Minipac
Assembly Design review
Build 2C

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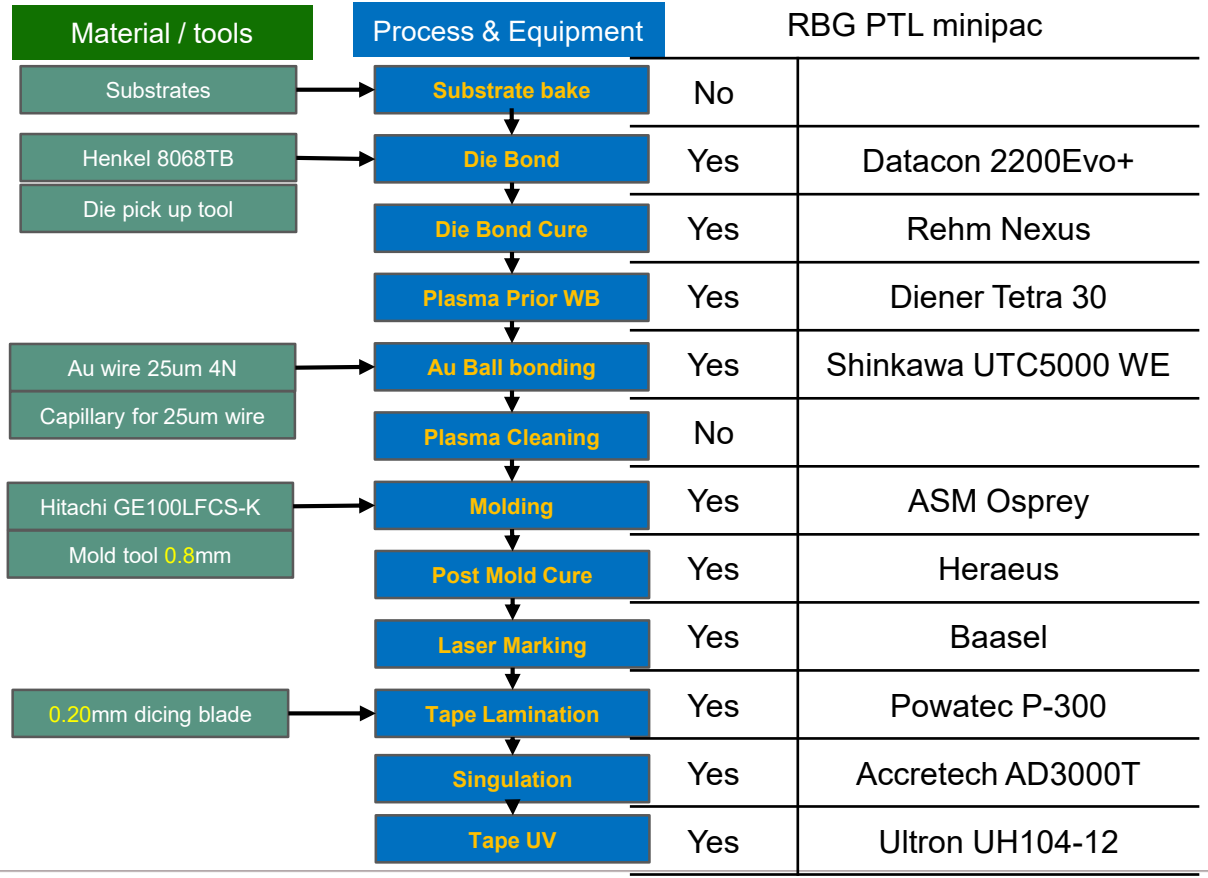
25 Jan 2023

- restricted -

Background - Assembly flow



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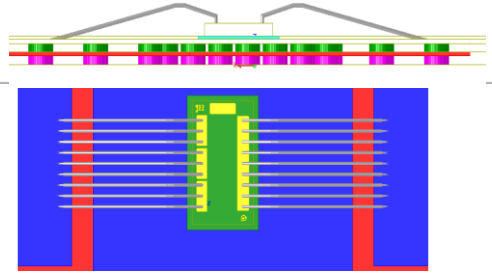
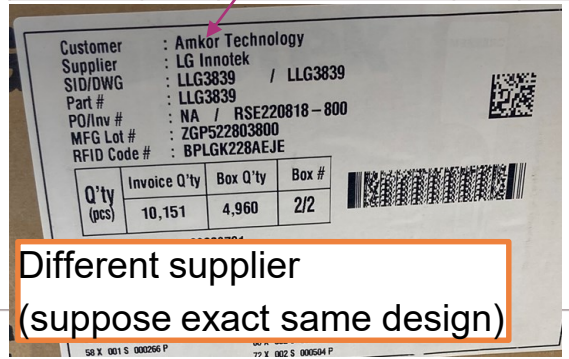
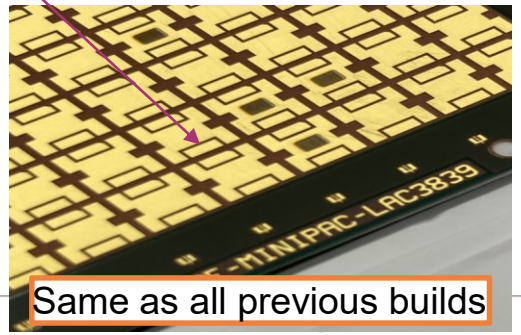
DoE plan overview



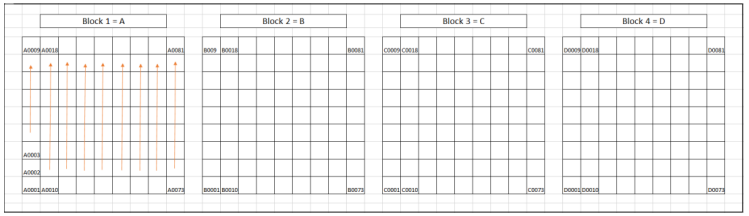
DoE	Run	Substrate			Moscap						Qty (gross/net)	Assy Drawing link
					Die ID	Wafer ID	Die Size		Coordinate			
		Strip	Supplier	Block			X	Y	X	Y		
2C	1	**Strip1**	LAC/Access	1	R9500B_V6 5.5pF	RU105508.03 wfr#20 (RBG, N044 substrate)	1314	522	572	780	30/20	LAC3839_lib__LAC3839_N9500Bv6_BW1c2c__DOEm_1_2022_12_02_14-46.dwg
2C	2	**Strip2**	LLG3839/LGiT	1	R9500B_V6 5.5pF	RU105508.03 wfr#20 (RBG, N044 substrate)	1314	522	572	780	30/20	
2C	3	**Strip1**	LAC/Access	2	R9500B_V6 5.5pF	RU105508.03 wfr#20 (RBG, N044 substrate)	1314	522	574	784	30/20	LAC3839_lib__LGIT_N9500Bv6_BW1c2c__DOEm_1_2022_12_02_14-51.dwg
SETUP		Strip1	LAC/Access	3-4								
		Strip2	LLG3839/LGiT	3-4								



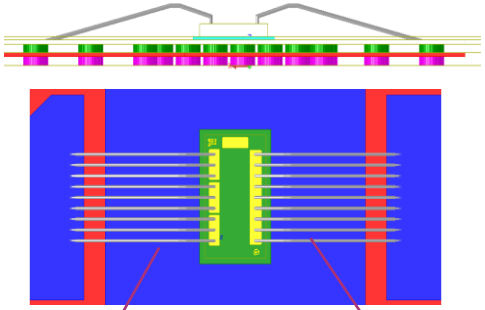
Different supplier
(suppose exact same design)



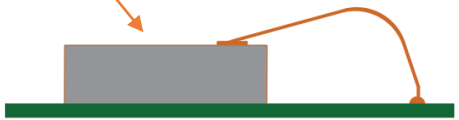
Same as all previous builds



DoE plan overview WB

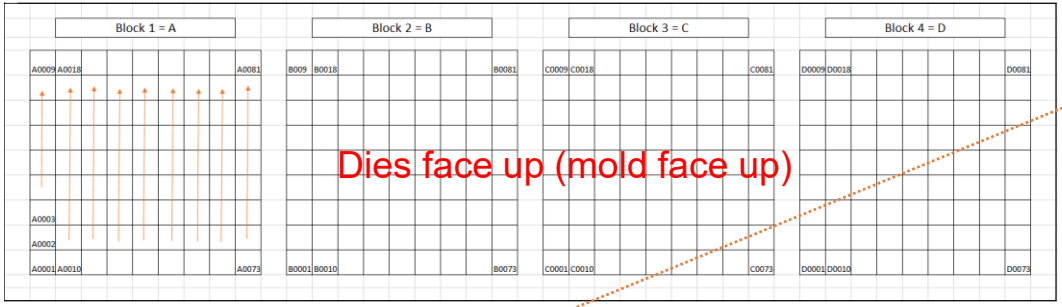


DoE	Run	U4						Bond type	Substrate supplier	Assy Drawing link
		WB Gate			WB drain					
		Length	Height	Peak dist	Length	Height	Peak dist			
2C	1	1303	215	132	1229	225	120	Foward	Access	LAC3839_lib__LAC3839_N9500Bv6_BW1c2c__DOEm_1_2022_12_02_14-46.dwg
2C	2	1303	215	132	1229	225	120	Foward	LGiT	
2C	3	1303	175	475	1229	175	475	Reverse	Access	LAC3839_lib__LGIT_N9500Bv6_BW1c2c__DOEm_1_2022_12_02_14-51.dwg



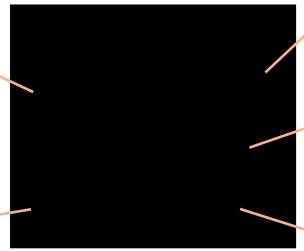
Laser marking

Package	Basic type	Matrix	Pitch
MiniPac	n.a.	4 Areas Columns = 9 / rows = 9	4,4mm x 4,3mm



DoE	Run	Strip	block	Lot ID	Seq
2C_1	**1**	1	1	D2C-1	A0001, A0002,...
2C_2	**2**	2	1	D2C-2	B0001, B0002,...
2C_2	**3**	1	2	D2C-3	C0001, C0002,...

Package top view



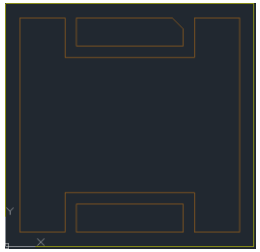
4 characters
Content in summary table

"G" (indicate gate side)

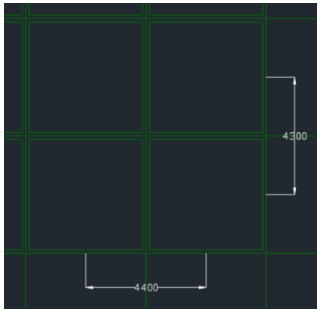
5 characters:
1st Character (letter) is block number
Other 4 characters are sequence number

2 characters "ES"

4 characters (YYWK)



Package top throught view



Pitch

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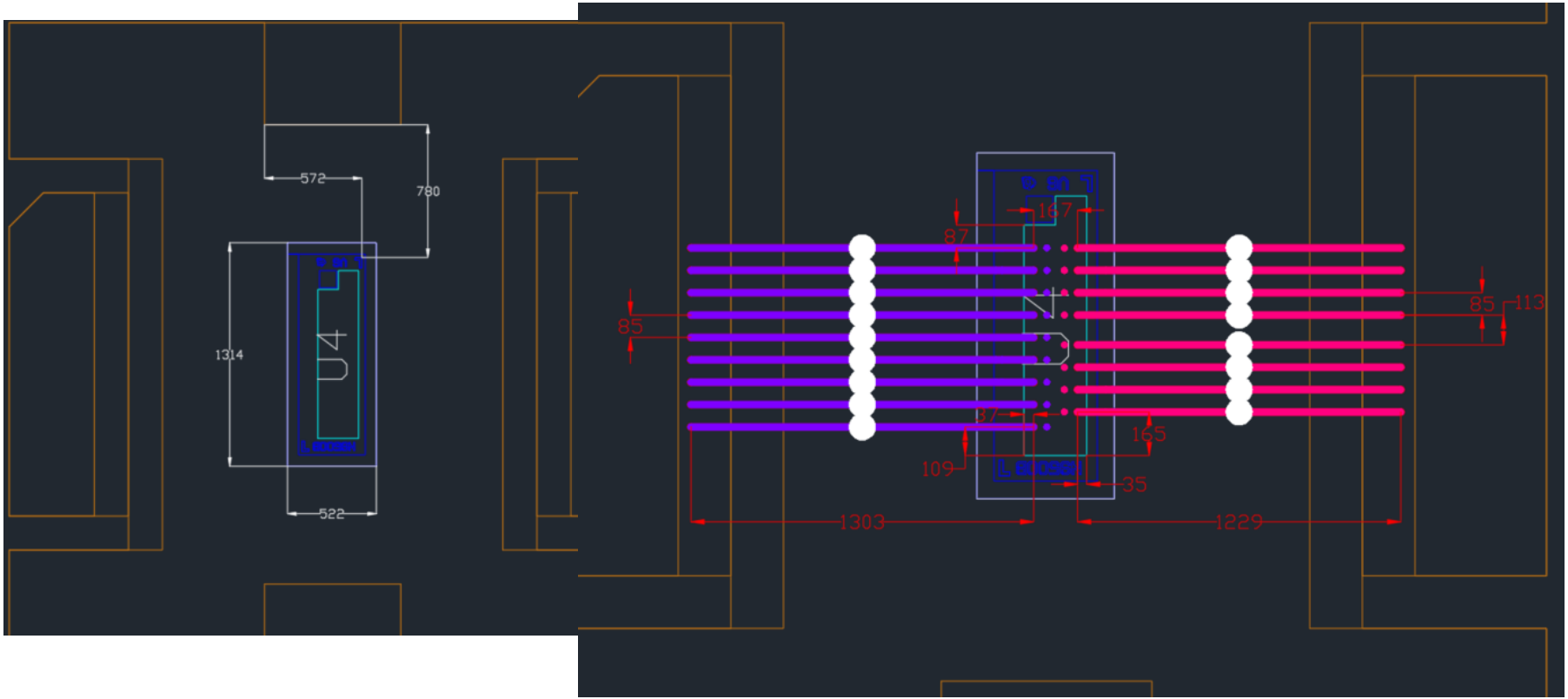
DoE 2C-1



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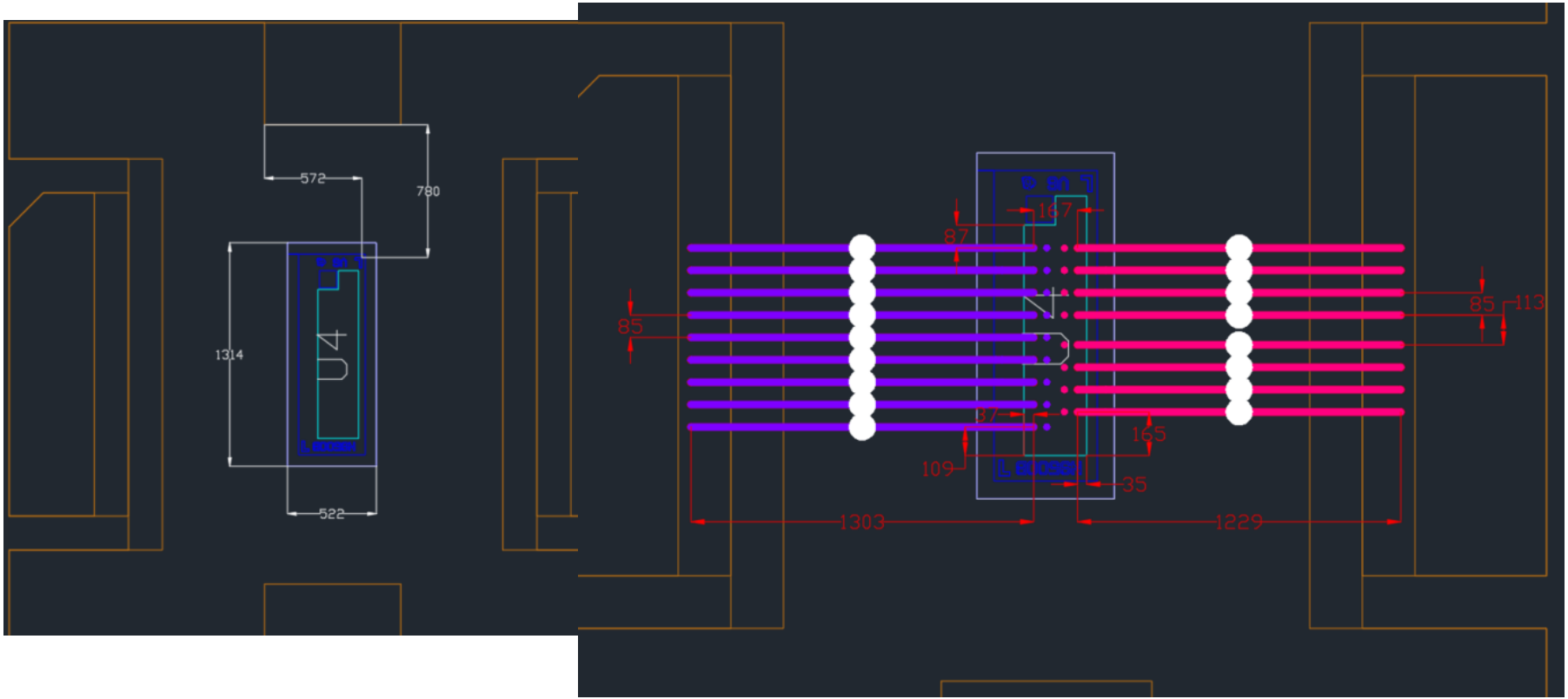
DoE 2C-2



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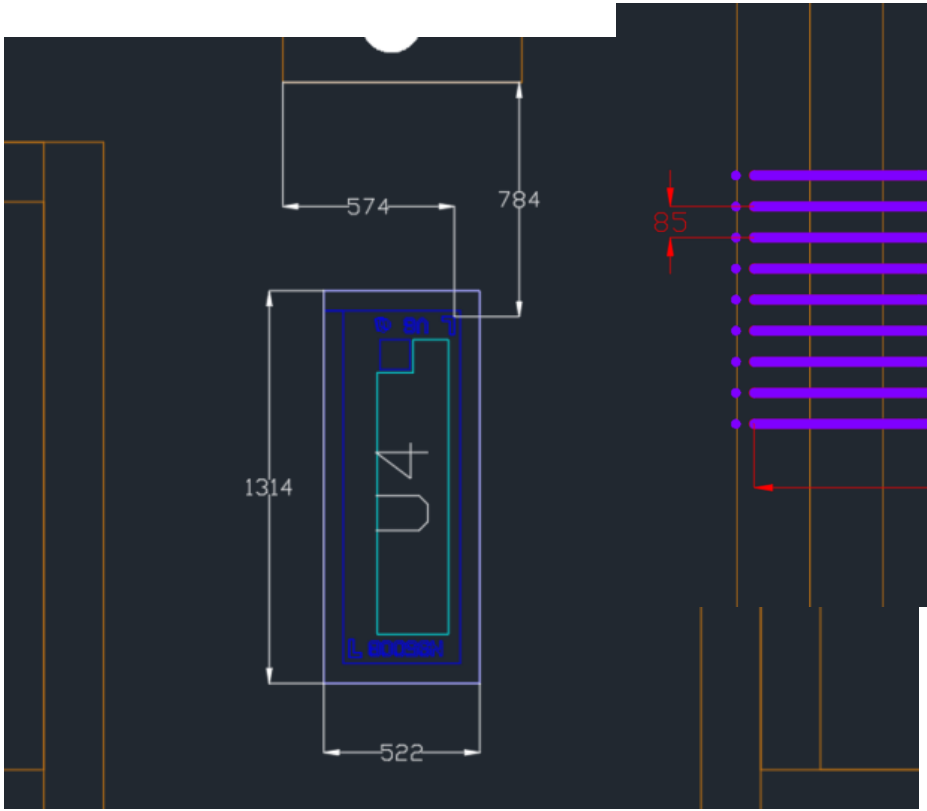
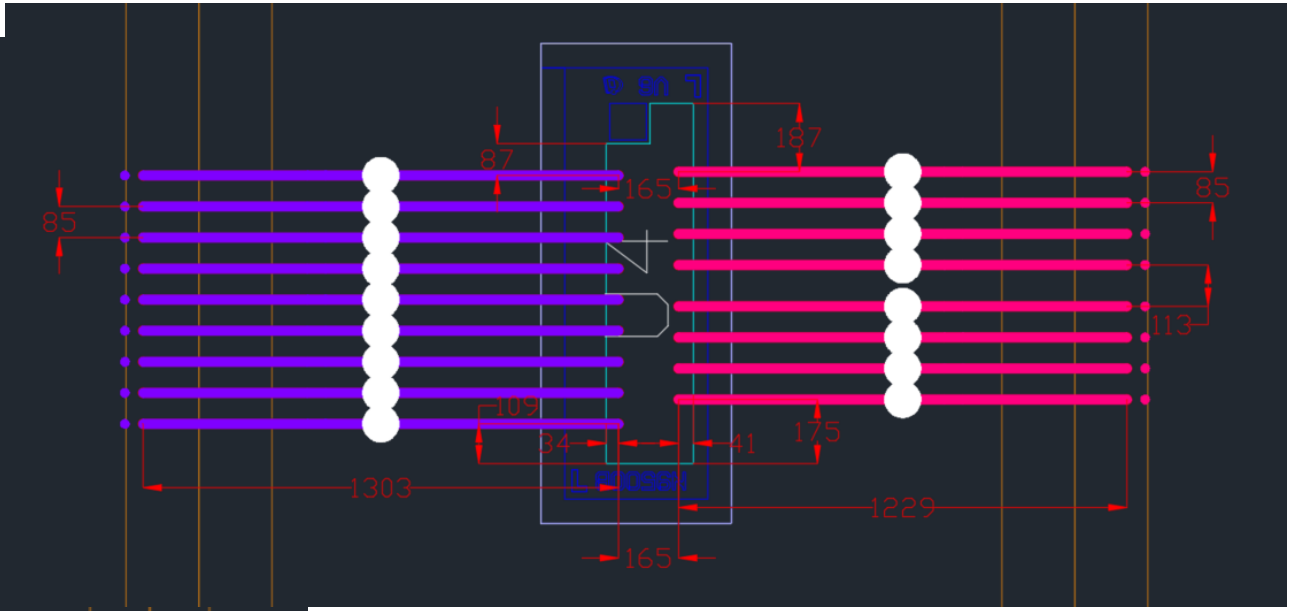
DoE 2C-3





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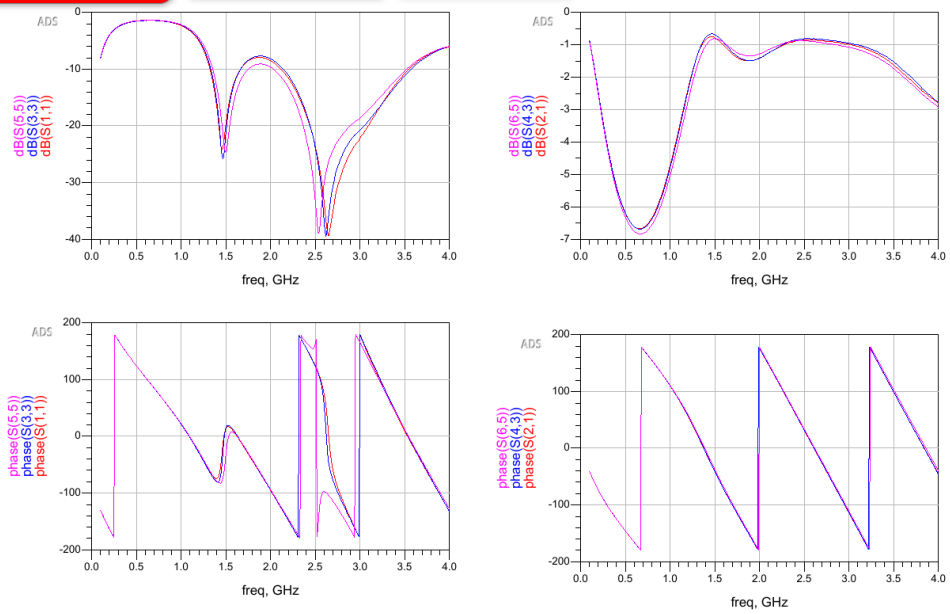
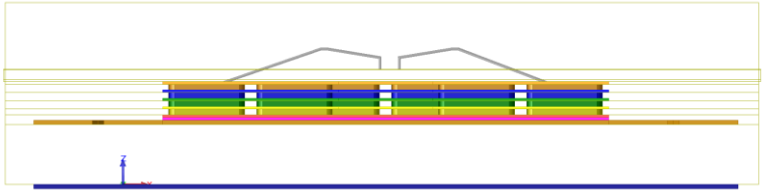
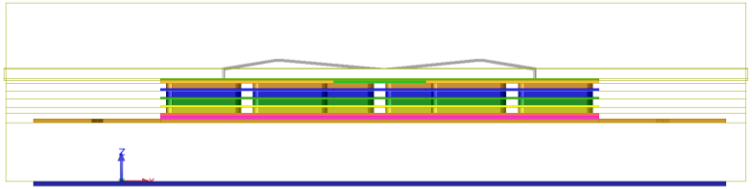
S-parameter measurements Build #2C

Access_Fwd_BW | LGIT_Fwd_BW | Access_rev_BW





Bond type	Substrate supplier
Foward	Access
Foward	LGiT
Reverse	Access



	Access			LGiT		
	Material	Nominal	Tol	Material	Nominal	Tol
SR	AUS308	15	+/-7	PSR-800 AUS SR1	18	+/-10
M1	Cu	20	+/-7	Cu	24	+/-7
D1	GEA-705G	40	+/-15	GEA-705G	47	+/-10
M2	Cu	20	+/-7	Cu	20	+/-7
D2	GEA-705G	50	+/-15	GEA-705G	51	+/-10
M3	Cu	20	+/-7	Cu	20	+/-7
D3	GEA-705G	50	+/-15	GEA-705G	51	+/-10
M4	Cu	20	+/-7	Cu	20	+/-7
D4	GEA-705G	40	+/-15	GEA-705G	47	+/-10
M5	Cu	20	+/-7	Cu	24	+/-7
SR	PSR-4000 AUS308	15	+/-7	PSR-800 AUS SR1	18	+/-10
TT		285	+/-30		0.322	+/-30

- No significant difference betweeen results from Access and Lgit substrates.
- Reverse BW has some difference as expected
- Next step is to compare with simulations and model the BW, Moscap..

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