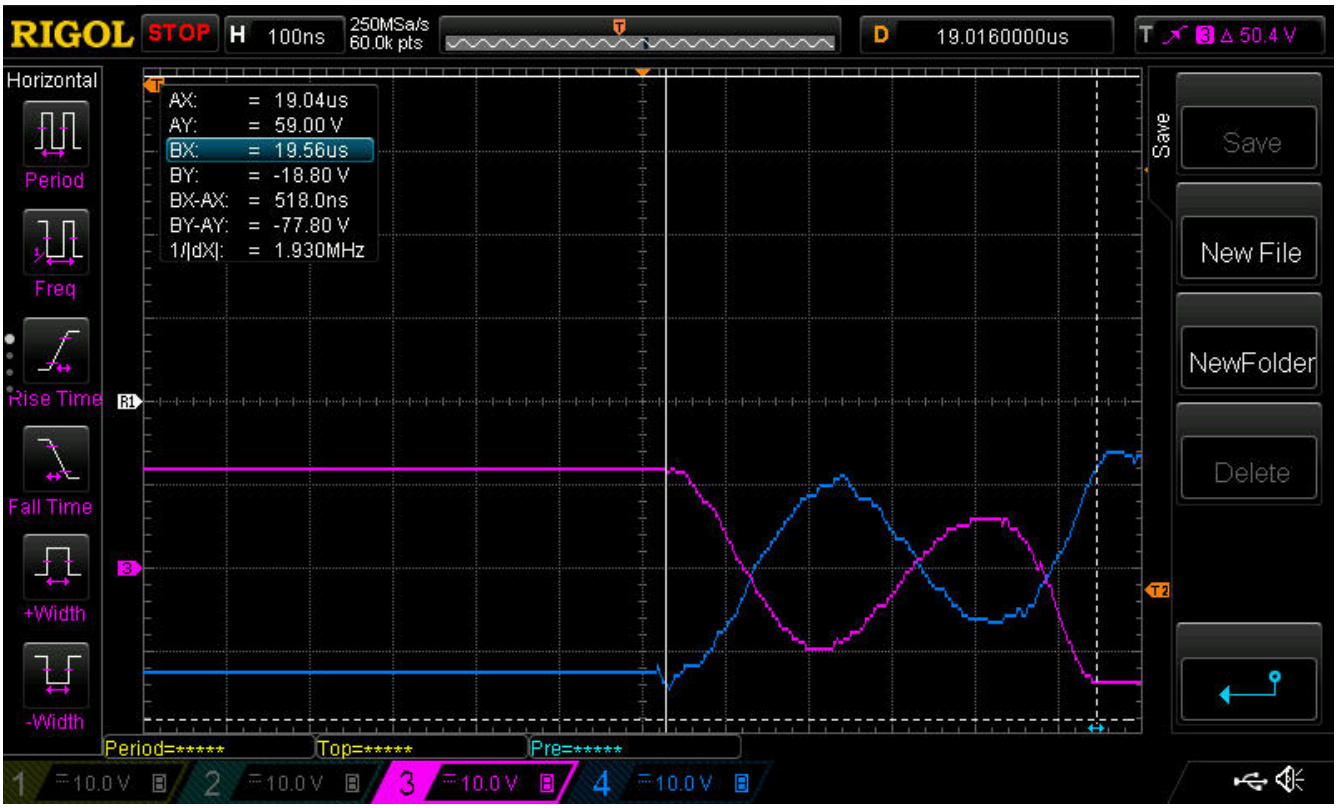


FIGURE 18. UCC28950 GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **474ns**

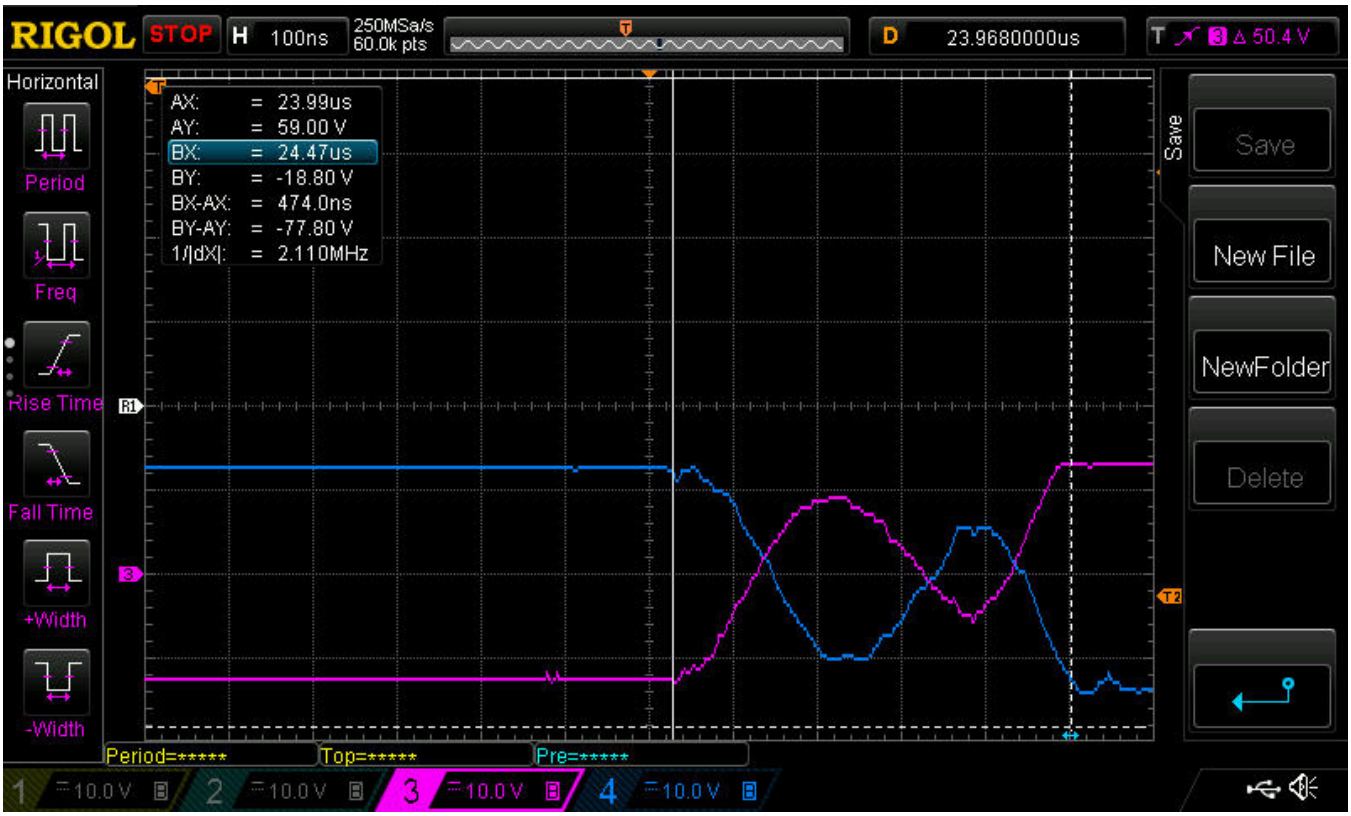


FIGURE 19. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **208ns**

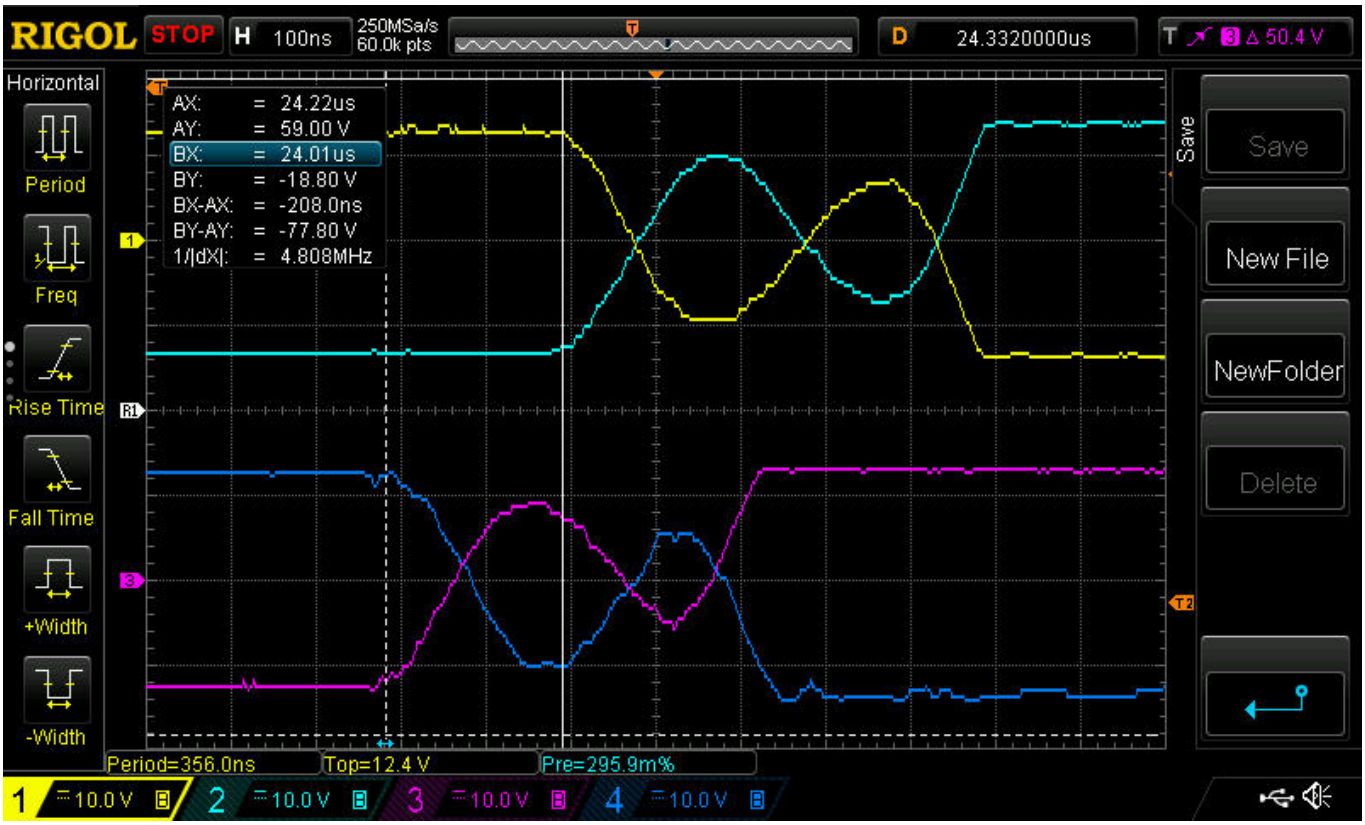


FIGURE 20. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **258ns**

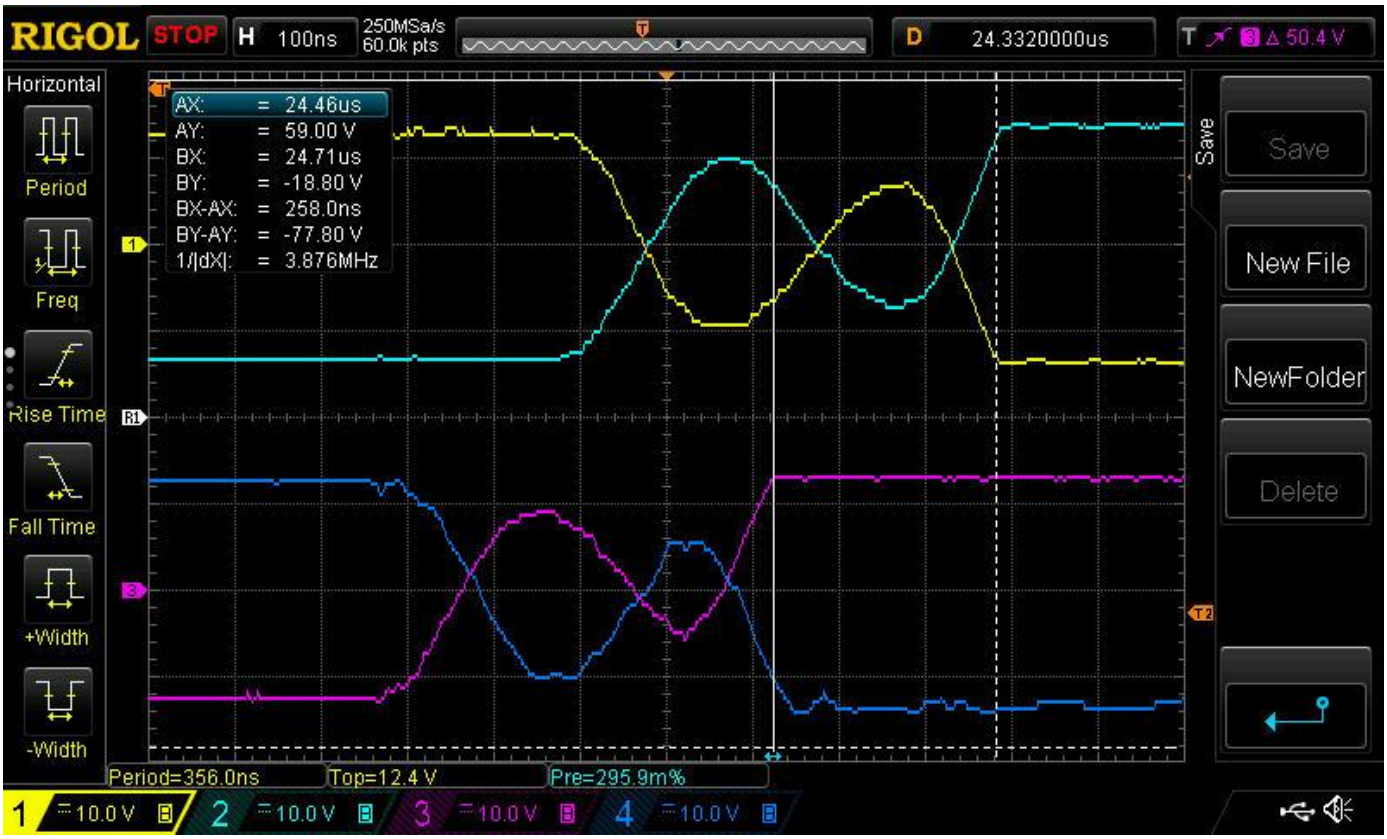


FIGURE 21. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **200ns**

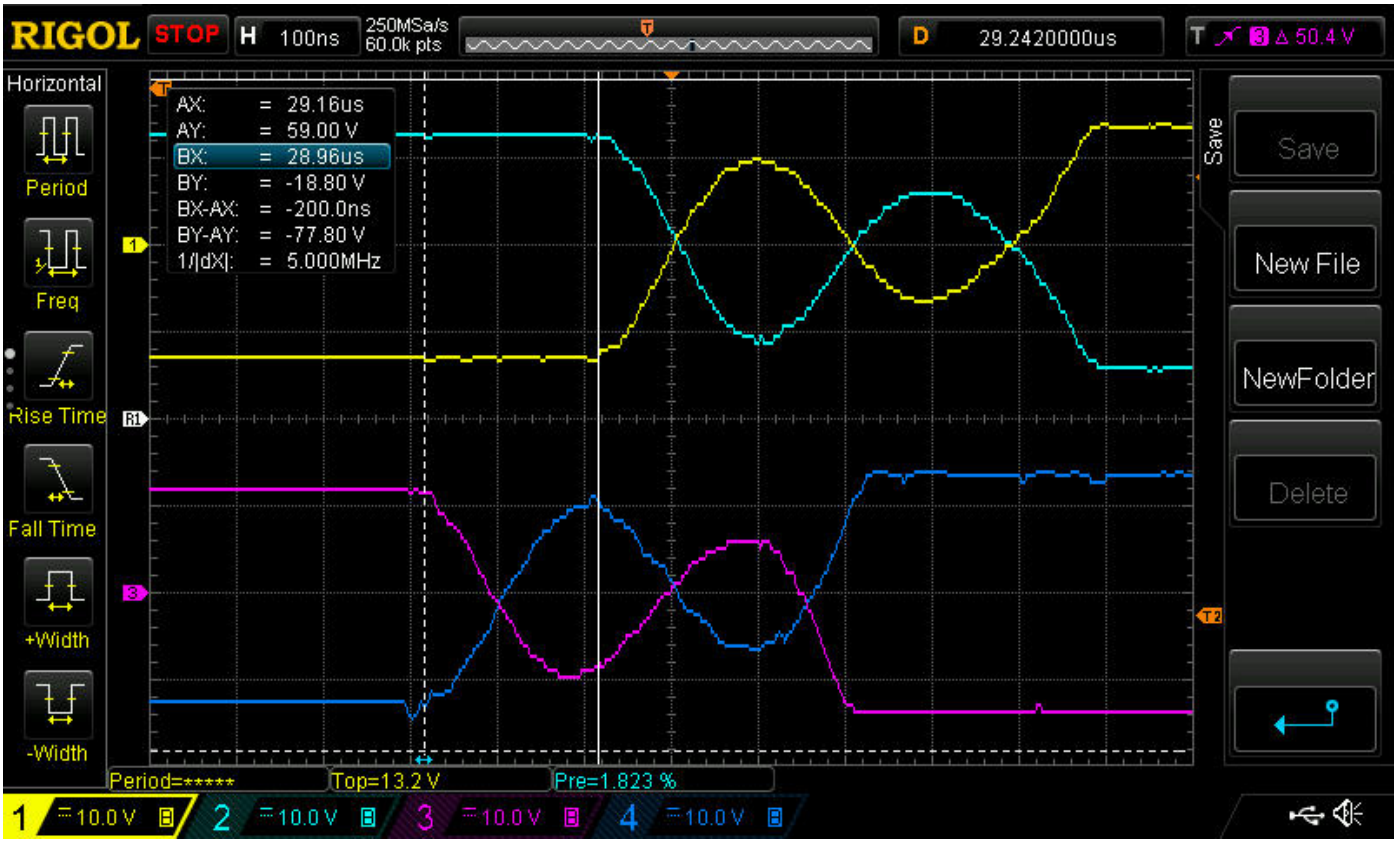
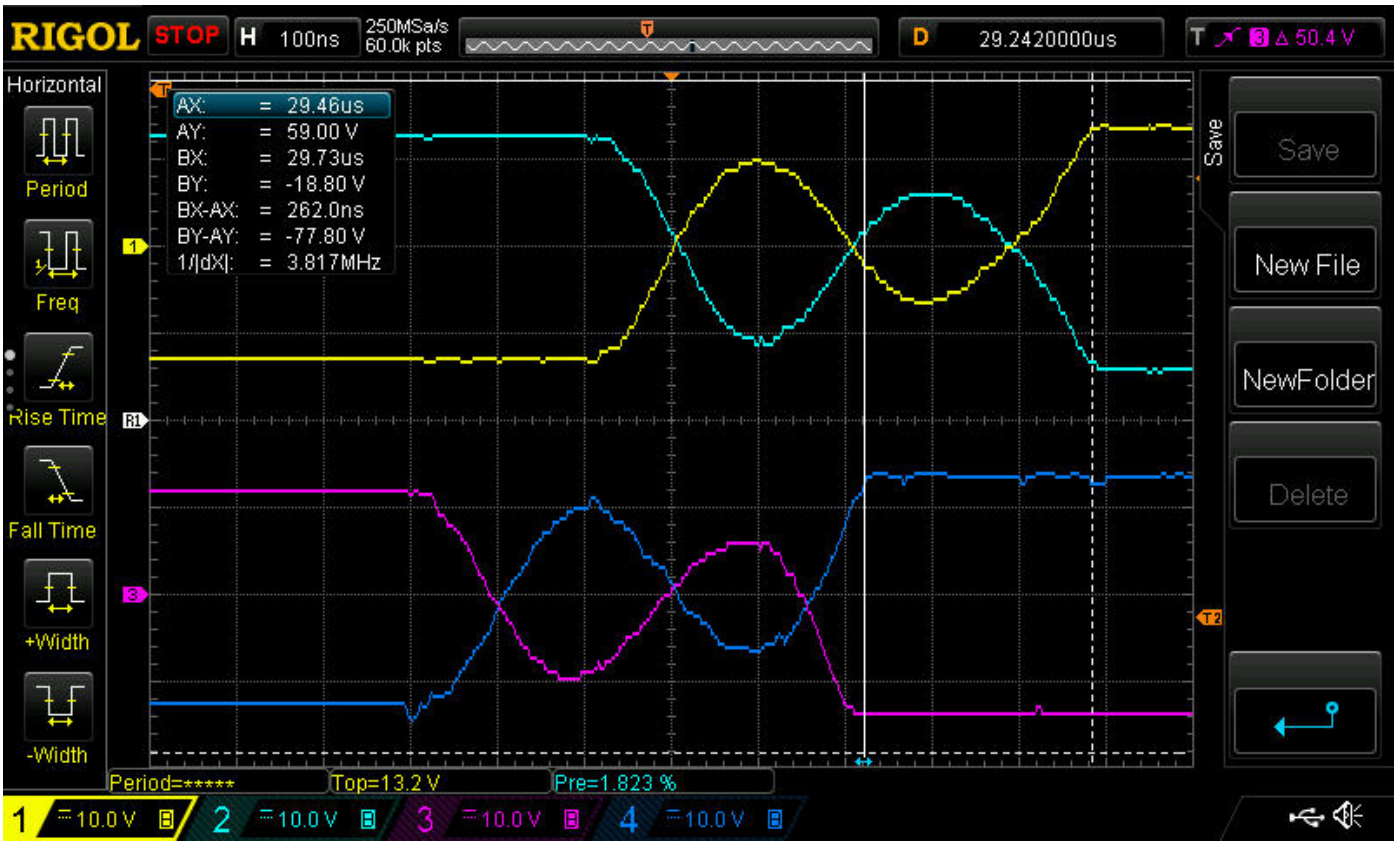


FIGURE 22. UCC28950 GDT PA LEG (Q1 Yellow, Q2 Teal), GDT AP LEG (Q3 Magenta, Q4 Blue), NO MOSFET, NO DC LINK -- **262ns**


RIGOL
STOP
H 100ns
250MSa/s
60.0k pts
D 29.2420000us
T 3 Δ 50.4 V
Horizontal
Period
Freq
Rise Time
Fall Time
+Width
-Width
AX: = 29.46us
AY: = 59.00 V
BX: = 29.73us
BY: = -18.80 V
BX-AX: = 262.0ns
BY-AY: = -77.80 V
1/|dX|: = 3.817MHz
Save
Save
New File
NewFolder
Delete
Period=*****
Top=13.2 V
Pre=1.823 %
1 10.0 V
2 10.0 V
3 10.0 V
4 10.0 V