***Please be noted that this sheet is used for final gerber release**

Board Information	
1-Board Name: 2-Stackup Doc Number:	COM-E R3240-B0011-01-ST
3-Date:	5/10/2021
4-Doc Rev:	1.0
5-Designer	Bob Huang bobhuang@celestica.com
6-Reviewer	
7-Total Layers:	14
8-Board Thickness:	2.0mm +/-10%
9-PCB Material:	TU863+ (VLP Copper Finish)
10-Minimum Pitch	0.5 mm
11-Minimum Finished Via Size	8 mil
12-Estimated Via Number	1000.00
13-Minimum Trace Width/Spacing	4 mil / 4 mil
14-Panel Size	Refer panel drawing
15-Pannel Rotation	No
16-Surface Finish:	OSP
17-Hole plugging	Refer to Fab notes if no other specified requirments
18-Hole Plating Thickness	Refer to Fab notes if no other specified requirements
19-Special Requirements	No
20-PCB outline:	95 mm x 95 mm
21-Backdrilling	Yes
22- UL qualified on All Coree/Core/PP	Yes
23-Quotation or Price	Yes

Vendor Information	
1-VendorName	
2-Date	
3-UL qualified on	
4-Panel Size	
5-UR	
6-Designer	
7-Vendor	

Notes from Celestica:

1. For "Neckdown" traces, if the trace width/space you calculate is larger than 4 mil/4 mil, please do not control the impedance but need vendor to calculate the impedance with the fixed trace width/space;if the trace width/space you calculate is less than 4 mil/4 mil, please use the trace width/spacing to control the impedance.
2. Please do not use 1500 series for prepreg and core between signal layer and GND layer.
3. As no Gerber, signal layer copper 30% and GND/VCC layer copper 70% assumed.
4. Please keep no more than one decimal for trace width and spacing.
5. Do not use 7628 and 1500 series for signal layers.
6. Do not use 106 and 1080 prepreg and core for signal layers, but can be used for VCC layers.
7. Copper finish is VLP
8. Impedance tolerance is ±10%
9. Board thickness tolerance is ±10%

Stackup Control Table

---	*Structure*			*Material*				*Vendor proposed*			*Celestica Proposed*				*Vendor proposed*			
Layer	Type	Thickness (mil)	2-Ply Required	PCB Material	Fibre Type	Copper Weight (oz)	DK (for Simulation)	Fibre Type/Copper Weight (oz)	Thickness (mil)	Dk(@2G)	Impedance spec (Ohms)	Reference layer	Width (/space):mil	Sim Z0	Impedance spec (Ohms)	Reference layer	Width (/space):mil	Sim Z0
	SM	0.50			SM		3.60		1.40	3.60								
1	TOP	2.10				0.5 oz + plating (HTE +plating)		0.5 oz + plating (HTE +plating)	2.10		S40±10%	2	9	40.2	S40±10%	2	9	40.7
											S50±10%	2	6	49.7	S50±10%	2	6	50.2
											D85±10%	2	7/7.6	84.6	D85±10%	2	7/7.6	85.2
											D90±10%	2	6/7.1	90.2	D90±10%	2	6/7.1	89.0
											D95±10%	2	5.0/7.0	95.2	D95±10%	2	5.0/7.0	95.9
											D100±10%	2	4.5/7.1	100.2	D100±10%	2	4.5/7.1	100.4
	Prepreg	3.00	N	TU863+	1080(RC68%)X1		3.60	1080(RC68%)X1	3.30	3.60								
2	GND1	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60									
	Core	4.00	N	TU863+	3313(RC54%)X1		3.60	3313(RC54%)X1	4.00	3.60								
3	SIG1	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60		S40±10%	2&4	6	39.8	S40±10%	2&4	6	40.2
											S50±10%	2&4	4	50.02	S50±10%	2&4	4	49.8
											D85±10%	2&4	5.3/9	84.9	D85±10%	2&4	5.3/9	84.8
											D90±10%	2&4	4.8/9	89.8	D90±10%	2&4	4.8/9	89.3
											D95±10%	2&4	4.3/8.0	94.65	D95±10%	2&4	4.3/8.0	94.9
											D100±10%	2&4	3.8/8.2	100.2	D100±10%	2&4	3.8/8.2	99.6
	Prepreg	4.00	N	TU863+	2116(RC53%)X1		3.60	2116(RC53%)X1	4.40	3.60								
4	GND2	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60									
	Core	4.00	N	TU863+	3313(RC49%)X1		3.60	3313(RC49%)X1	3.50	3.60								
5	SIG2	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60		S40±10%	4&7	8.3	40.12	S40±10%	4&7	8.3	39.5
											S50±10%	4&7	5.8	49.8	S50±10%	4&7	5.8	49.9
											D85±10%	4&7	5.8/6.2	85.12	D85±10%	4&7	5.8/6.2	84.8
											D90±10%	4&7	5.5/6.2	89.67	D90±10%	4&7	5.5/6.2	89.9
											D95±10%	4&7	4.8/8.0	94.94	D95±10%	4&7	4.8/8.0	94.8
											D100±10%	4&7	4.5/7.3	100.47	D100±10%	4&7	4.5/7.3	99.9
	Prepreg	12.00	Y	TU863+	2116(RC58%)X2		3.60	2116(RC58%)X2	10.50	3.60								
6	SIG3	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60		S40±10%	4&7	8.3	40.12	S40±10%	4&7	8.3	39.5
											S50±10%	4&7	5.8	49.8	S50±10%	4&7	5.8	49.9
											D85±10%	4&7	5.8/6.2	85.12	D85±10%	4&7	5.8/6.2	84.8
											D90±10%	4&7	5.5/6.2	89.67	D90±10%	4&7	5.5/6.2	89.9
											D95±10%	4&7	4.8/8.0	94.94	D95±10%	4&7	4.8/8.0	94.8
											D100±10%	4&7	4.5/7.3	100.47	D100±10%	4&7	4.5/7.3	99.9
	Core	4.00	N	TU863+	3313(RC49%)X1		3.60	3313(RC49%)X1	3.50	3.60								
7	VCC1	1.20				1oz (VLP)		1oz (VLP)	1.20									
	Prepreg	5.00	Y	TU863+	1080(RC68%)X2		3.60	1080(RC68%)X2	6.30	3.60								
8	VCC2	1.20				1oz (VLP)		1oz (VLP)	1.20									
	Core	4.00	N	TU863+	3313(RC49%)X1		3.60	3313(RC49%)X1	3.50	3.60								
9	SIG4	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60		S40±10%	8&11	8.3	40.12	S40±10%	8&11	8.3	39.5
											S50±10%	8&11	5.8	49.8	S50±10%	8&11	5.8	49.9
											D85±10%	8&11	5.8/6.2	85.12	D85±10%	8&11	5.8/6.2	84.8
											D90±10%	8&11	5.5/6.2	89.67	D90±10%	8&11	5.5/6.2	89.9
											D95±10%	8&11	4.8/8.0	94.94	D95±10%	8&11	4.8/8.0	94.8
											D100±10%	8&11	4.5/7.3	100.47	D100±10%	8&11	4.5/7.3	99.9
	Prepreg	12.00	Y	TU863+	2116(RC58%)X2		3.60	2116(RC58%)X2	10.50	3.60								
10	SIG5	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60		S40±10%	8&11	8.3	40.12	S40±10%	8&11	8.3	39.5
											S50±10%	8&11	5.8	49.8	S50±10%	8&11	5.8	49.9
											D85±10%	8&11	5.8/6.2	85.12	D85±10%	8&11	5.8/6.2	84.8
											D90±10%	8&11	5.5/6.2	89.67	D90±10%	8&11	5.5/6.2	89.9
											D95±10%	8&11	4.8/8.0	94.94	D95±10%	8&11	4.8/8.0	94.8
											D100±10%	8&11	4.5/7.3	100.47	D100±10%	8&11	4.5/7.3	99.9
	Core	4.00	N	TU863+	3313(RC49%)X1		3.60	3313(RC49%)X1	3.50	3.60								
11	GND8	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60									
	Prepreg	4.00	N	TU863+	2116(RC53%)X1		3.60	2116(RC53%)X1	4.40	3.60								
12	SIG6	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60		S40±10%	11&13	6	39.8	S40±10%	11&13	6	40.2
											S50±10%	11&13	4	50.02	S50±10%	11&13	4	49.8
											D85±10%	11&13	5.3/9	84.9	D85±10%	11&13	5.3/9	84.8
											D90±10%	11&13	4.8/9	89.8	D90±10%	11&13	4.8/9	89.3
											D95±10%	11&13	4.3/8.0	94.65	D95±10%	11&13	4.3/8.0	94.9
											D100±10%	11&13	3.8/8.2	100.2	D100±10%	11&13	3.8/8.2	99.6
	Core	4.00	N	TU863+	3313(RC54%)X1		3.60	3313(RC54%)X1	4.00	3.60								
13	GND9	0.60				0.5oz (VLP)		0.5oz (VLP)	0.60									
	Prepreg	3.00	N	TU863+	1080(RC68%)X1		3.60	1080(RC68%)X1	3.30	3.60								
14	BOTTOM	2.10				0.5 oz + plating (HTE +plating)		0.5 oz + plating (HTE +plating)	2.10		S40±10%	13	9	40.2	S40±10%	13	9	40.7
											S50±10%	13	6	49.7	S50±10%	13	6	50.2
											D85±10%	13	7/7.6	84.6	D85±10%	13	7/7.6	85.2
											D90±10%	13	6/7.1	90.2	D90±10%	13	6/7.1	89.0
											D95±10%	13	5.0/7.0	95.2	D95±10%	13	5.0/7.0	95.9
											D100±10%	13	4.5/7.1	100.2	D100±10%	13	4.5/7.1	100.4
	SM	0.50					3.60		1.40	3.60								
	Board Thickness:	80.60	mil					Board Thickness:	80.10	mil								
		2.05	mm						2.03	mm								

Sheet Revision		
Revision	Description	Date
1.0	First release.	5/10/2021