

HORNET-1 Fabrication Draftman

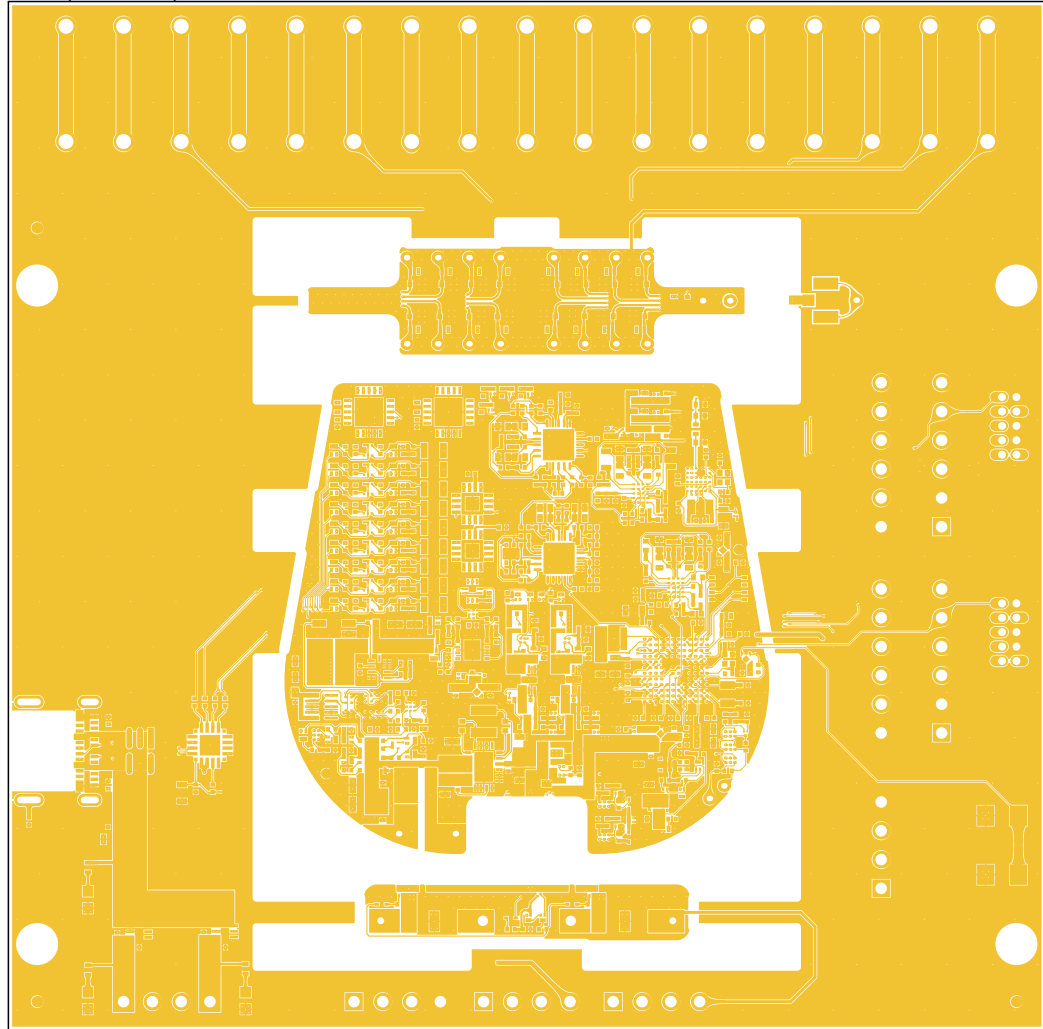
Fabrication drawings

Fabrication notes

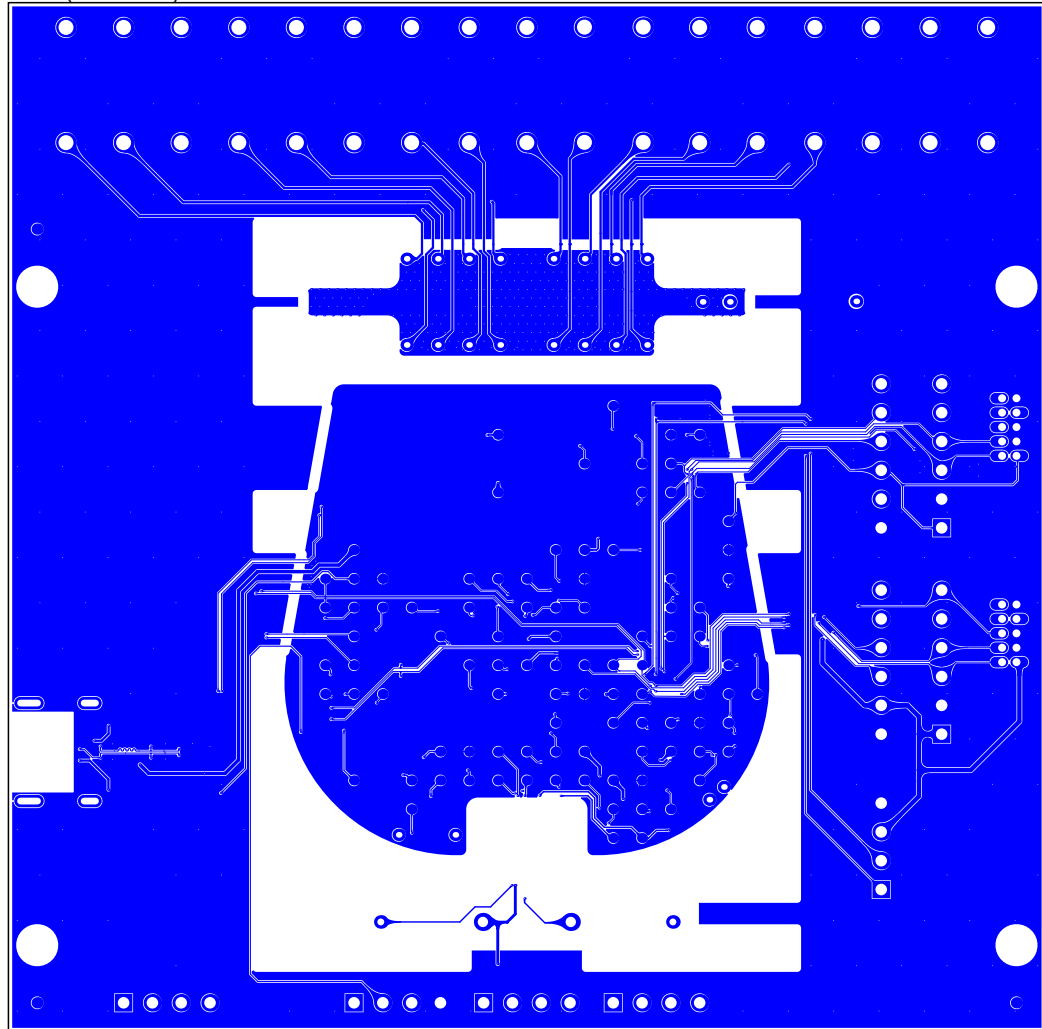
Notes: Unless otherwise specified, all dimensions are in mm.

1. Board material is polyimide RoHS 140°C Tg or higher.
2. RoHS compliant materials to be used for lead-free assembly process.
3. Minimum trace width/spacing is 60um/60um.
4. All 70/200 um (hole/pad) vias must be filled with plating.
5. Surface finish must be ENIG (Electroless Nickel Immersion Gold).
 - Electroless nickel thickness: 3 - 6um (refer to IPC-4552).
 - Immersion gold thickness: 0.05um minimum.
6. Mechanical layer 2 is the board outline file.
7. Mechanical layer 3 is the flex region outline.
8. Mechanical Layer 4 is the break away rail outline.
9. Hole barrel plating is optional.
10. Silkscreen (overlay) is white.
11. Solder mask colour is green
12. Layer stack can be modified and thickness can exceed 0.508mm (20 mil).
13. All boards to pass 100% continuity test for opens and shorts.
14. Impedance control and verification is only required if an impedance table is provided. Refer to the table for the final characteristic impedance of different traces. Fabricator may modify designed trace width.
15. The serial number format could be VerMay.VerMin.Rev-XXXX. VerMay is the major version which is 1, VerMin is the minor version which is 5 and XXXX is the number assigned to the board for its identification.

TOP (Scale 3:2)



BOT (Scale 3:2)



FOCUS

Project:
HORNET-1-IPG.PrjPcb

Title: ME-IPG-V1 PCB Fab. Drawing Ver: 1.5

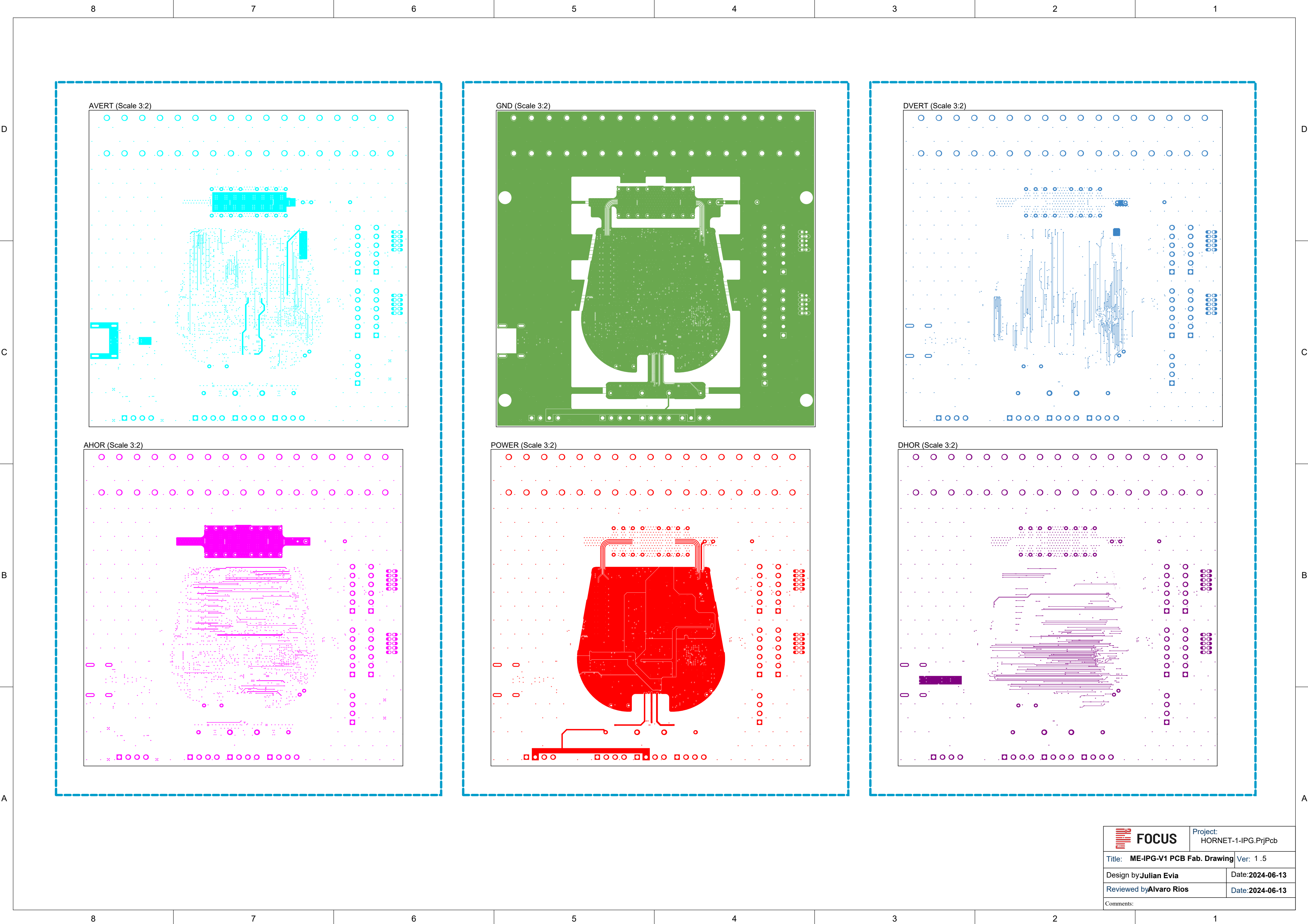
Design by Julian Evia

Date: 2024-06-13

Reviewed by Alvaro Rios

Date: 2024-06-13

Comments:



Rigid/Flex Stackup

Layer Stack Legend (Rigid)

Layer	Gerber	Thickness	Material
Top Solder	GTS	0.018mm(0.7mil)	Surface Material
Top Surface Finish		0.004mm(0.2mil)	Nickel, Gold
TOP	GTL	0.020mm(0.8mil)	Copper
		0.046mm(1.8mil)	Prepeg
AVERT	G1	0.018mm(0.7mil)	Copper
		0.046mm(1.8mil)	Prepreg
AHOR	G2	0.018mm(0.7mil)	Copper
		0.102mm(4.0mil)	Prepeg
GND	G3	0.018mm(0.7mil)	Copper
		0.051mm(2.0mil)	Polyimide
POWER	G4	0.018mm(0.7mil)	Copper
		0.102mm(4.0mil)	Prepreg
DVERT	G5	0.018mm(0.7mil)	Copper
		0.046mm(1.8mil)	Prepreg
DHOR	G6	0.018mm(0.7mil)	Copper
		0.046mm(1.8mil)	Prepreg
BOT	GBL	0.020mm(0.8mil)	Copper
Bottom Surface Finish		0.004mm(0.2mil)	Nickel, Gold
Bottom Solder	GBS	0.018mm(0.7mil)	Surface Material
Total thickness: 0.628mm(24.7mil)			

Layer Stack Legend (Flex)

Layer	Gerber	Thickness	Material
ThinFlex Top Coverlay	GCT2	0.038mm(1.5mil)	Surface Material
GND	G3	0.018mm(0.7mil)	Copper
		0.051mm(2.0mil)	Polyimide
POWER	G4	0.018mm(0.7mil)	Copper
ThinFlex Bottom Coverlay	GCB2	0.038mm(1.5mil)	Surface Material
Total thickness: 0.163mm(6.4mil)			



FOCUS

Project:
HORNET-1-IPG.PrjPcb

Title: ME-IPG-V1 PCB Fab. Drawing Ver: 1.5

Design byJulian Evia Date:2024-06-13

Reviewed byAlvaro Rios Date:2024-06-13

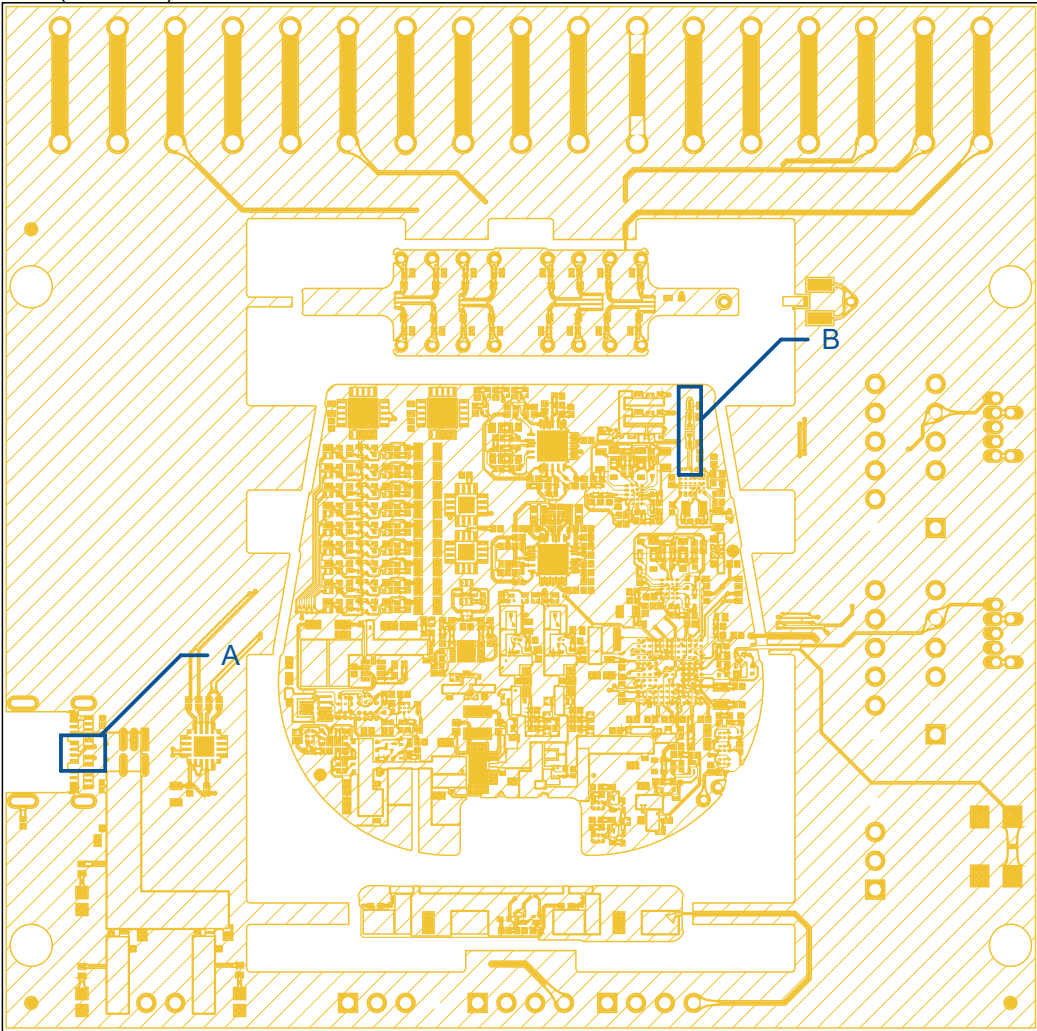
Comments:

Impedance control

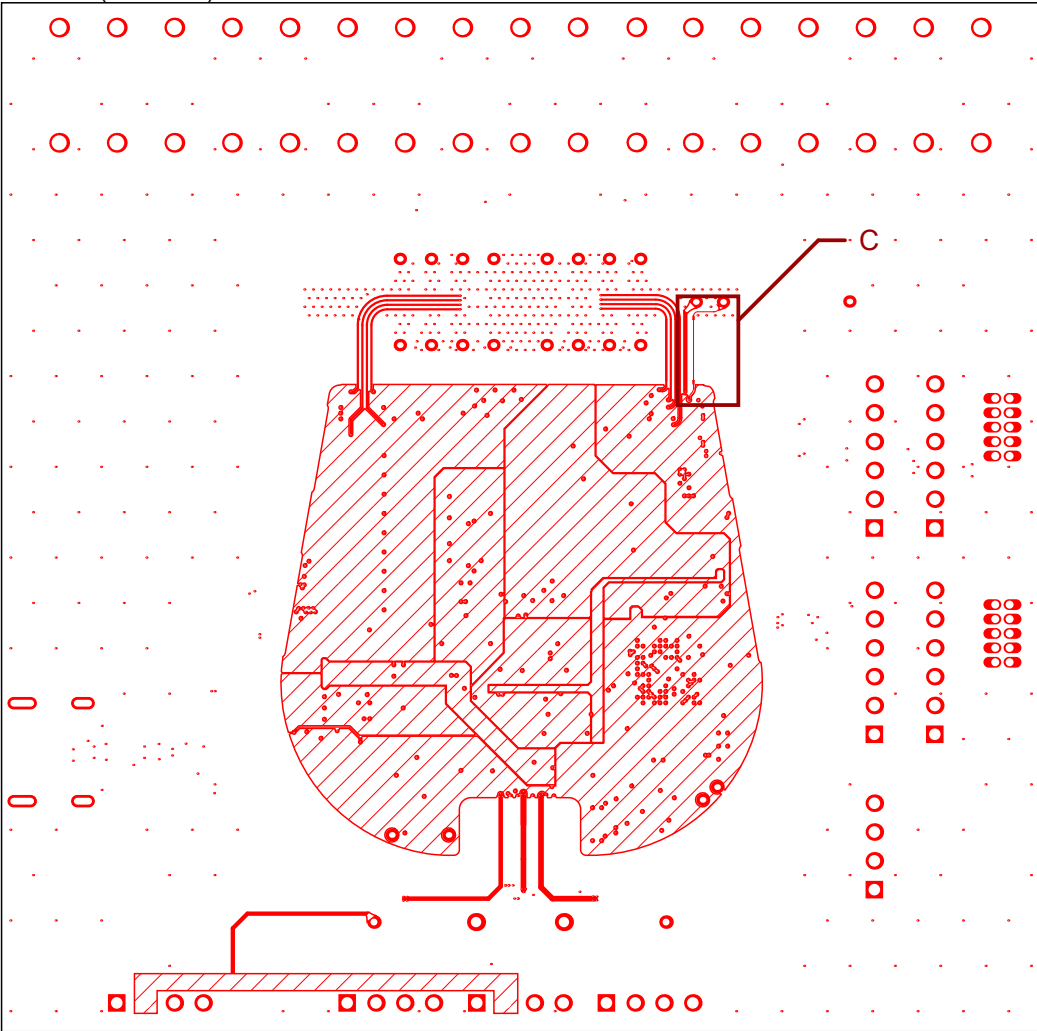
Transmission Line Structure Table

Impedance Id	Transmission Line	Target Impedance	Calculated Impedance	Trace layer	Wide Trace Width	Narrow Trace Width	Reference layers	Substack	Clearance	Target Tolerance
1	Coated Coplanar Waveguide With Ground	50	47.18	TOP	0.08mm	0.08mm	AVERT	Rigid	0.13mm	10%
2	Diff Coated Coplanar Waveguide With Ground	90	84.19	TOP	0.08mm	0.08mm	AVERT	Rigid	0.10mm	10%
3	Offset Stripline	50	42.53	POWER	0.07mm	0.07mm	GND,DVERT	Rigid	0.13mm	10%
4	Coated Microstrip	50	45.58	POWER	0.09mm	0.09mm	GND	ThinFlex	0.13mm	10%
5	Diff Coated Coplanar Waveguide With Ground	90	84.19	BOT	0.08mm	0.08mm	DHOR	Rigid	0.10mm	10%

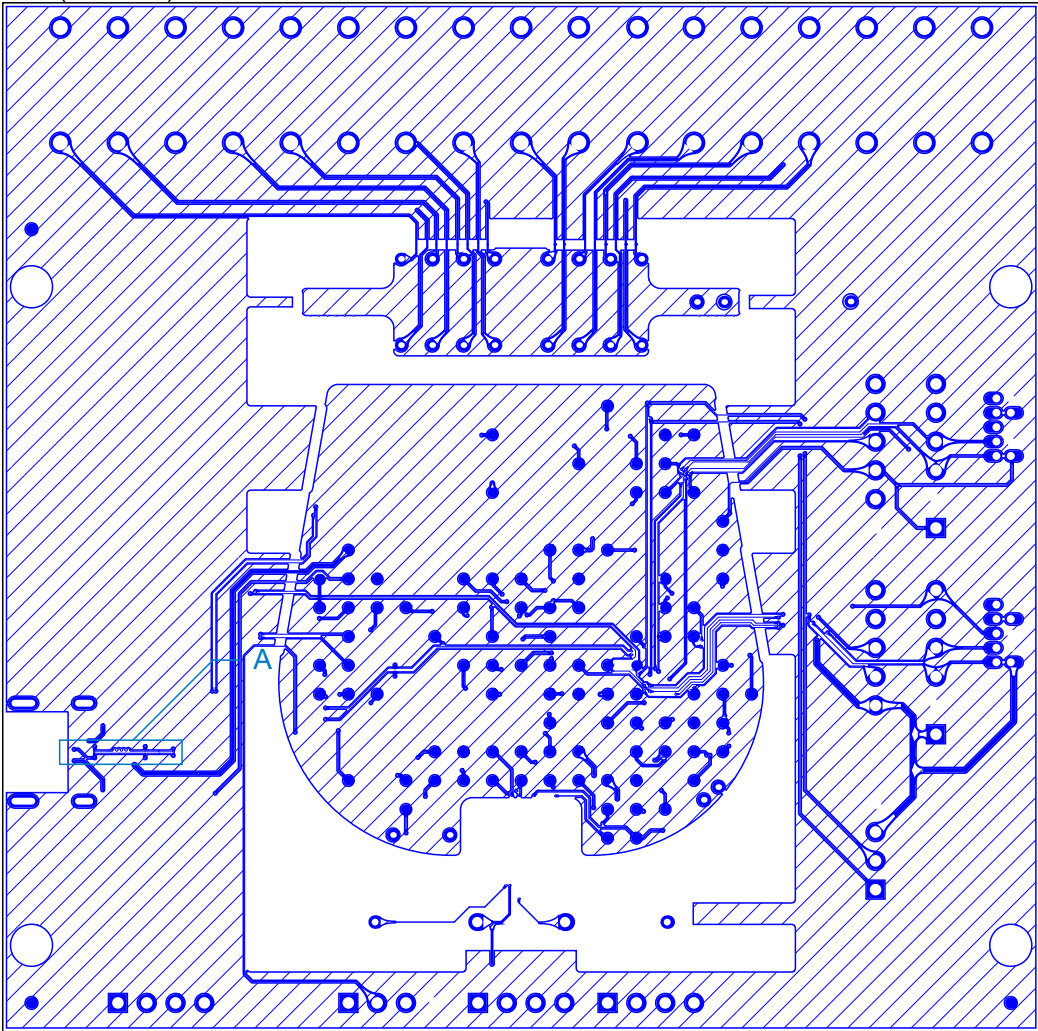
TOP (Scale 3:2)



POWER (Scale 3:2)



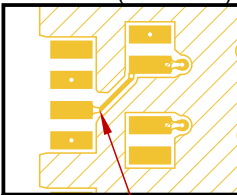
BOT (Scale 3:2)



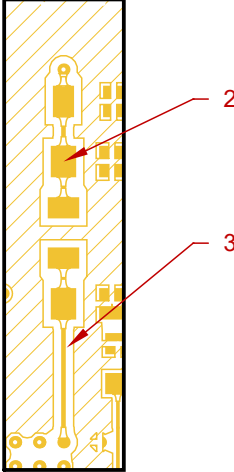
Controlled impedance nets for the Break Away

Net name	Impdance Id	Detail Reference	Note number
USB_P	2, 5	A, D	1, 6
USB_N	5	D	5
NetC200_2	1	C	3
ANT+	1, 3, 4	B	2, 4

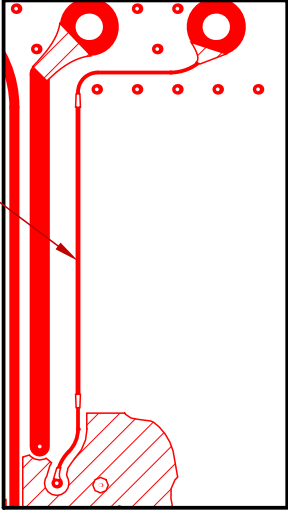
DETAIL A (Scale 8:1)



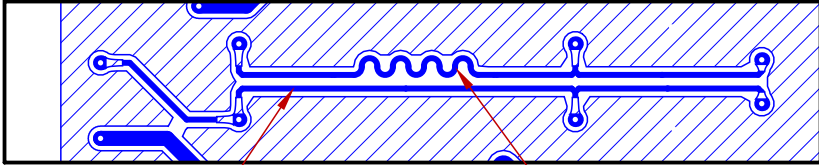
DETAIL B (Scale 8:1)

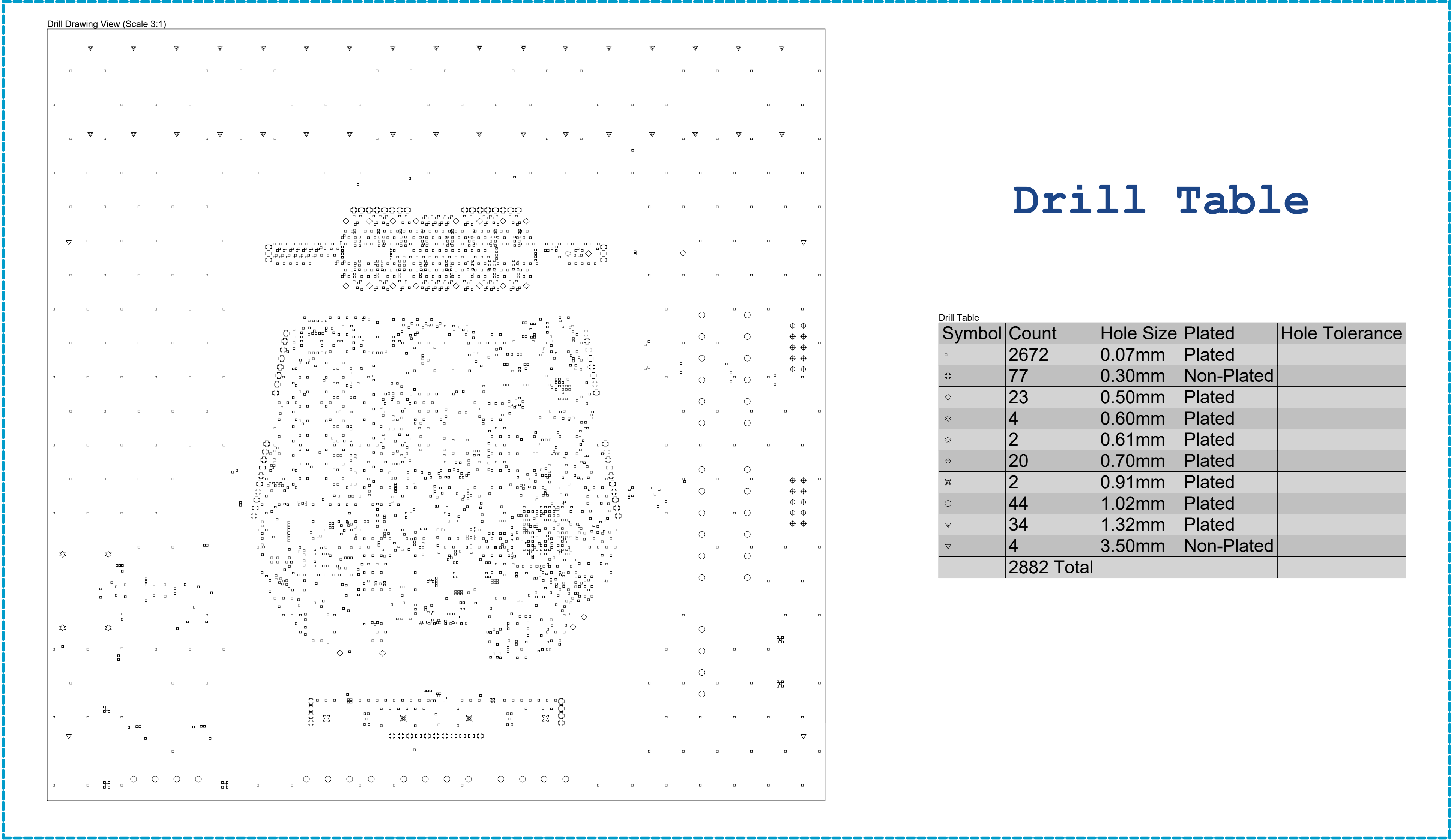


DETAIL C (Scale 7:1)



DETAIL A (Scale 10:1)





Drill Table

Drill Table				
Symbol	Count	Hole Size	Plated	Hole Tolerance
◻	2672	0.07mm	Plated	
⊗	77	0.30mm	Non-Plated	
◇	23	0.50mm	Plated	
✱	4	0.60mm	Plated	
⊗	2	0.61mm	Plated	
⊕	20	0.70mm	Plated	
✱	2	0.91mm	Plated	
○	44	1.02mm	Plated	
▽	34	1.32mm	Plated	
▽	4	3.50mm	Non-Plated	
2882 Total				

8 7 6 5 4 3 2 1

D

C

B

A

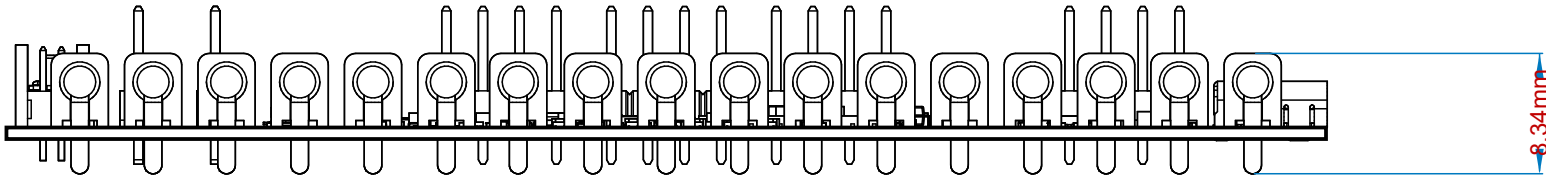
8 7 6 5 4 3 2 1

Dimmensions

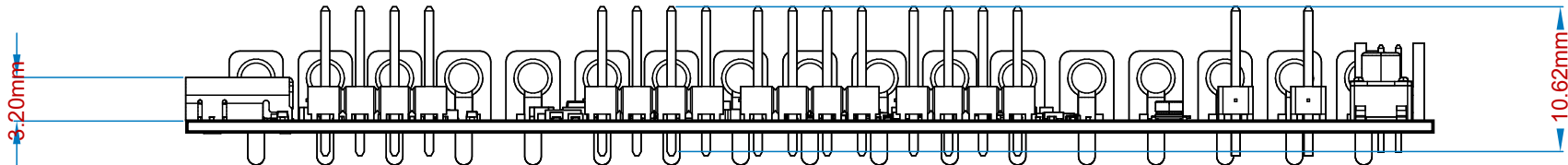
The drawing is a top-down view of a PCB layout, labeled 'View from Top side (Scale 3:1)'. It features a central area with a semi-circular cutout, surrounded by various components and connectors. Dimensions are indicated by blue lines and red text. Key dimensions include a total width of 91.44mm and a total height of 90.73mm. Specific component dimensions and spacings are also noted, such as 13.36mm, 47.70mm, 13.35mm, 6.40mm, 7.37mm, 8.56mm, 15.85mm, 0.00mm, 4.01mm, 21.25mm, 1.55mm, 6.21mm, 18.66mm, 29.41mm, 47.70mm, 18.67mm, 65.78mm, and Ø3.50mm. Components are labeled with identifiers like J1018, J1026, J1022, J1030, J1024, J1028, J1032, J1020, J1019, J1023, J1027, J1031, J1021, J1029, J1025, J1033, J1017, X4, X7, X9, X6, X5, U1301, U1302, U803, U801, U700, U701, U703, U501, U502, U901, U902, U903, U904, U905, U906, U907, U908, U909, U910, U911, U912, U913, U914, U915, U916, U917, U918, U919, U920, U921, U922, U923, U924, U925, U926, U927, U928, U929, U930, U931, U932, U933, U934, U935, U936, U937, U938, U939, U940, U941, U942, U943, U944, U945, U946, U947, U948, U949, U950, U951, U952, U953, U954, U955, U956, U957, U958, U959, U960, U961, U962, U963, U964, U965, U966, U967, U968, U969, U970, U971, U972, U973, U974, U975, U976, U977, U978, U979, U980, U981, U982, U983, U984, U985, U986, U987, U988, U989, U990, U991, U992, U993, U994, U995, U996, U997, U998, U999, U1000, U1001, U1002, U1003, U1004, U1005, U1006, U1007, U1008, U1009, U1010, U1011, U1012, U1013, U1014, U1015, U1016, U1017, U1018, U1019, U1020, U1021, U1022, U1023, U1024, U1025, U1026, U1027, U1028, U1029, U1030, U1031, U1032, U1033, U1034, U1035, U1036, U1037, U1038, U1039, U1040, U1041, U1042, U1043, U1044, U1045, U1046, U1047, U1048, U1049, U1050, U1051, U1052, U1053, U1054, U1055, U1056, U1057, U1058, U1059, U1060, U1061, U1062, U1063, U1064, U1065, U1066, U1067, U1068, U1069, U1070, U1071, U1072, U1073, U1074, U1075, U1076, U1077, U1078, U1079, U1080, U1081, U1082, U1083, U1084, U1085, U1086, U1087, U1088, U1089, U1090, U1091, U1092, U1093, U1094, U1095, U1096, U1097, U1098, U1099, U1100, U1101, U1102, U1103, U1104, U1105, U1106, U1107, U1108, U1109, U1110, U1111, U1112, U1113, U1114, U1115, U1116, U1117, U1118, U1119, U1120, U1121, U1122, U1123, U1124, U1125, U1126, U1127, U1128, U1129, U1130, U1131, U1132, U1133, U1134, U1135, U1136, U1137, U1138, U1139, U1140, U1141, U1142, U1143, U1144, U1145, U1146, U1147, U1148, U1149, U1150, U1151, U1152, U1153, U1154, U1155, U1156, U1157, U1158, U1159, U1160, U1161, U1162, U1163, U1164, U1165, U1166, U1167, U1168, U1169, U1170, U1171, U1172, U1173, U1174, U1175, U1176, U1177, U1178, U1179, U1180, U1181, U1182, U1183, U1184, U1185, U1186, U1187, U1188, U1189, U1190, U1191, U1192, U1193, U1194, U1195, U1196, U1197, U1198, U1199, U1200, U1201, U1202, U1203, U1204, U1205, U1206, U1207, U1208, U1209, U1210, U1211, U1212, U1213, U1214, U1215, U1216, U1217, U1218, U1219, U1220, U1221, U1222, U1223, U1224, U1225, U1226, U1227, U1228, U1229, U1230, U1231, U1232, U1233, U1234, U1235, U1236, U1237, U1238, U1239, U1240, U1241, U1242, U1243, U1244, U1245, U1246, U1247, U1248, U1249, U1250, U1251, U1252, U1253, U1254, U1255, U1256, U1257, U1258, U1259, U1260, U1261, U1262, U1263, U1264, U1265, U1266, U1267, U1268, U1269, U1270, U1271, U1272, U1273, U1274, U1275, U1276, U1277, U1278, U1279, U1280, U1281, U1282, U1283, U1284, U1285, U1286, U1287, U1288, U1289, U1290, U1291, U1292, U1293, U1294, U1295, U1296, U1297, U1298, U1299, U1300, U1301, U1302, U1303, U1304, U1305, U1306, U1307, U1308, U1309, U1310, U1311, U1312, U1313, U1314, U1315, U1316, U1317, U1318, U1319, U1320, U1321, U1322, U1323, U1324, U1325, U1326, U1327, U1328, U1329, U1330, U1331, U1332, U1333, U1334, U1335, U1336, U1337, U1338, U1339, U1340, U1341, U1342, U1343, U1344, U1345, U1346, U1347, U1348, U1349, U1350, U1351, U1352, U1353, U1354, U1355, U1356, U1357, U1358, U1359, U1360, U1361, U1362, U1363, U1364, U1365, U1366, U1367, U1368, U1369, U1370, U1371, U1372, U1373, U1374, U1375, U1376, U1377, U1378, U1379, U1380, U1381, U1382, U1383, U1384, U1385, U1386, U1387, U1388, U1389, U1390, U1391, U1392, U1393, U1394, U1395, U1396, U1397, U1398, U1399, U1400, U1401, U1402, U1403, U1404, U1405, U1406, U1407, U1408, U1409, U1410, U1411, U1412, U1413, U1414, U1415, U1416, U1417, U1418, U1419, U1420, U1421, U1422, U1423, U1424, U1425, U1426, U1427, U1428, U1429, U1430, U1431, U1432, U1433, U1434, U1435, U1436, U1437, U1438, U1439, U1440, U1441, U1442, U1443, U1444, U1445, U1446, U1447, U1448, U1449, U1450, U1451, U1452, U1453, U1454, U1455, U1456, U1457, U1458, U1459, U1460, U1461, U1462, U1463, U1464, U1465, U1466, U1467, U1468, U1469, U1470, U1471, U1472, U1473, U1474, U1475, U1476, U1477, U1478, U1479, U1480, U1481, U1482, U1483, U1484, U1485, U1486, U1487, U1488, U1489, U1490, U1491, U1492, U1493, U1494, U1495, U1496, U1497, U1498, U1499, U1500, U1501, U1502, U1503, U1504, U1505, U1506, U1507, U1508, U1509, U1510, U1511, U1512, U1513, U1514,

Lateral views

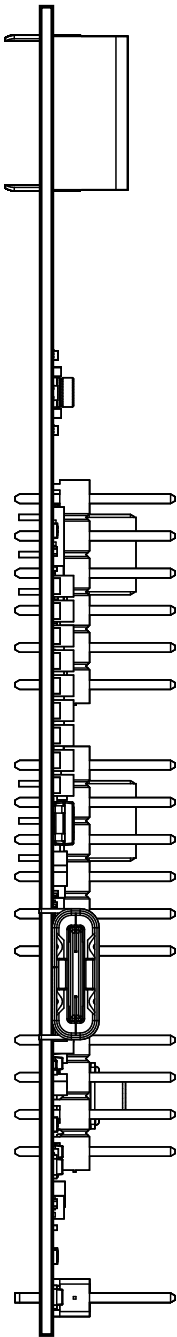
View from Back side (Scale 1.9089:1)



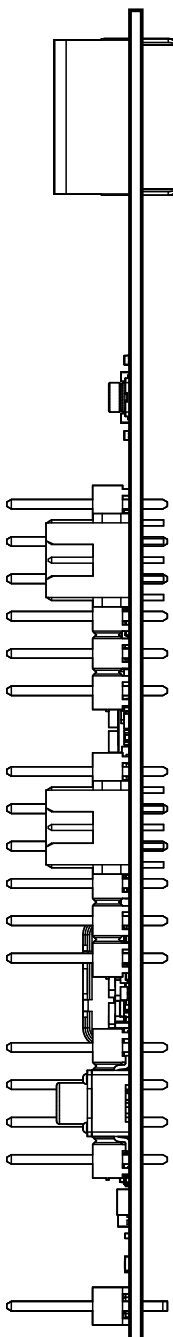
View from Front side (Scale 1.9566:1)



View from Left side (Scale 1.9364:1)

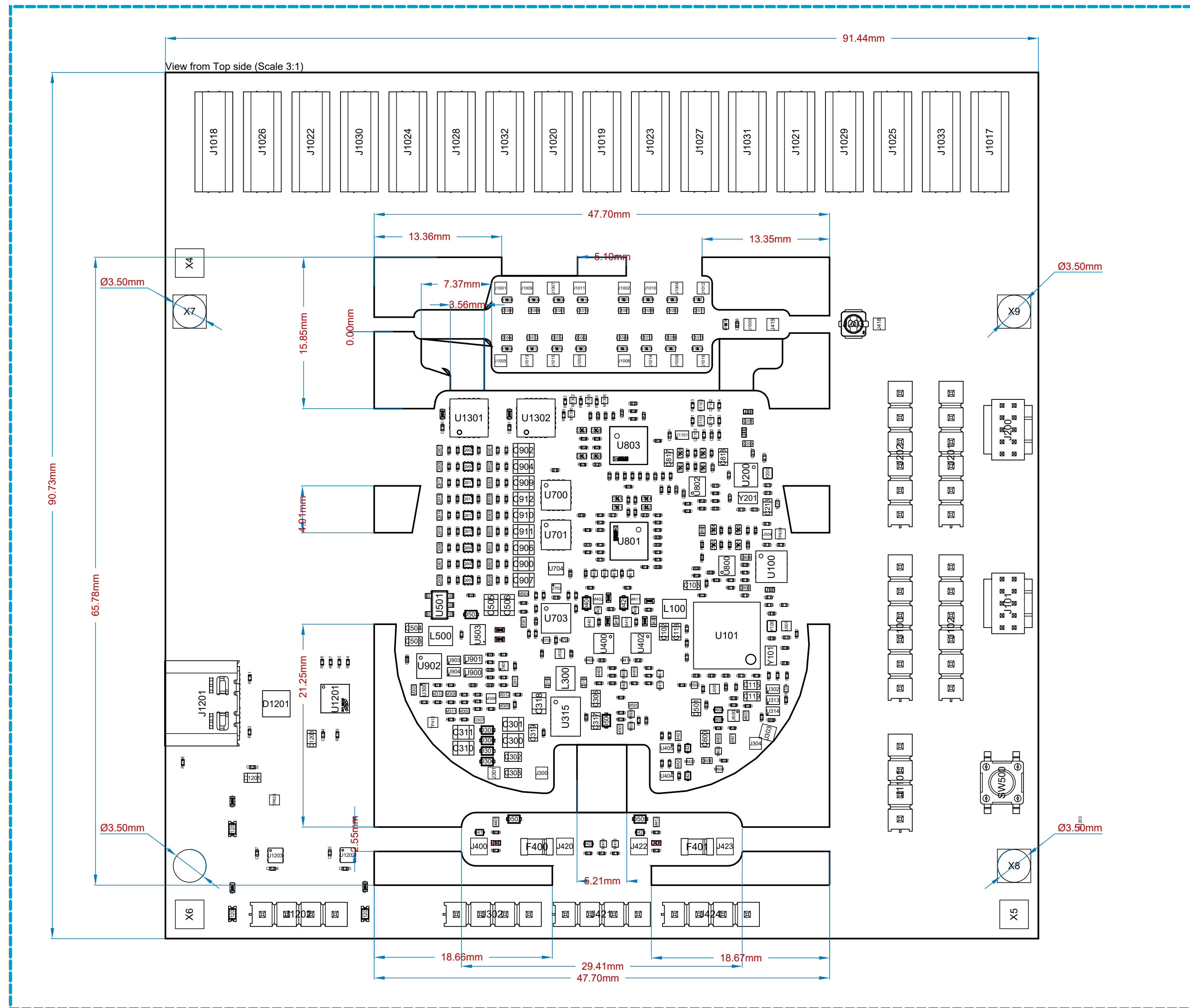


View from Right side (Scale 1.9435:1)

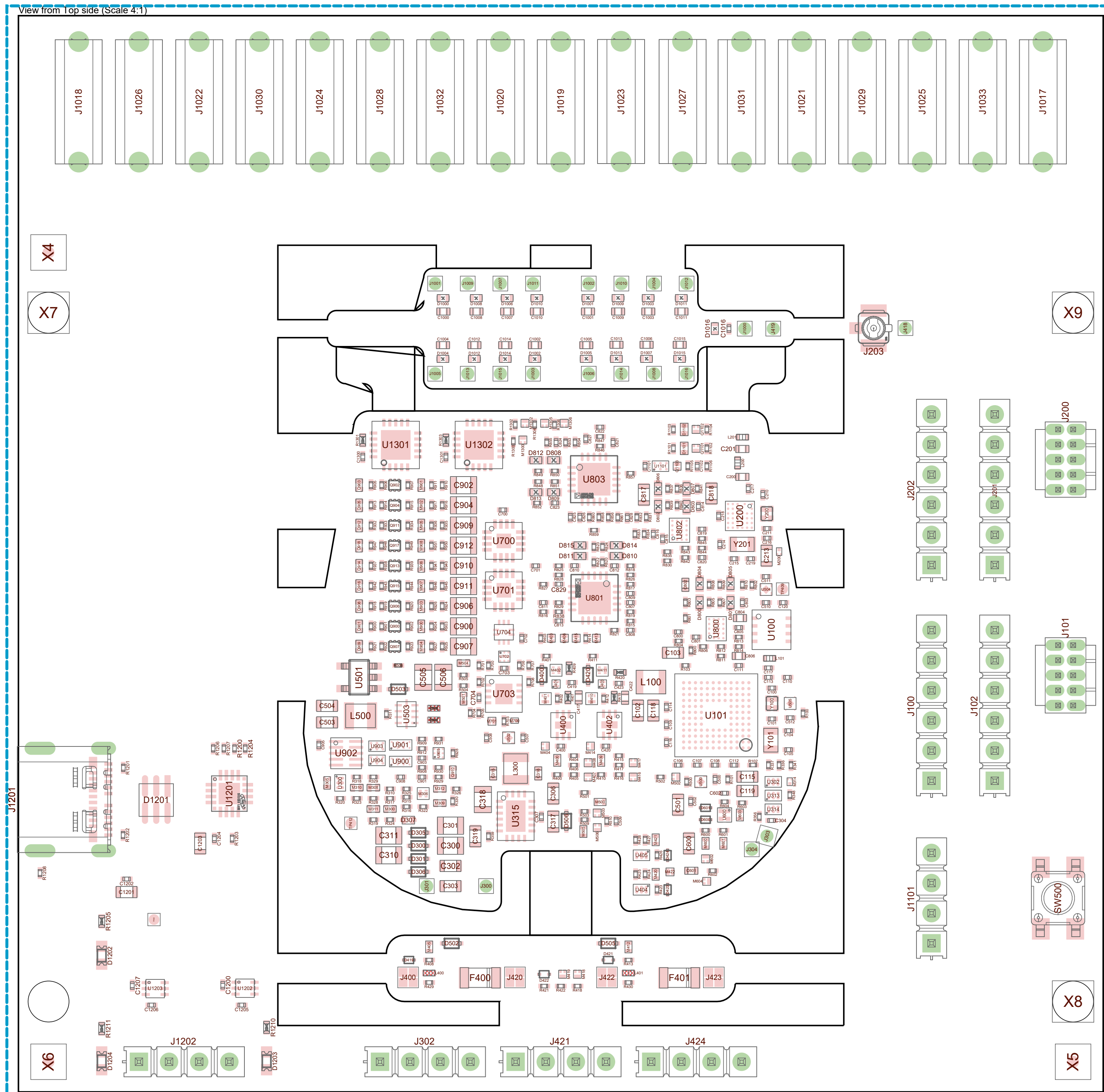


	Project: HORNET-1-IPG.PrjPcb	
	Title: HORNET-1 PCB Assy. Drawing	Ver: 1.5
	Design by Julian Evia	Date: 2024-06-13
	Reviewed by Alvaro Rios	Date: 2024-06-13
Comments:		

Dimmensions



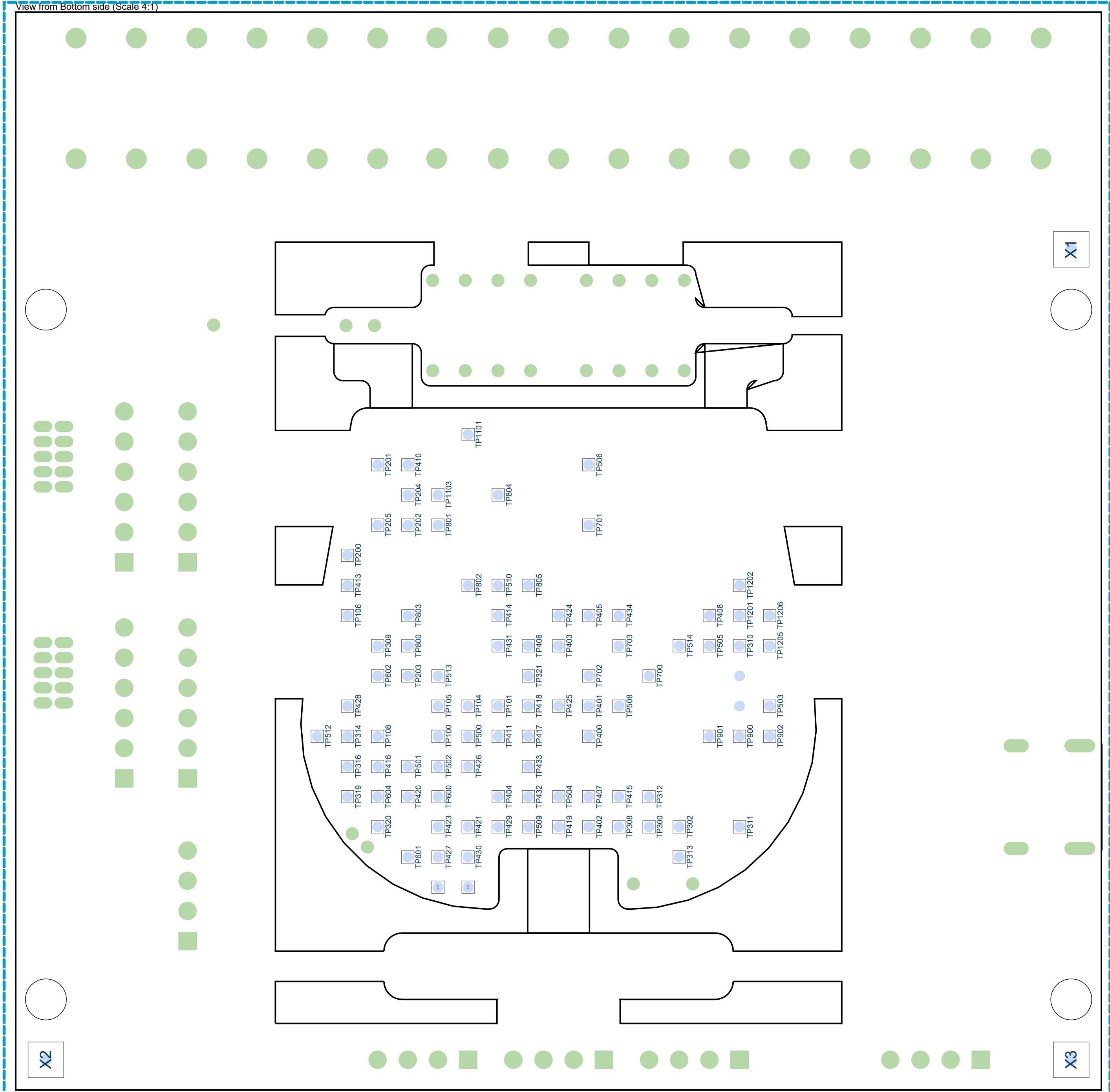
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Title: HORNET-1 PCB Assy. Drawing		Ver: 1.5	
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Comments:			



TP1203

TP1200

	Project: HORNET-1-IPG.PrjPcb	
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Title: HORNET-1 PCB Assy. Drawing		Ver: 1.5
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Reviewed by: Alvaro Rios		Date: 2024-06-13
Comments:		



Assembly Reference Bottom

 FOCUS		Project: HORNET-1-IPG.PrjPcb	
Title: HORNET-1 PCB Assy. Drawing		Ver: 1.5	
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