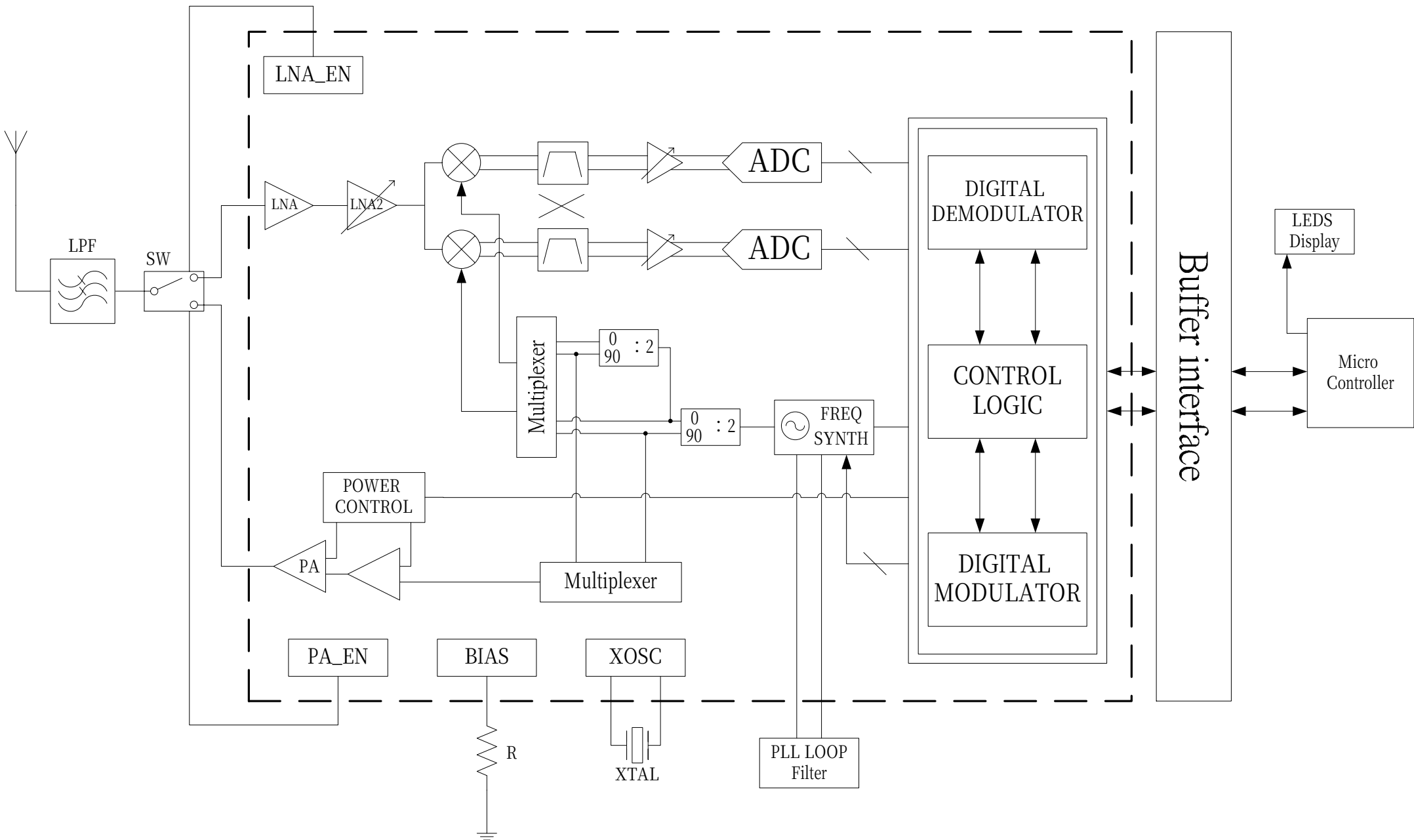
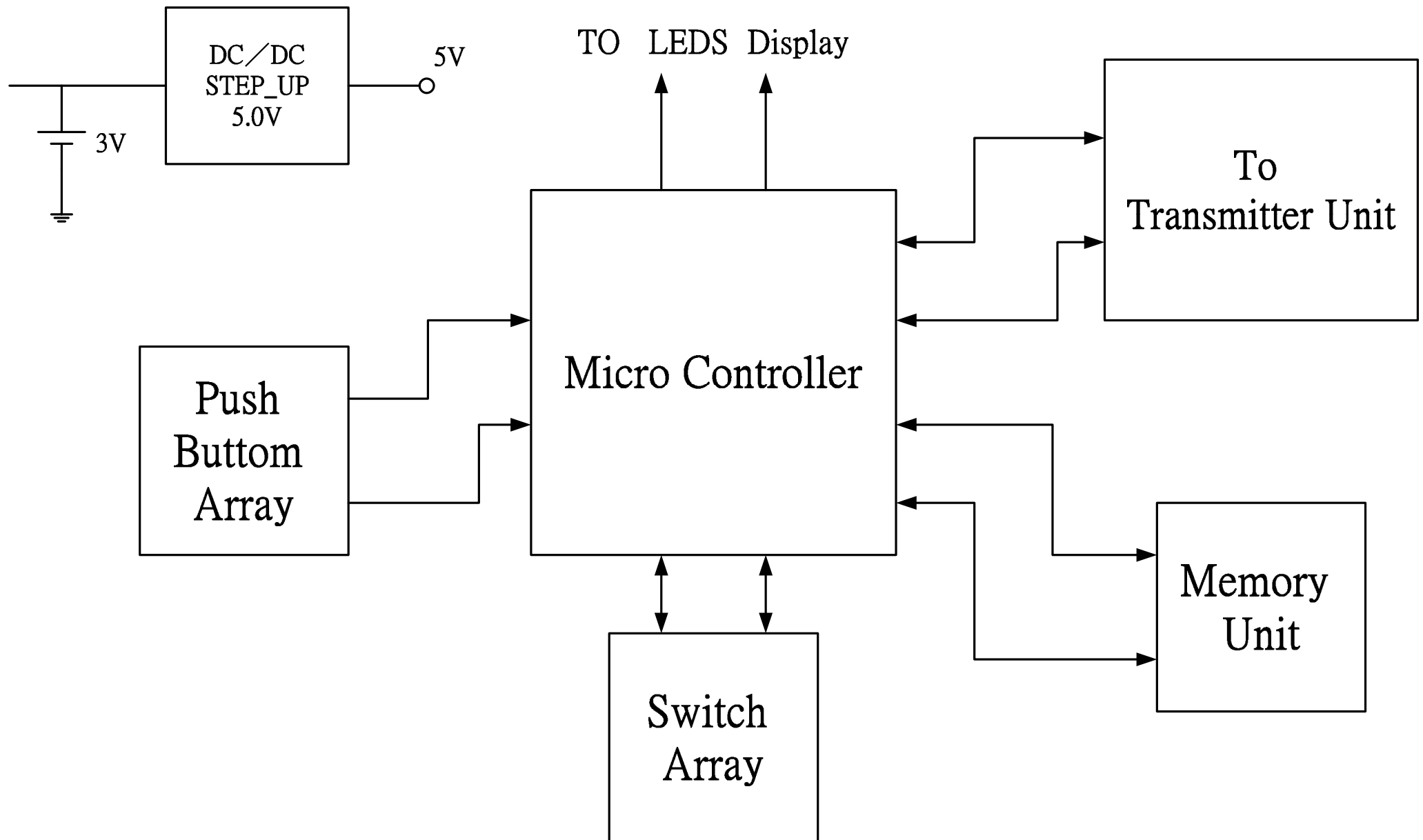




Transmitter Block Diagram

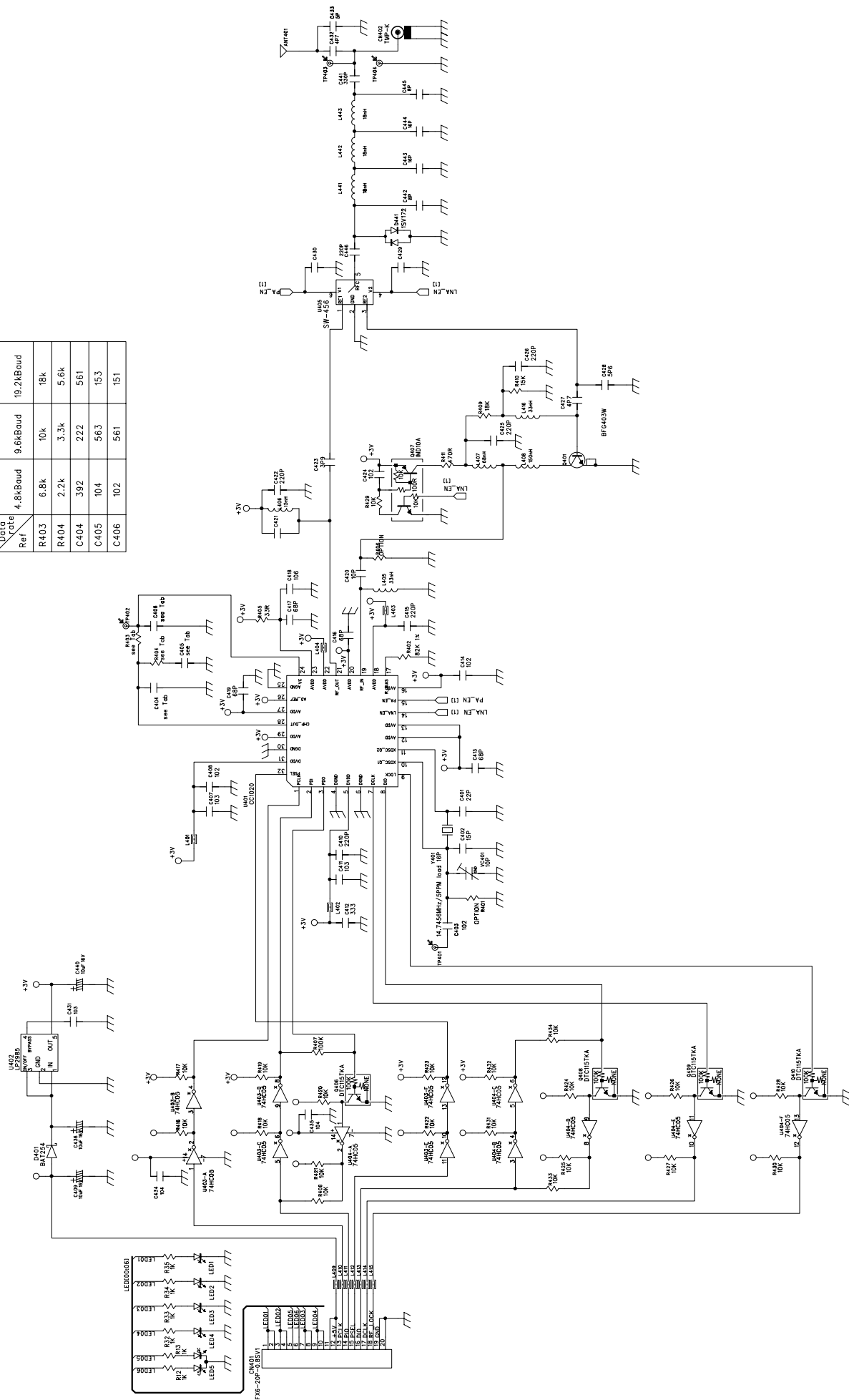


Encoder Block Diagram

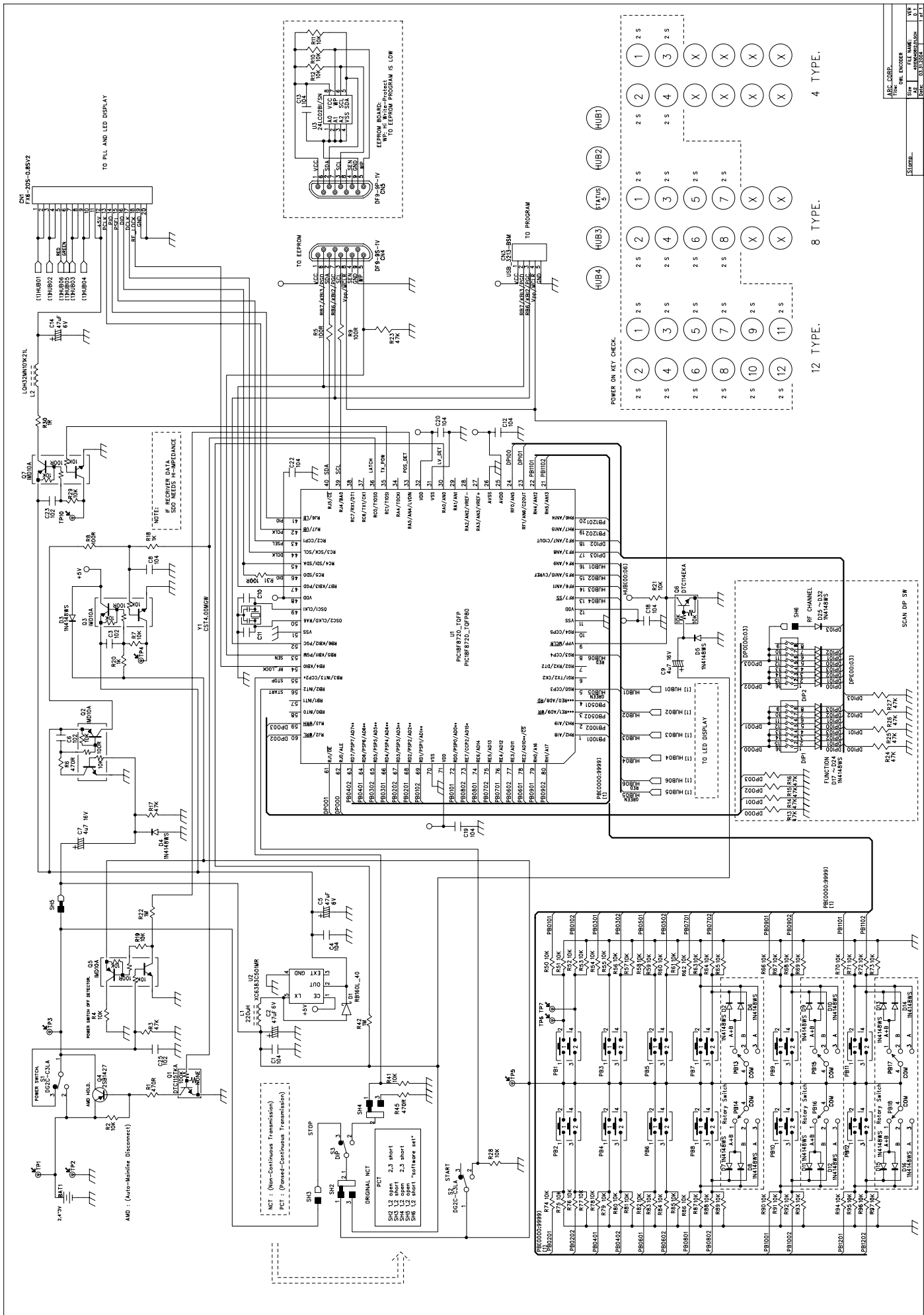
Transmitter Wiring Diagram

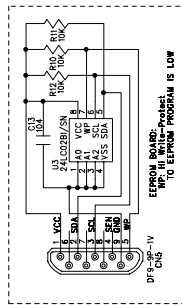
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	R403	6.8k	10k	18k
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	C404	392	222	561
	C405	104	583	153
	C406	102	561	151



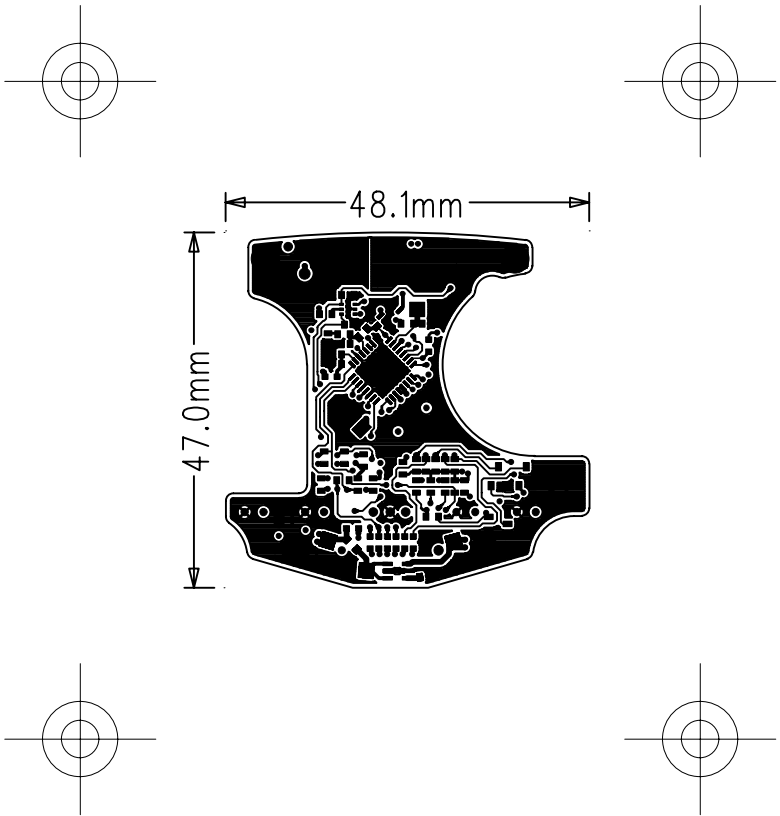
Encoder Wiring Diagram





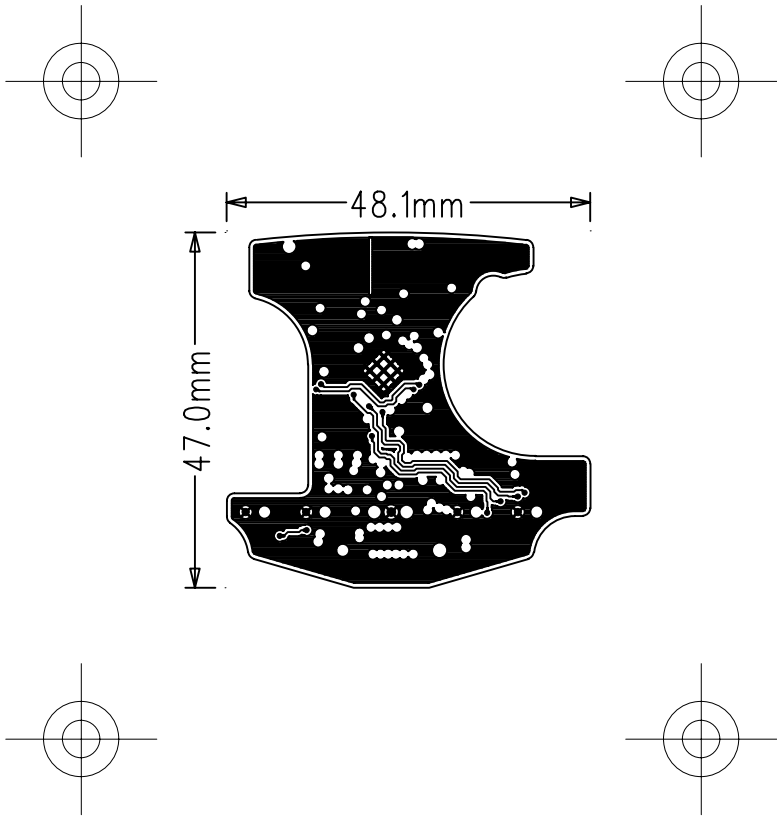
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	Date:	09-22-2003	0 1

Transmitter Top Copper



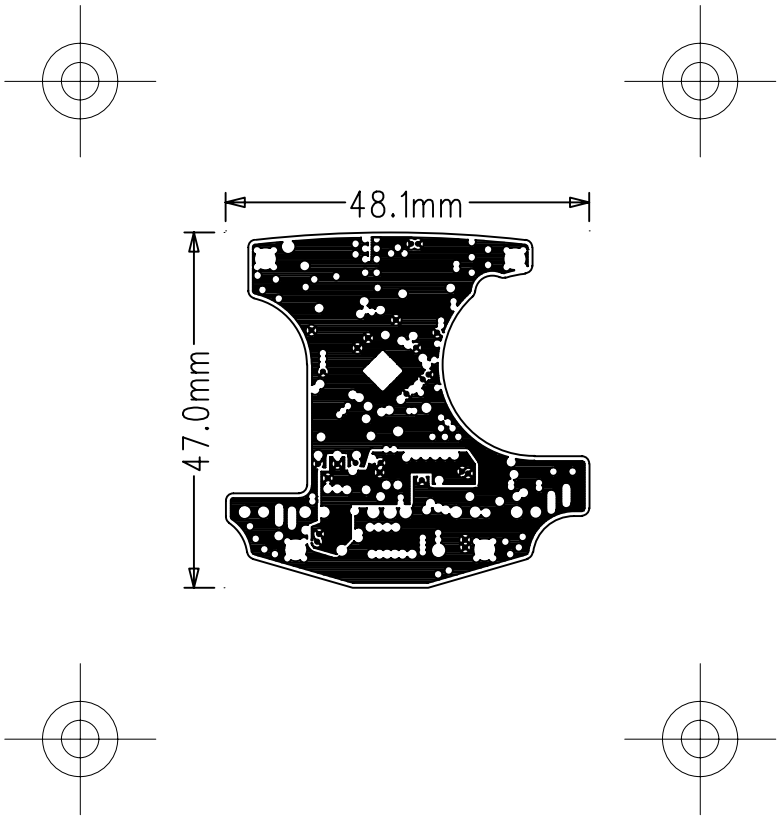
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THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401TRX433.01.01 09.30.2003			Stamp:	

Transmitter Ground plane Copper



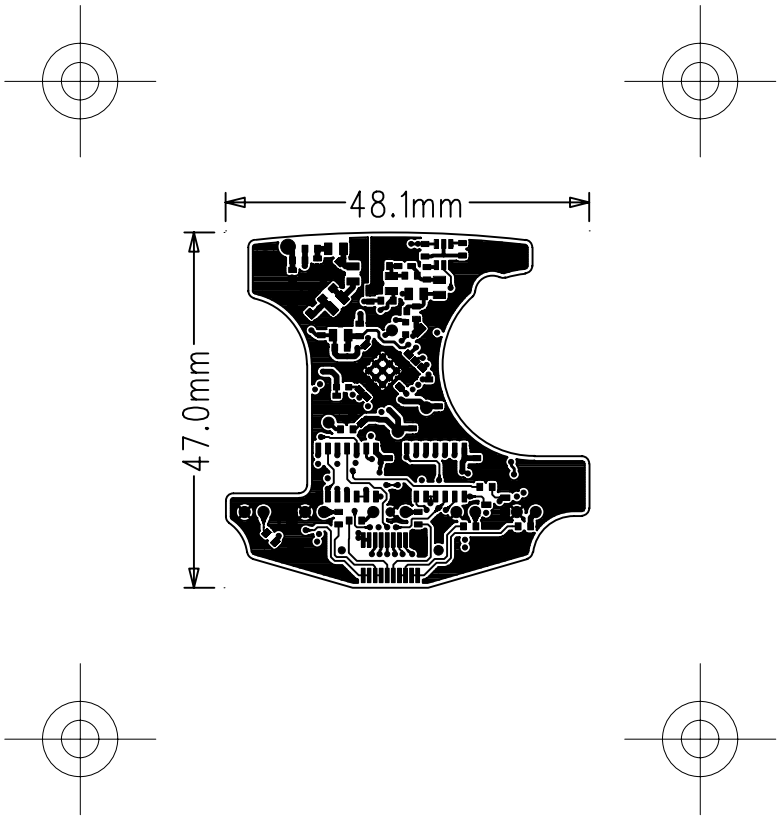
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401TRX433.01.01 09.30.2003		Stamp:	

Transmitter Power plane Copper



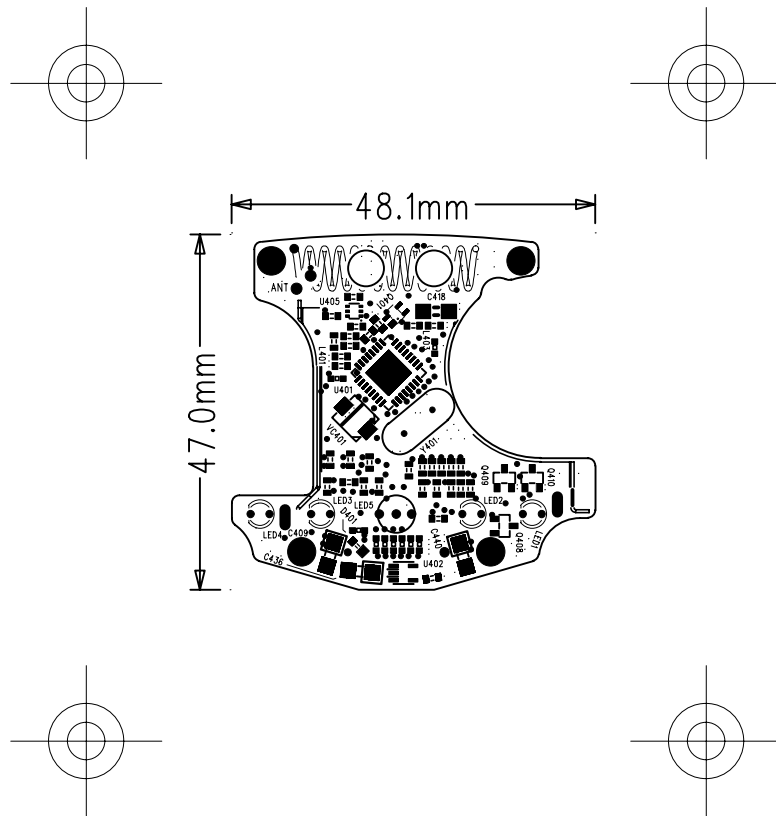
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401TRX433.01.01 09.30.2003		Stamp:		

Transmitter Bottom Copper



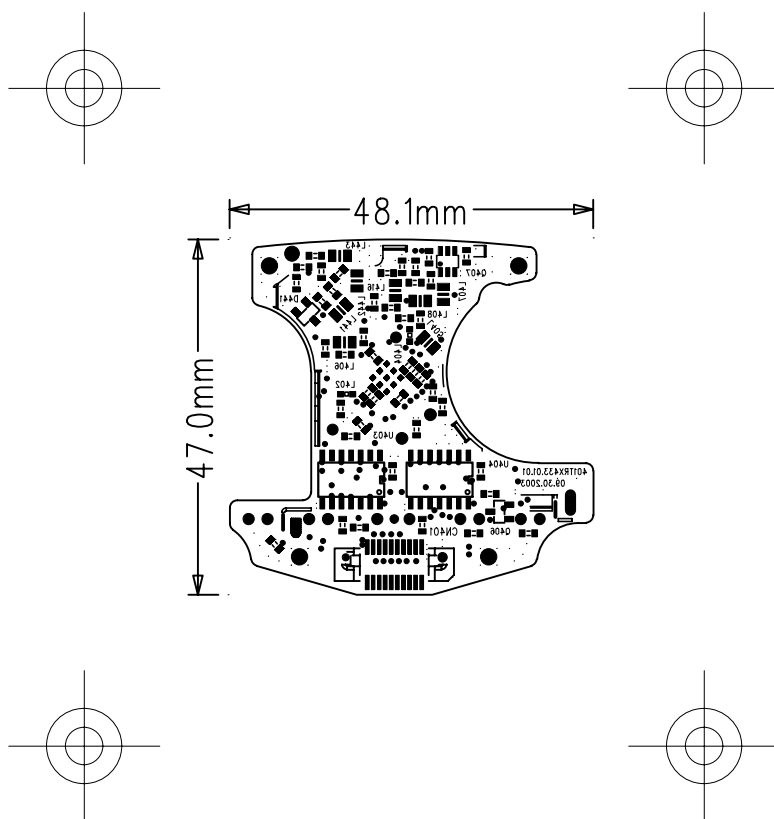
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THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401TRX433.01.01 09.30.2003		Stamp:	

Transmitter Silkscreen Top



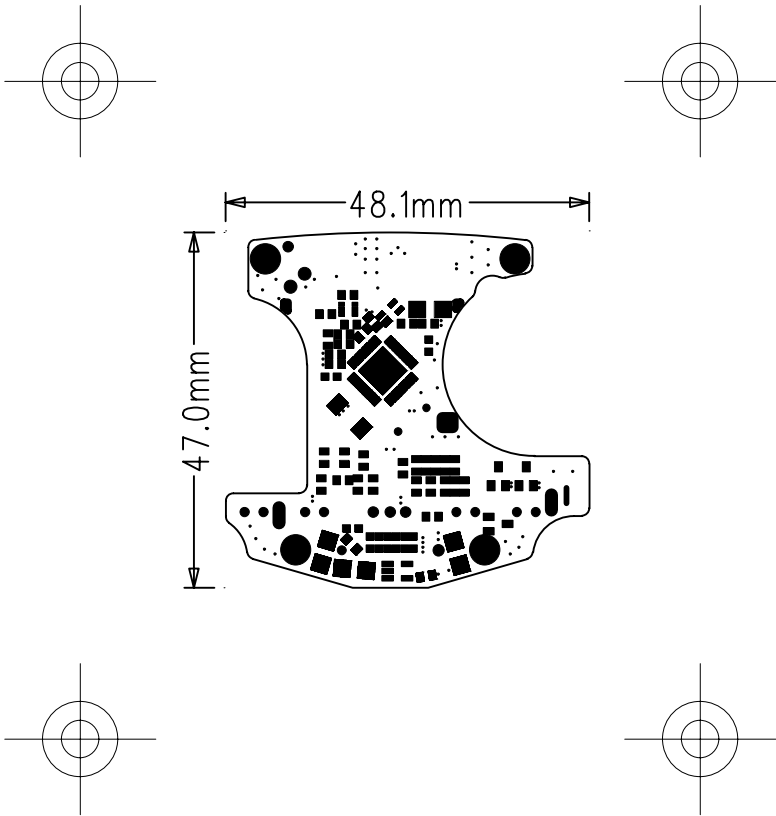
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401TRX433.01.01 09.30.2003			Stamp:	

Transmitter Silkscreen Bottom



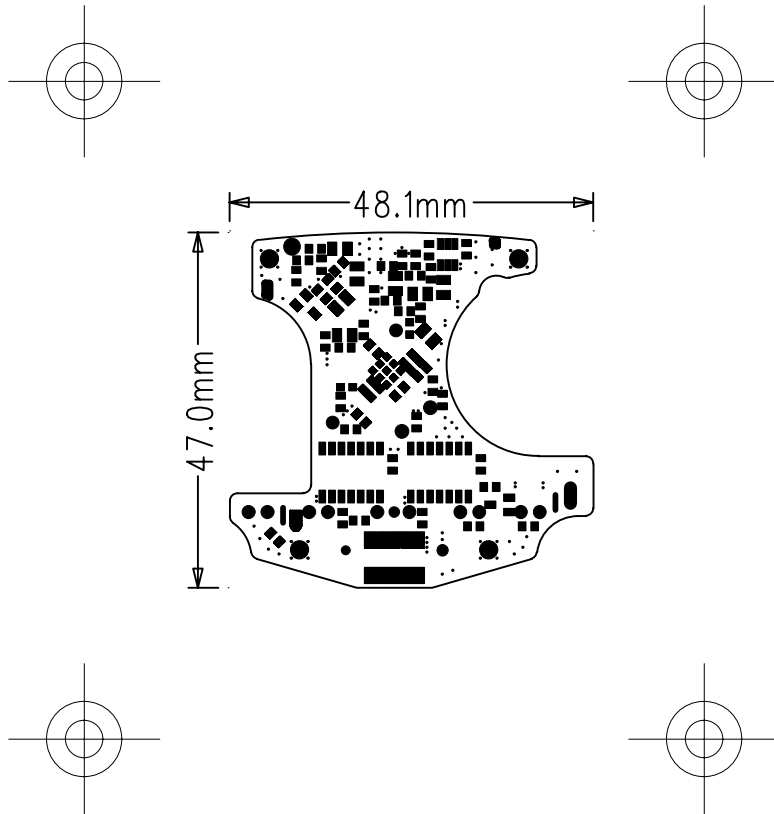
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401TRX433.01.01 09.30.2003			Stamp:	

Transmitter Solder Mask Top



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401TRX433.01.01 09.30.2003		Stamp:		

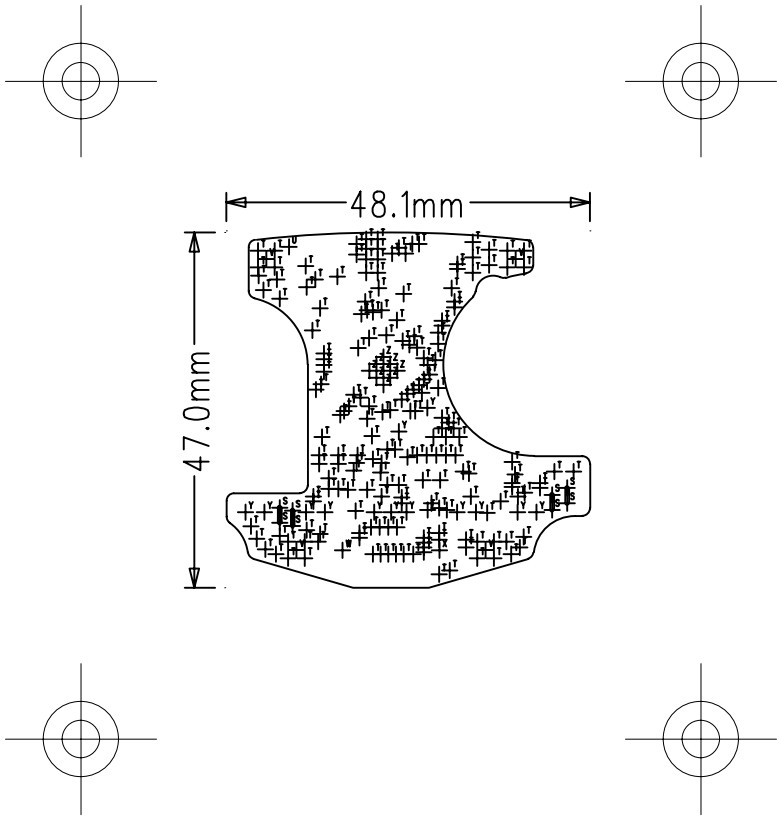
Transmitter Solder Mask Bottom



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES		☐ NO	
NOTE: 401TRX433.01.01 09.30.2003			Stamp:	

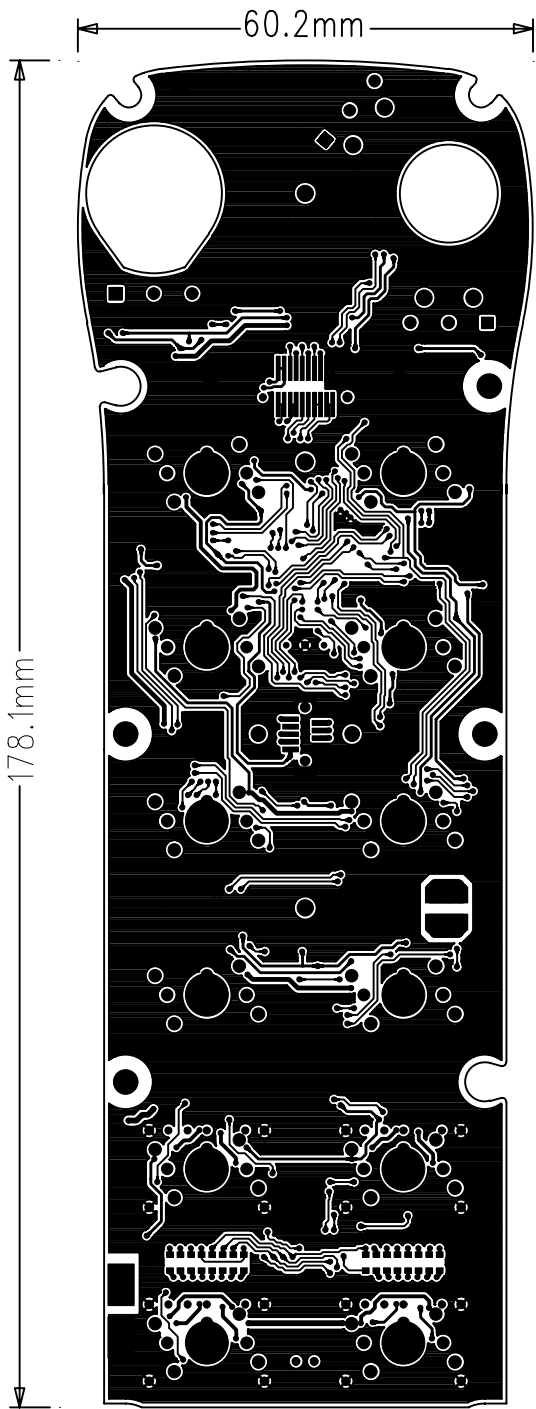
Transmitter Drill Drawing

SIZE	QTY	SYM	PLTD
19.69	8	S	NPLTD
11.81	193	T	PLTD
39.37	1	U	PLTD
86.61	4	V	NPLTD
39.37	1	W	NPLTD
51.18	1	X	NPLTD
31.5	13	Y	PLTD
19.69	9	Z	PLTD
19.69 x 98.43	4	S	NPLTD



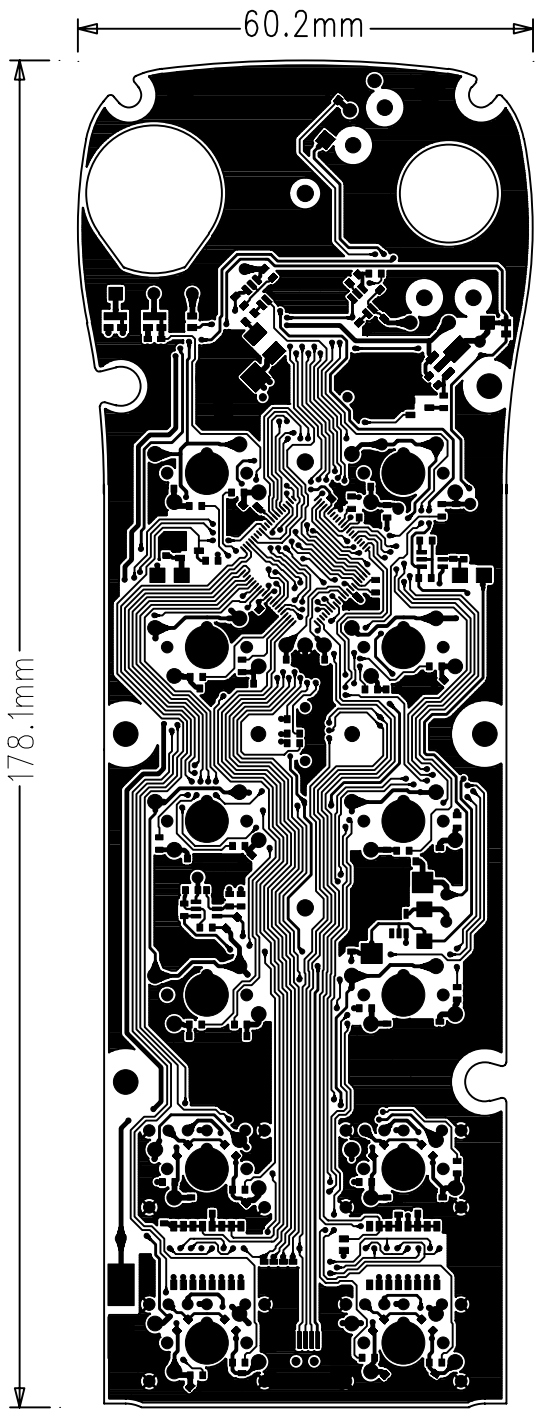
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THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401TRX433.01.01 09.30.2003			Stamp:	

Encoder Top Copper



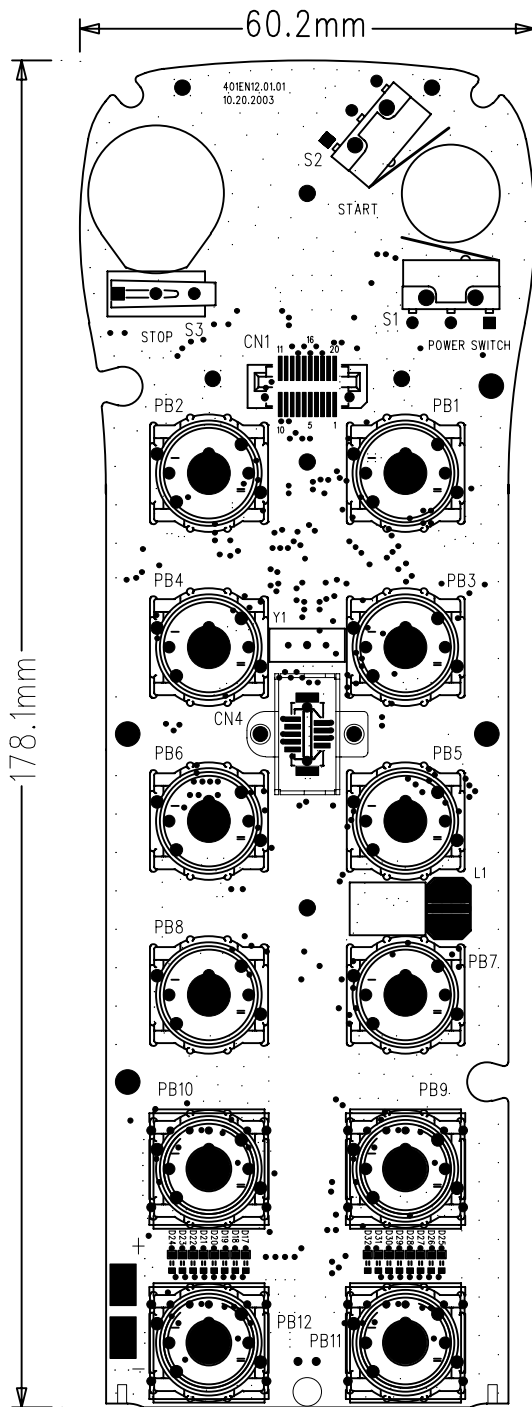
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:	

Encoder Bottom Copper



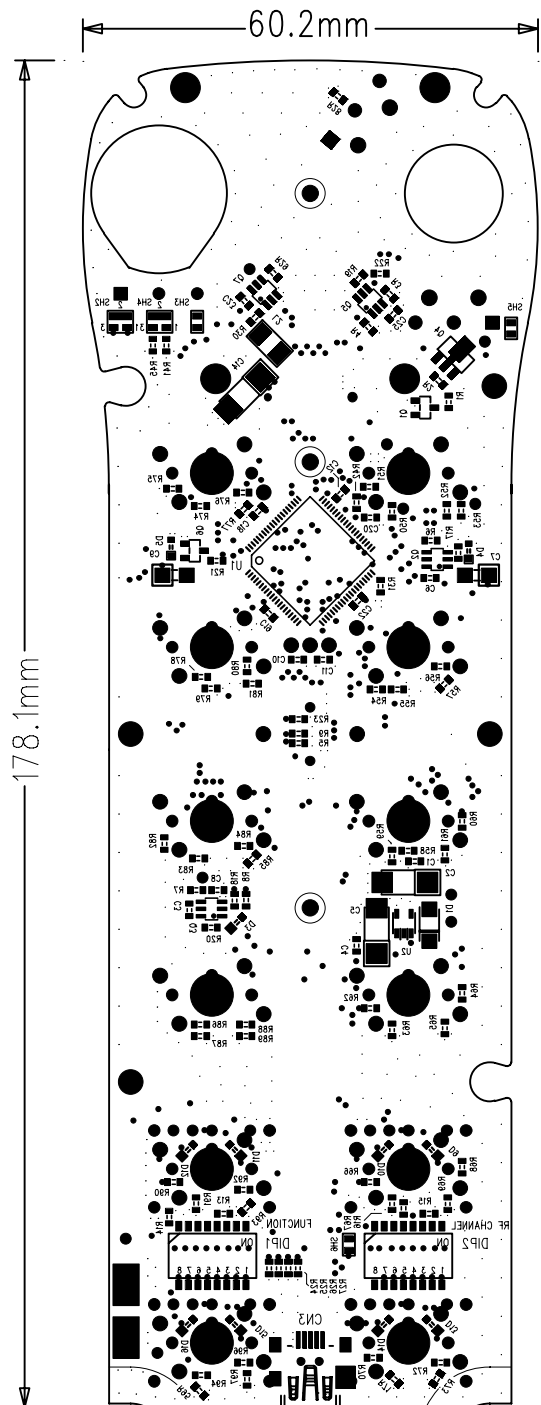
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THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:	

Encoder Silkscreen Top



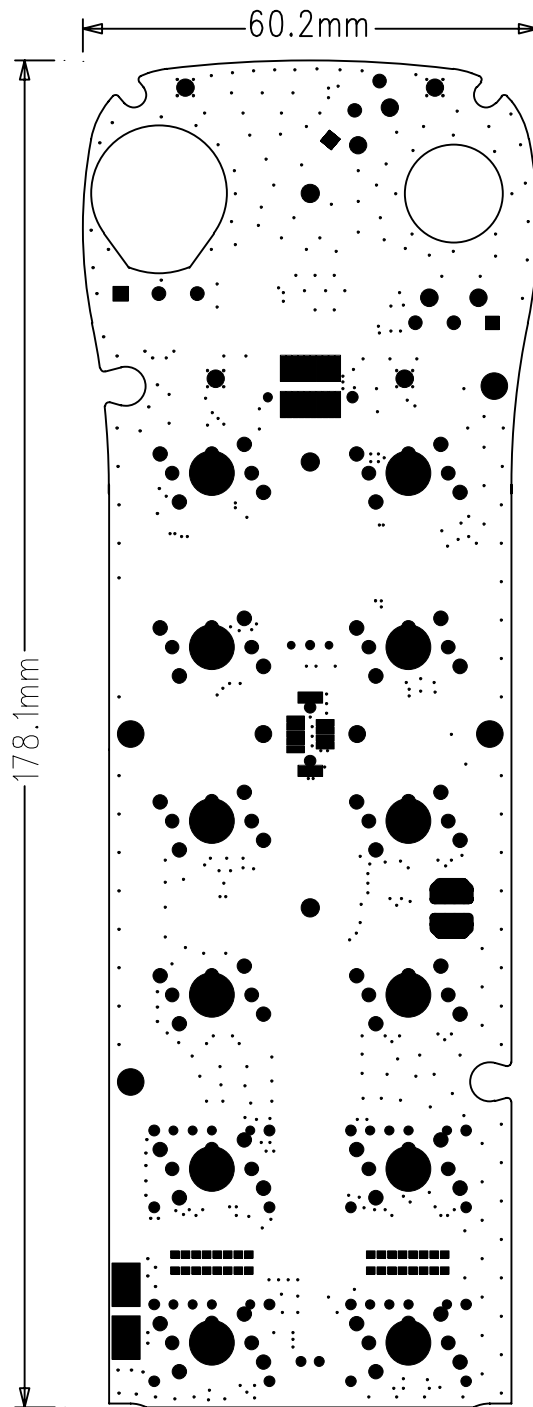
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:	

Encoder Silkscreen Bottom



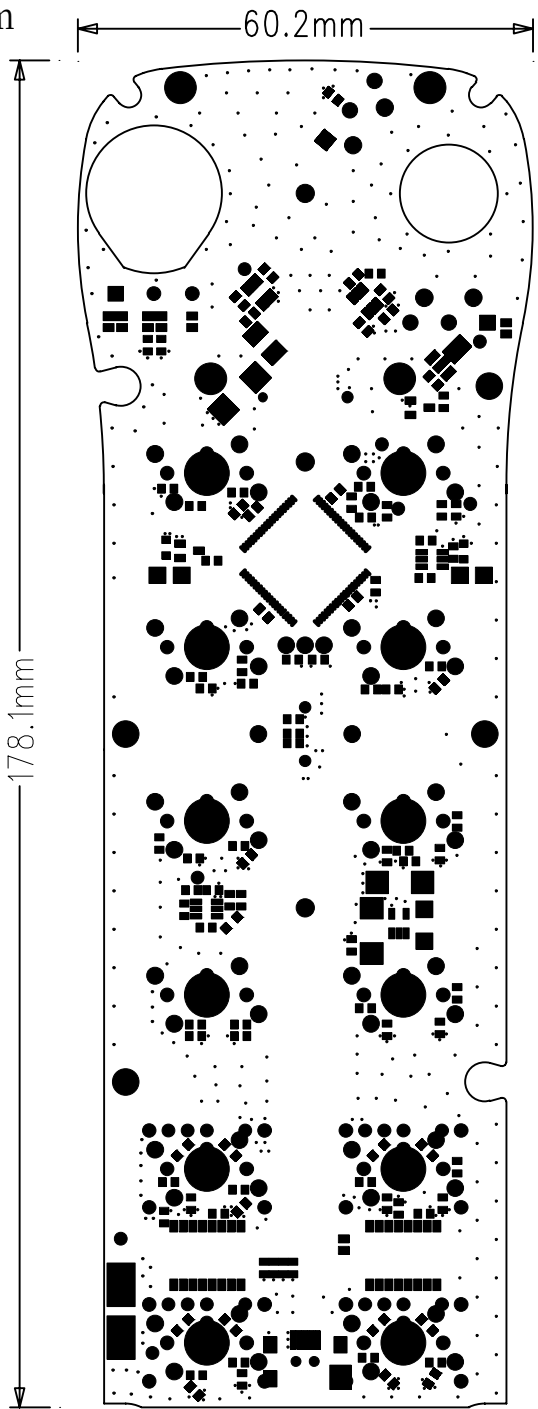
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES ☐ NO			
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:		

Encoder Solder Mask Top



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:	

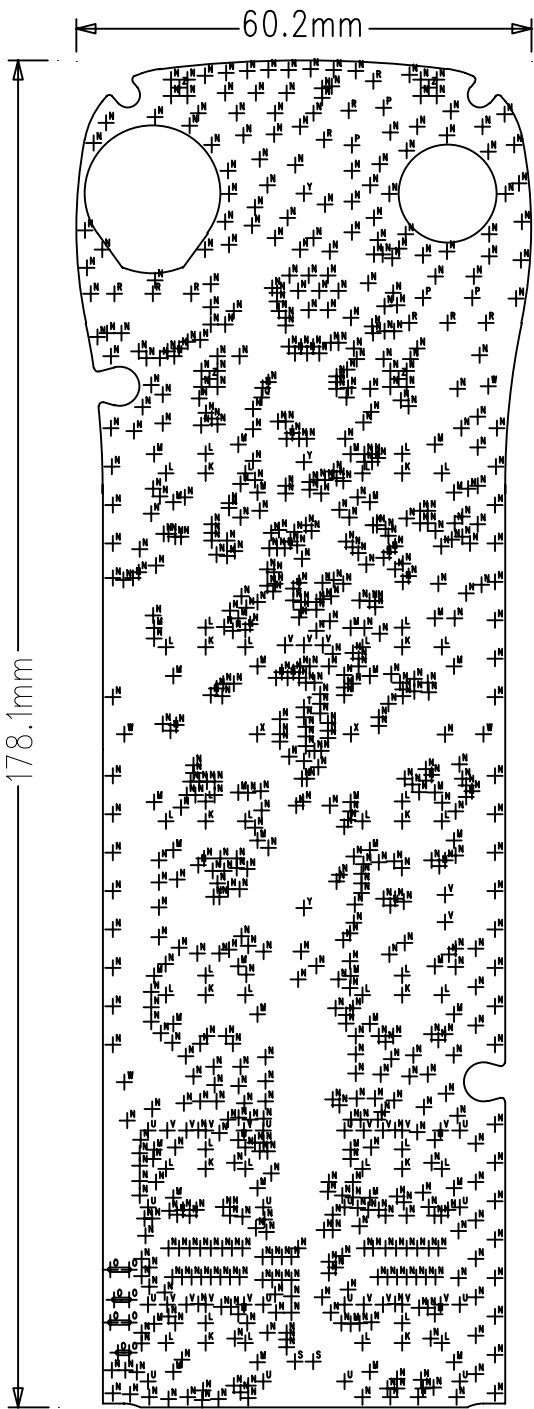
Encoder Solder Mask Bottom



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:	

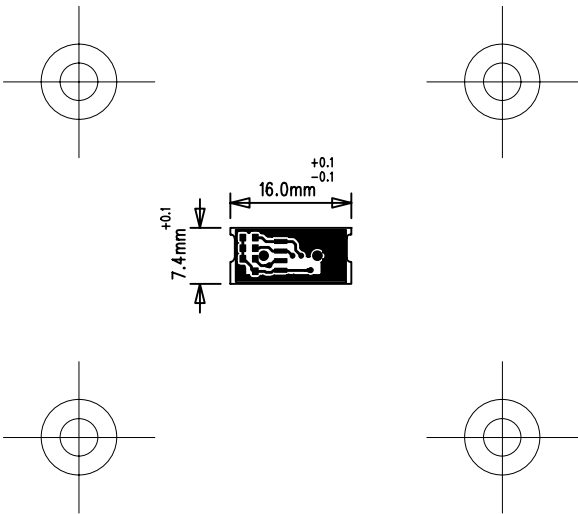
Encoder Drill Drawing

SIZE	QTY	SYM	PLTD
224.41	12	K	NPLTD
62.99	36	L	NPLTD
51.18	48	M	PLTD
11.81	734	N	PLTD
23.62	8	O	PLTD
82.68	4	P	NPLTD
39.37	1	Q	NPLTD
47.24	9	R	PLTD
43.31	2	S	NPLTD
51.18	3	T	NPLTD
39.37	16	U	PLTD
31.5	21	V	PLTD
129.92	4	W	NPLTD
78.74	2	X	NPLTD
86.61	3	Y	NPLTD
82.68	4	Z	PLTD
23.62 x 82.68	1	O	PLTD
23.62 x 102.36	1	O	PLTD
23.62 x 122.05	2	O	PLTD



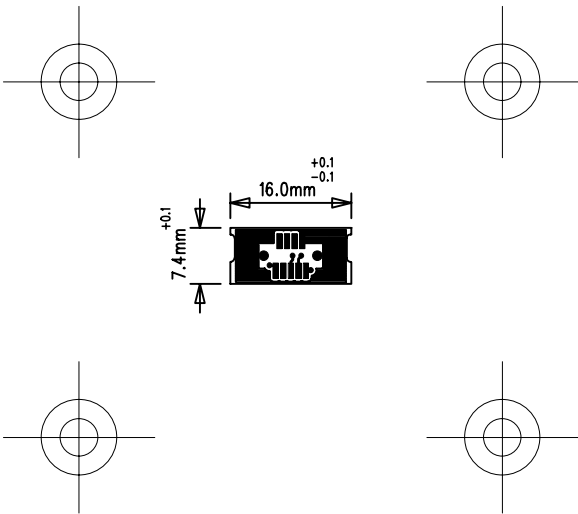
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREEN.ISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:	

I-CHIP Top Copper



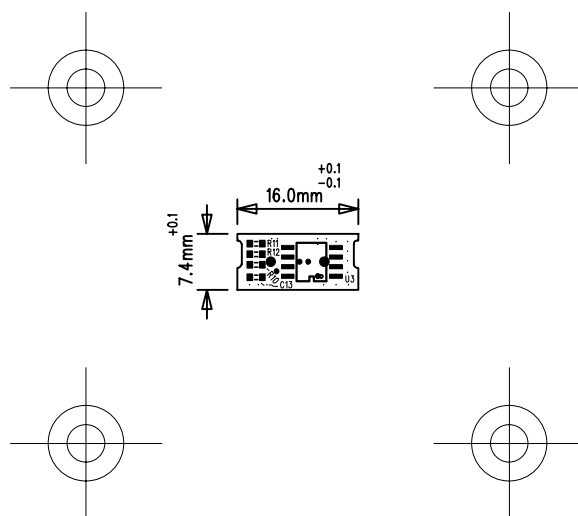
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC ☐ GOLD			
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES ☐ NO			
NOTE: 401CH.01.01.PCB 09.22.2003			Stamp:	

I-CHIP Bottom Copper



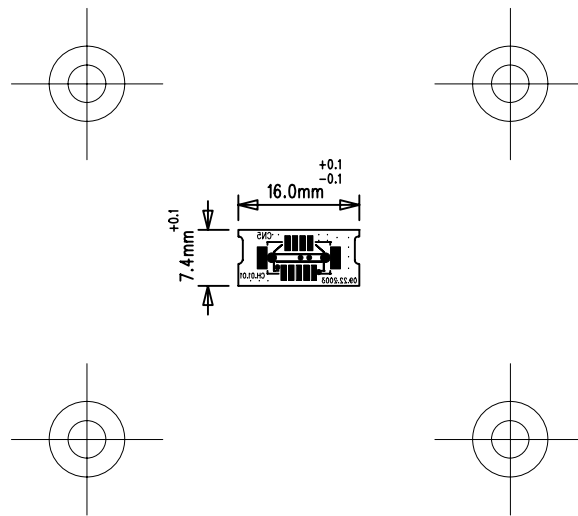
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE:		Stamp:		
401CH.01.01.PCB 09.22.2003				

I-CHIP Silkscreen Top



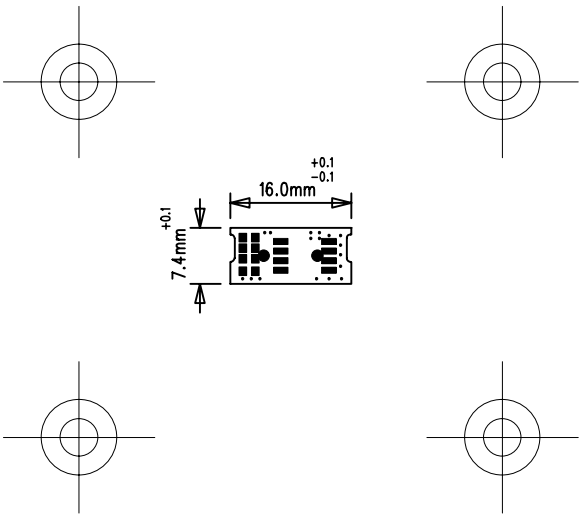
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401CH.01.01.PCB 09.22.2003		Stamp:	

I-CHIP Silkscreen Bottom



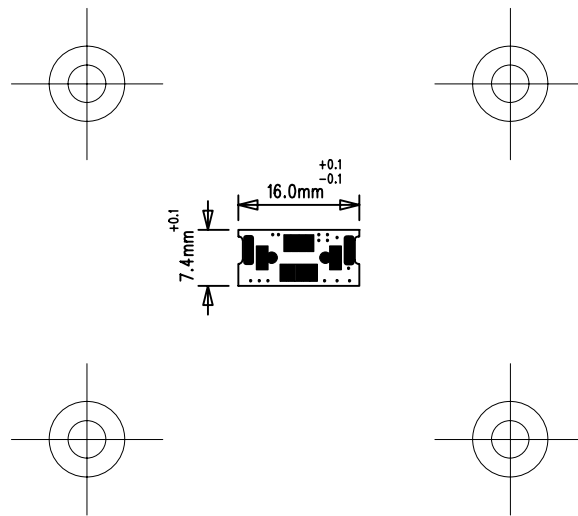
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401CH.01.01.PCB 09.22.2003		Stamp:	

I-CHIP Solder Mask Top



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: 401CH.01.01.PCB 09.22.2003		Stamp:	

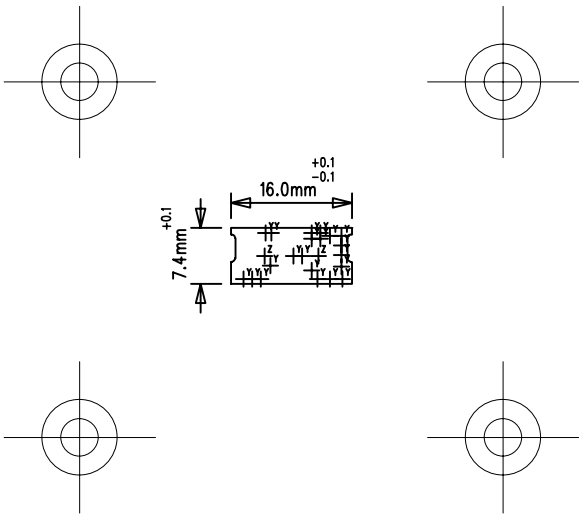
I-CHIP Solder Mask Bottom



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401CH.01.01.PCB 09.22.2003		Stamp:		

I-CHIP Drill Drawing

SIZE	QTY	SYM	PLTD
11.81	21	Y	PLTD
51.18	2	Z	NPLTD



MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401CH.01.01.PCB 09.22.2003		Stamp:		