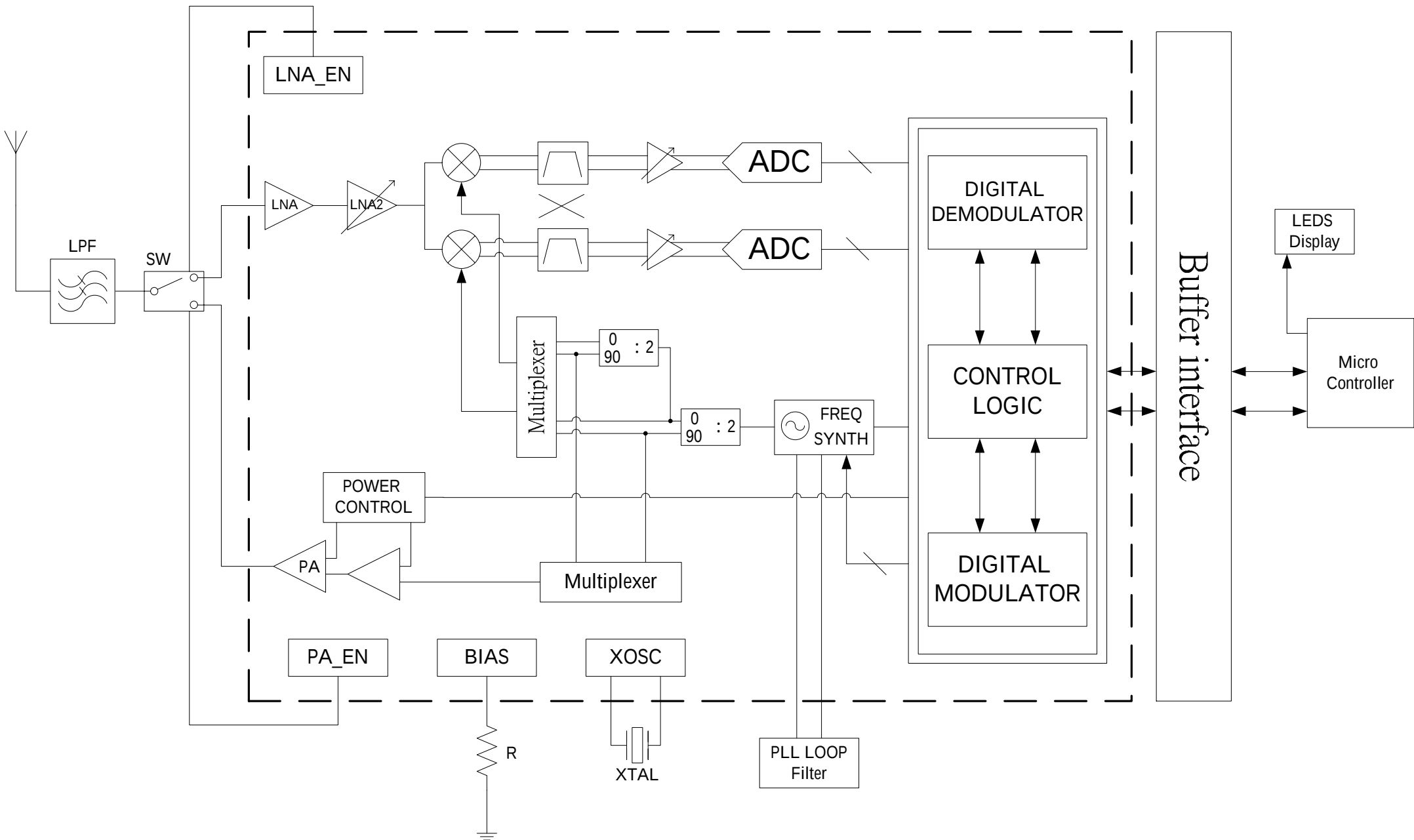
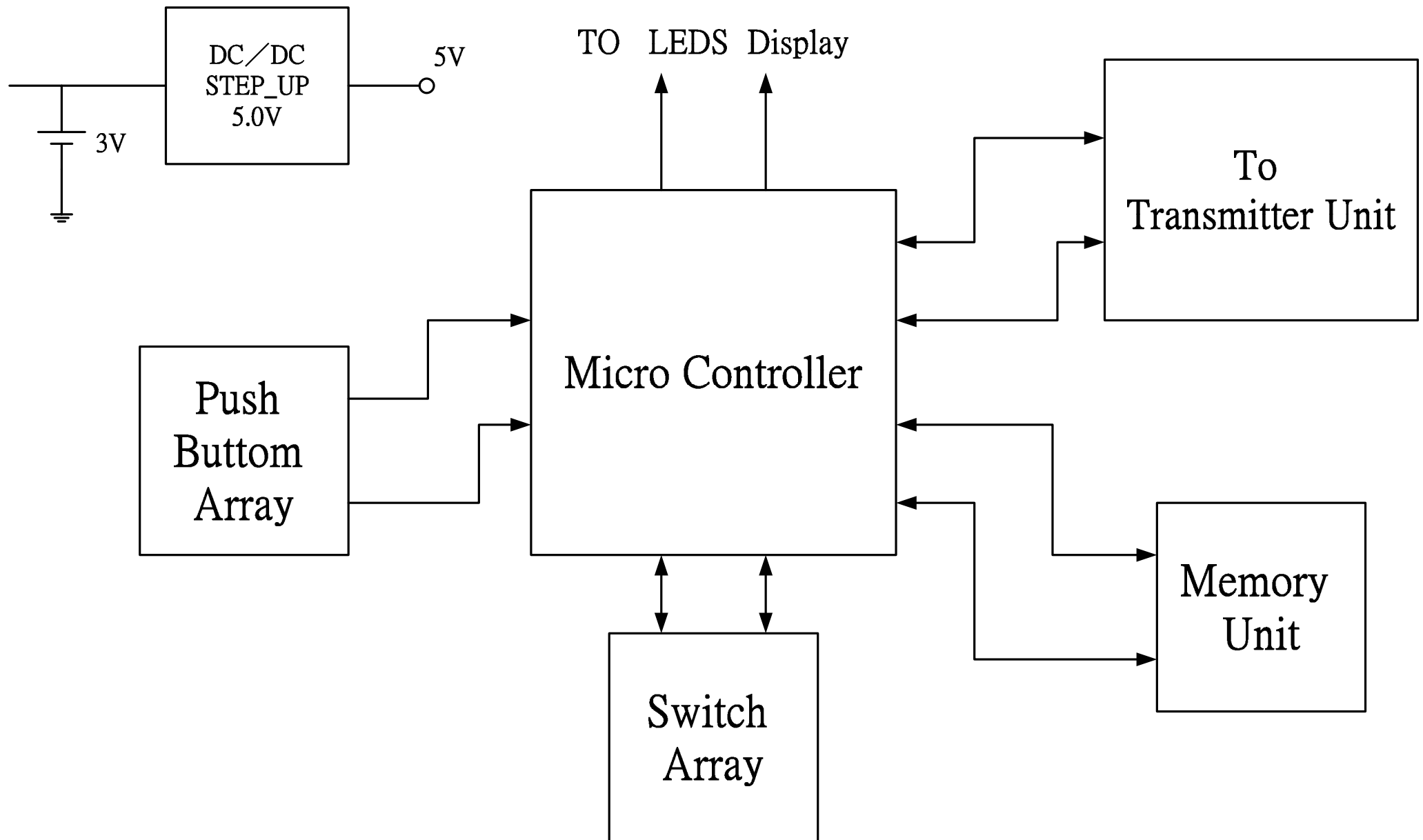




Transmitter Block Diagram

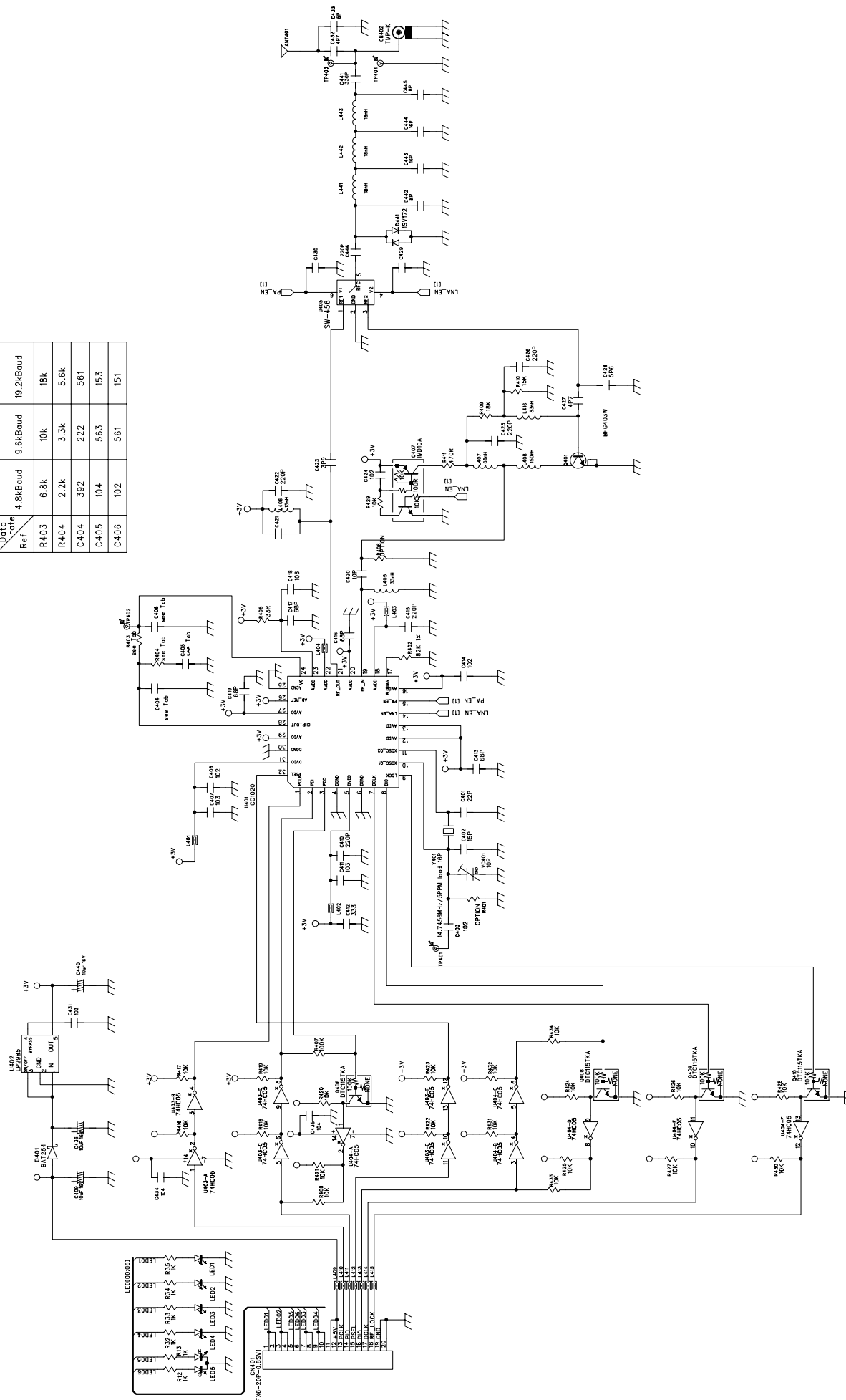


Encoder Block Diagram

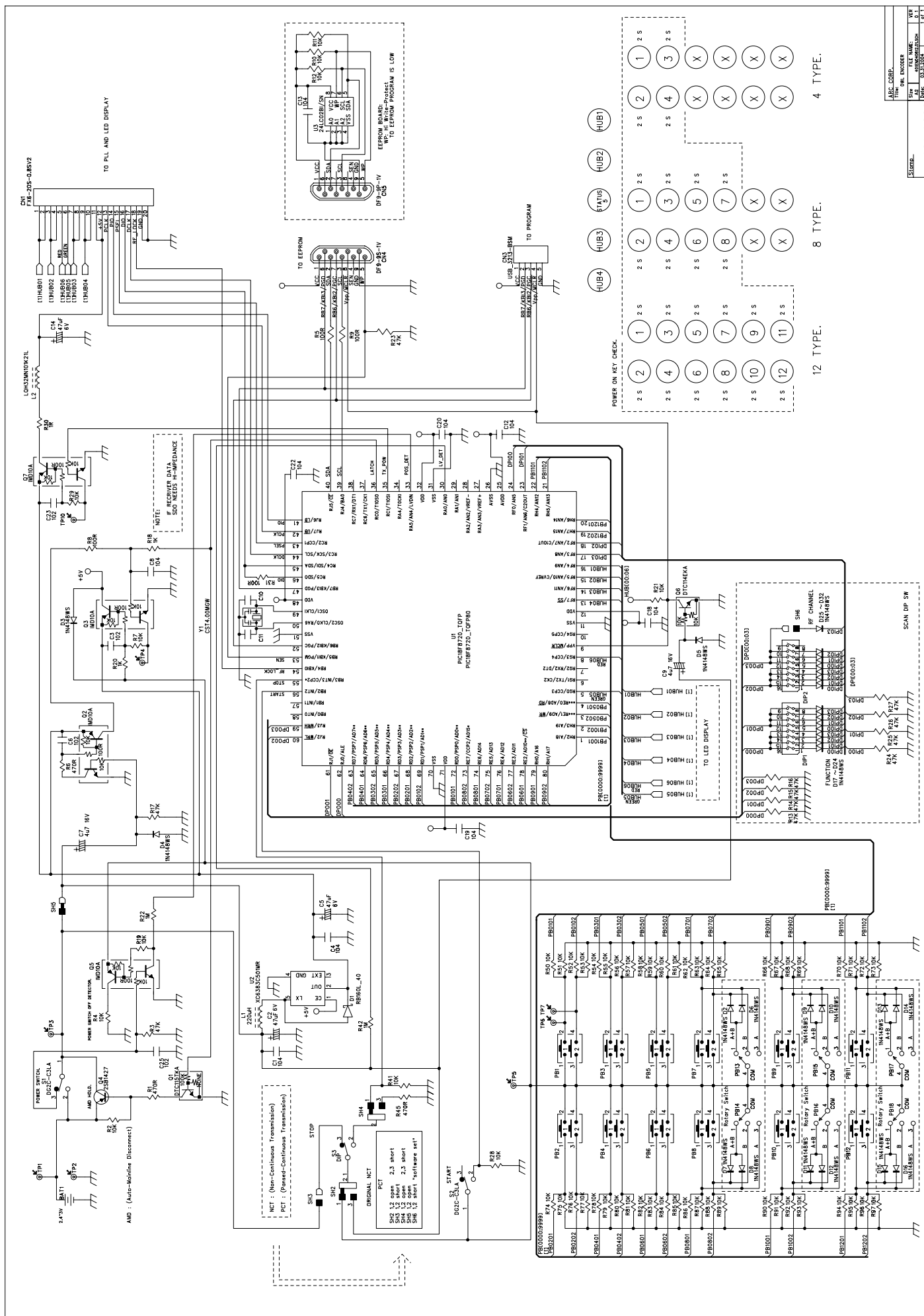
Transmitter Wiring Diagram

Table:

Data rate Ref	4.8kBaud	9.6kBaud	19.2kBaud
R403	6.8k	10k	18k
R404	2.2k	3.3k	5.6k
C404	392	222	561
C405	104	563	153
C406	102	561	151

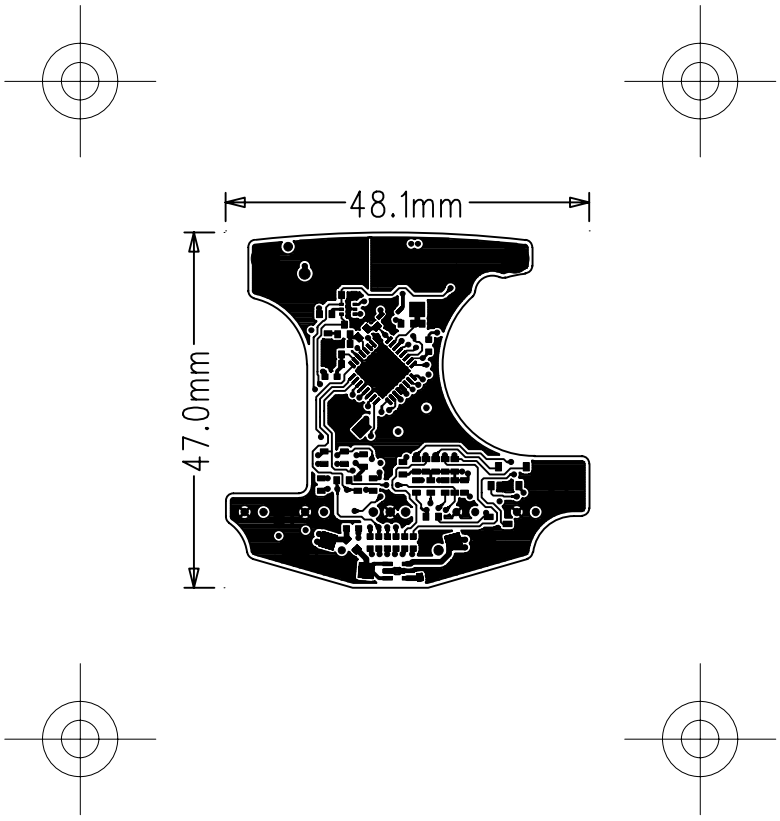


Encoder Wiring Diagram



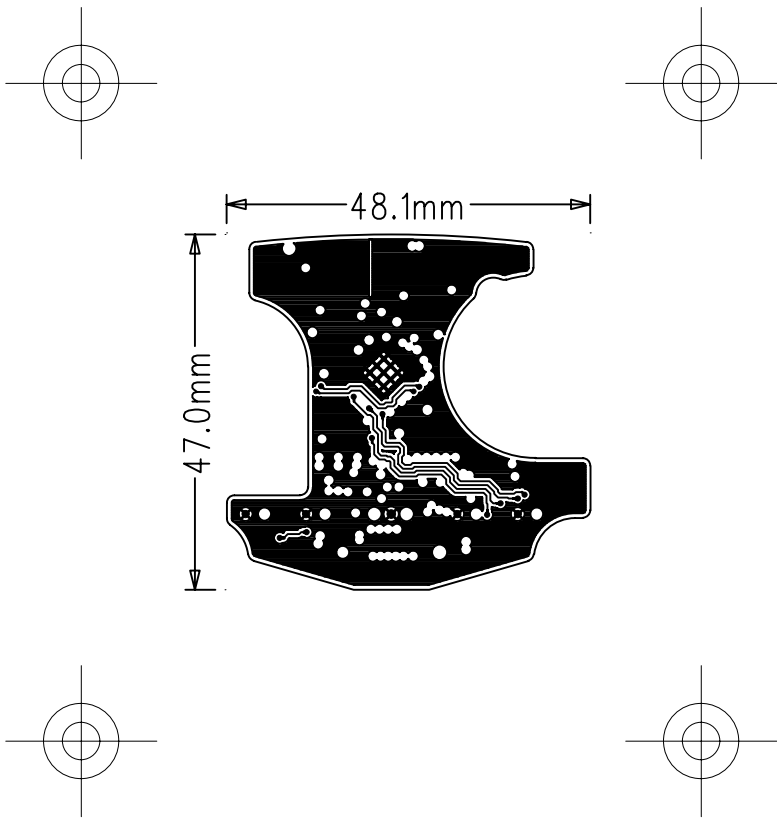


Transmitter Top Copper



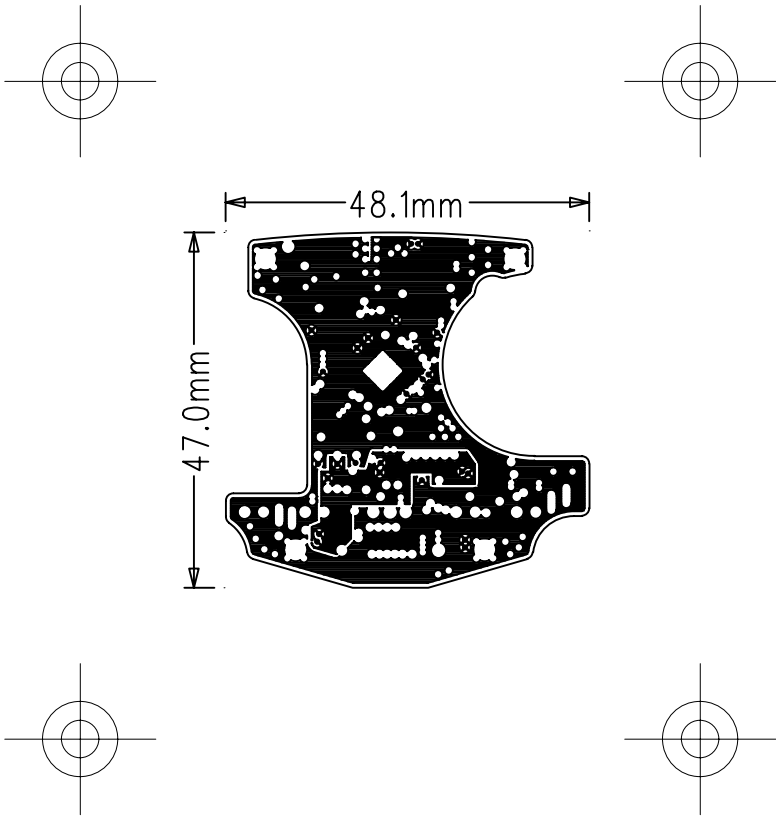
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO	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

Transmitter Ground plane Copper



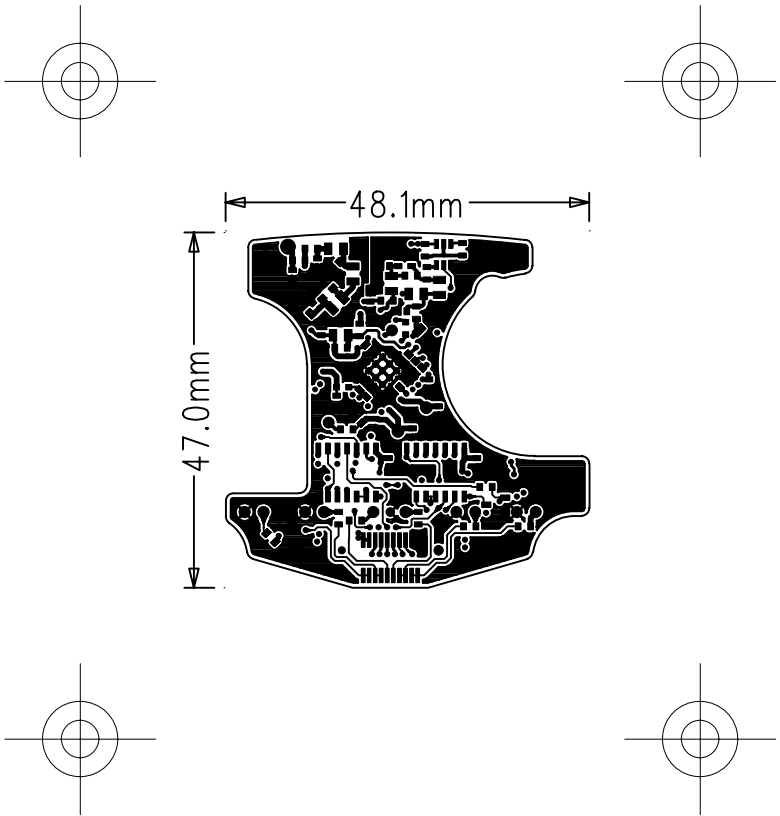
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THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒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

Transmitter Power plane Copper



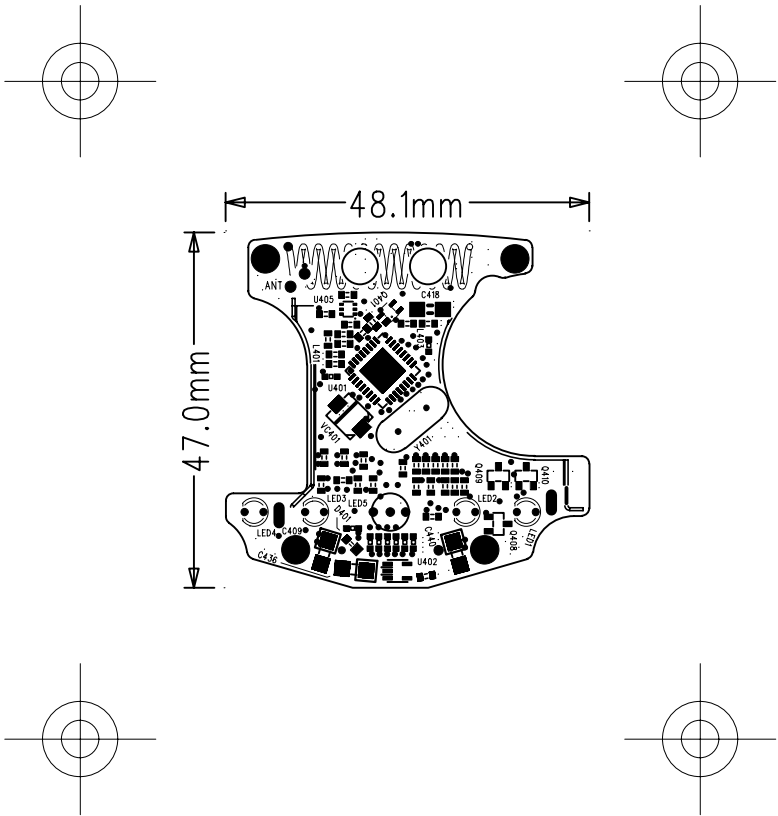
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO	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

Transmitter Bottom Copper



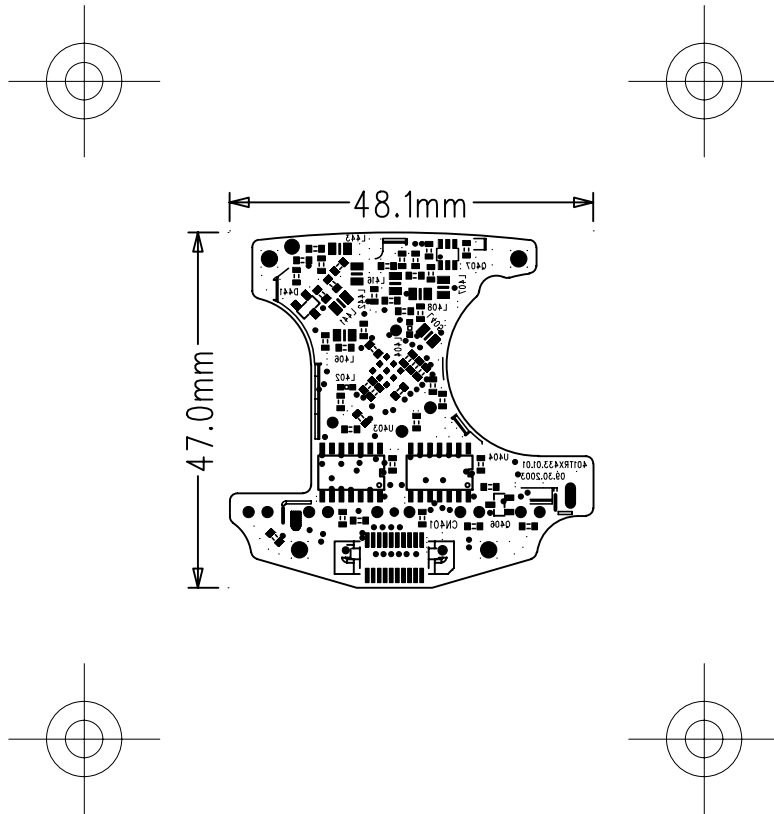
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENJSH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: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

Transmitter Silkscreen Top



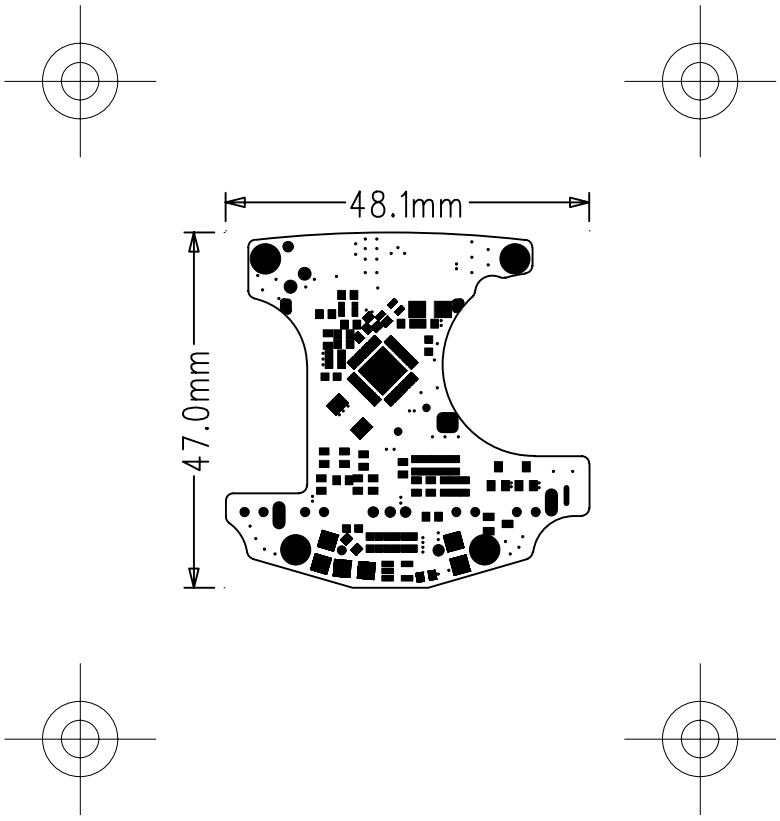
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO	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

Transmitter Silkscreen Bottom



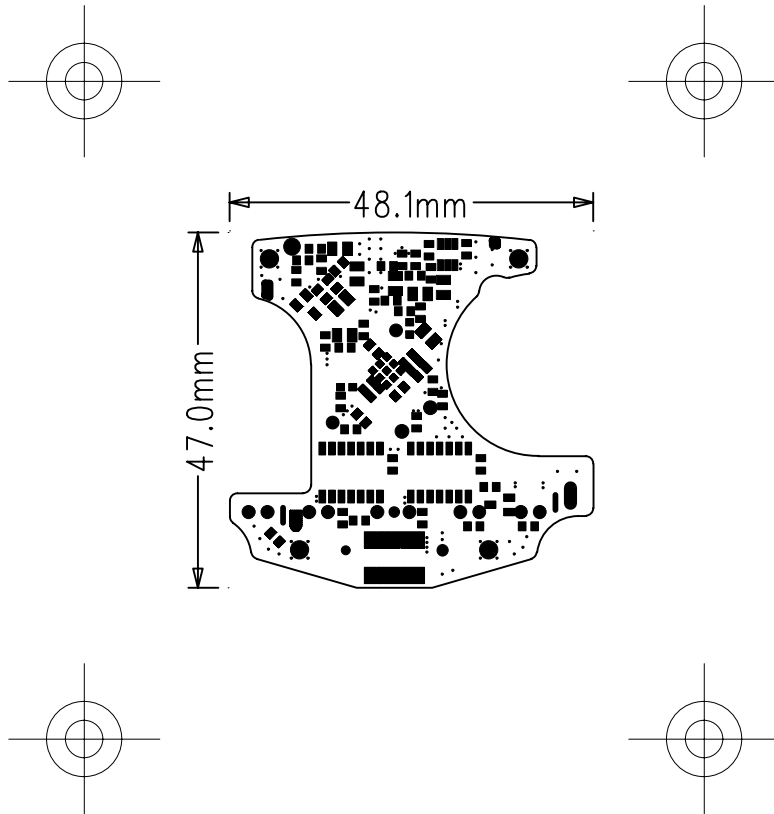
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO	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

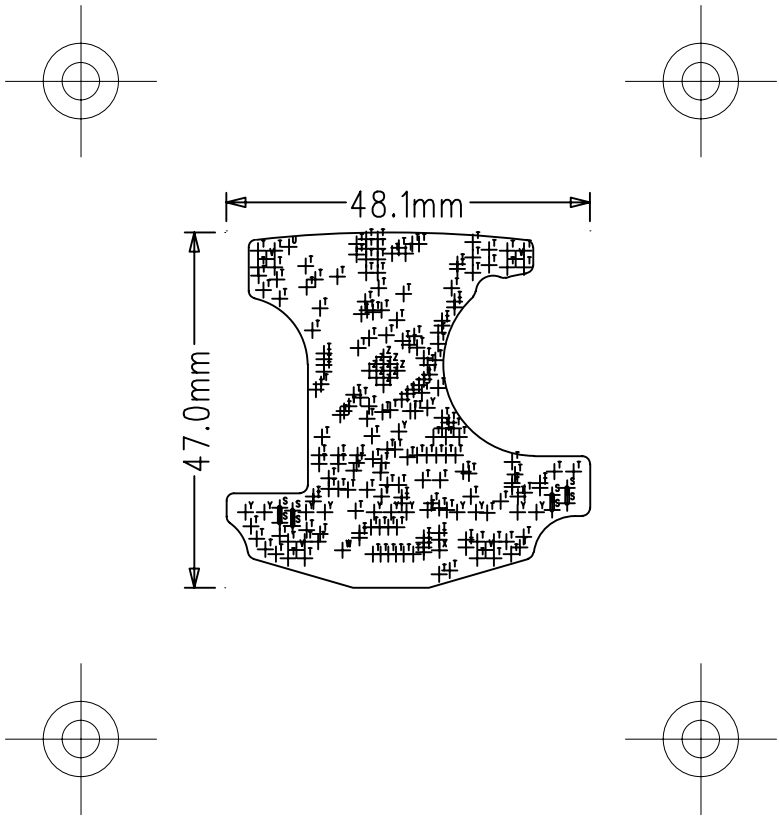
Transmitter Solder Mask Bottom



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:	

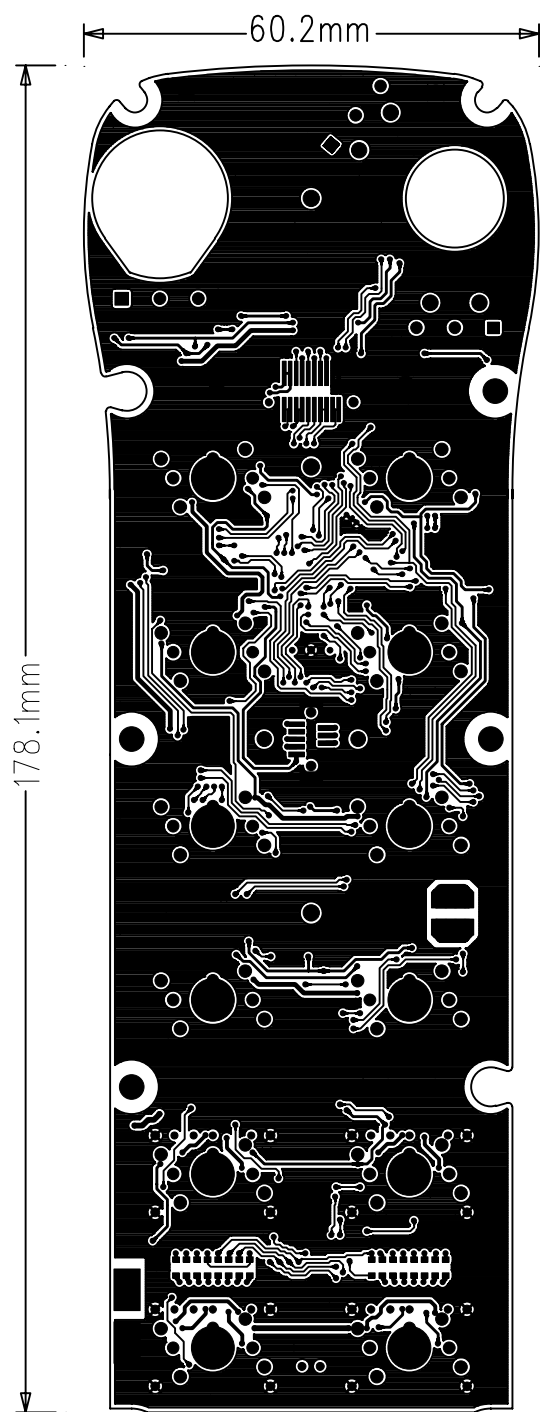
Transmitter Drill Drawing

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



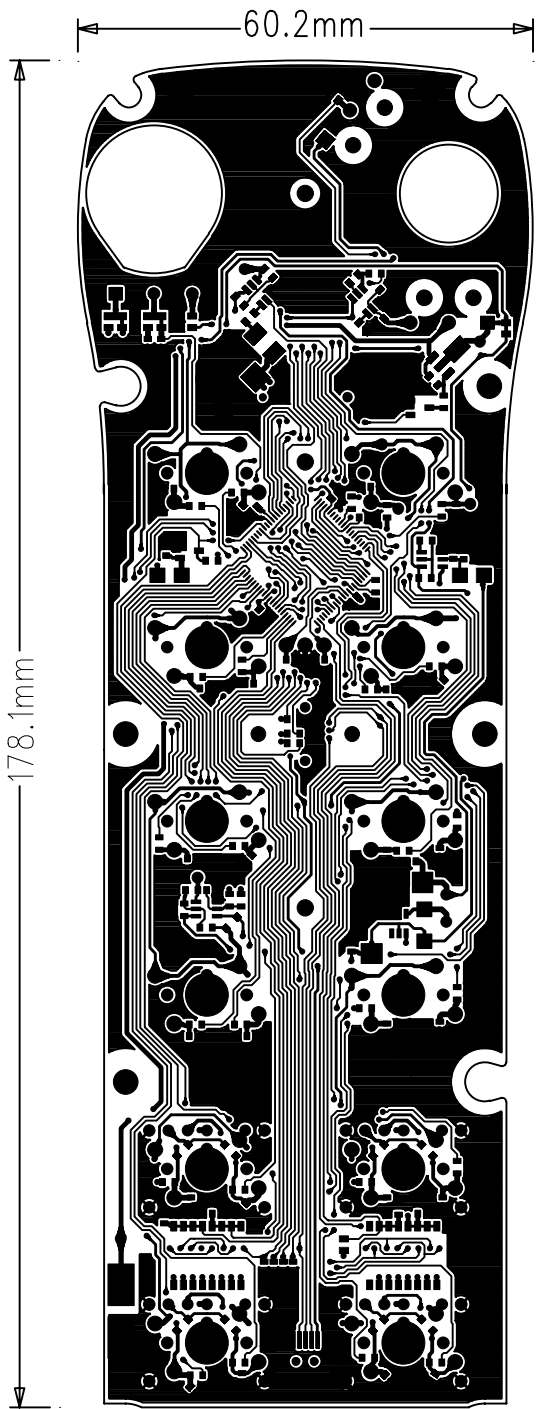
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☐ 1.2mm	☒ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☐ 2 SIDED	☒ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO	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

Encoder Top Copper



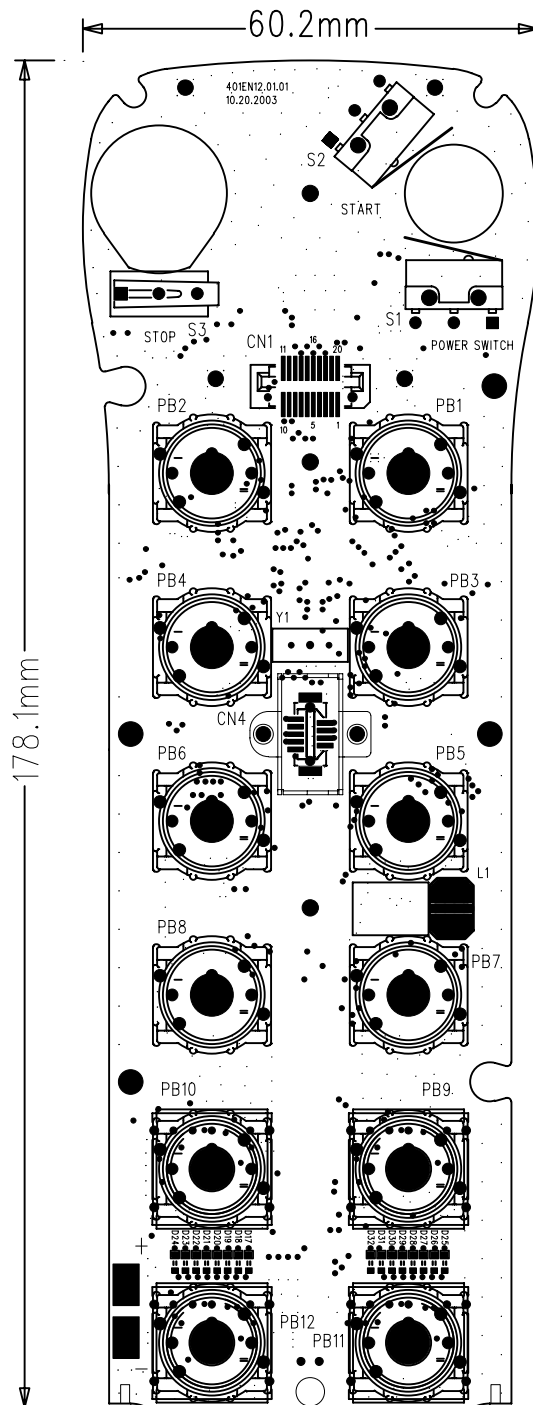
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO	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

Encoder Bottom Copper



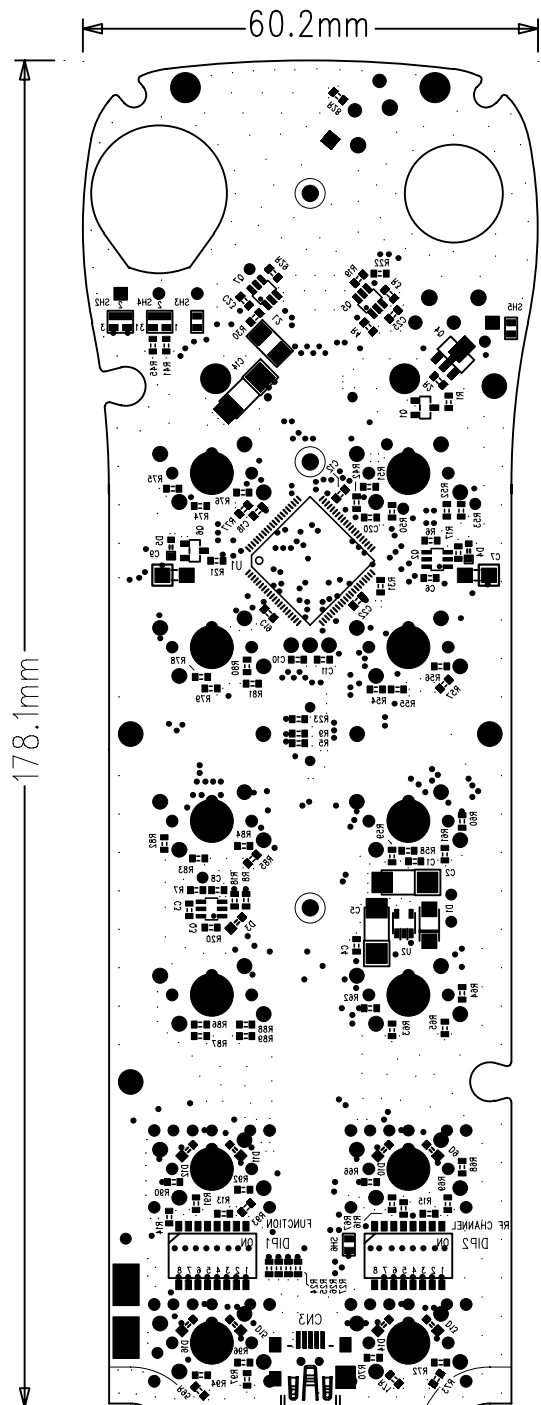
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: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

Encoder Silkscreen Top



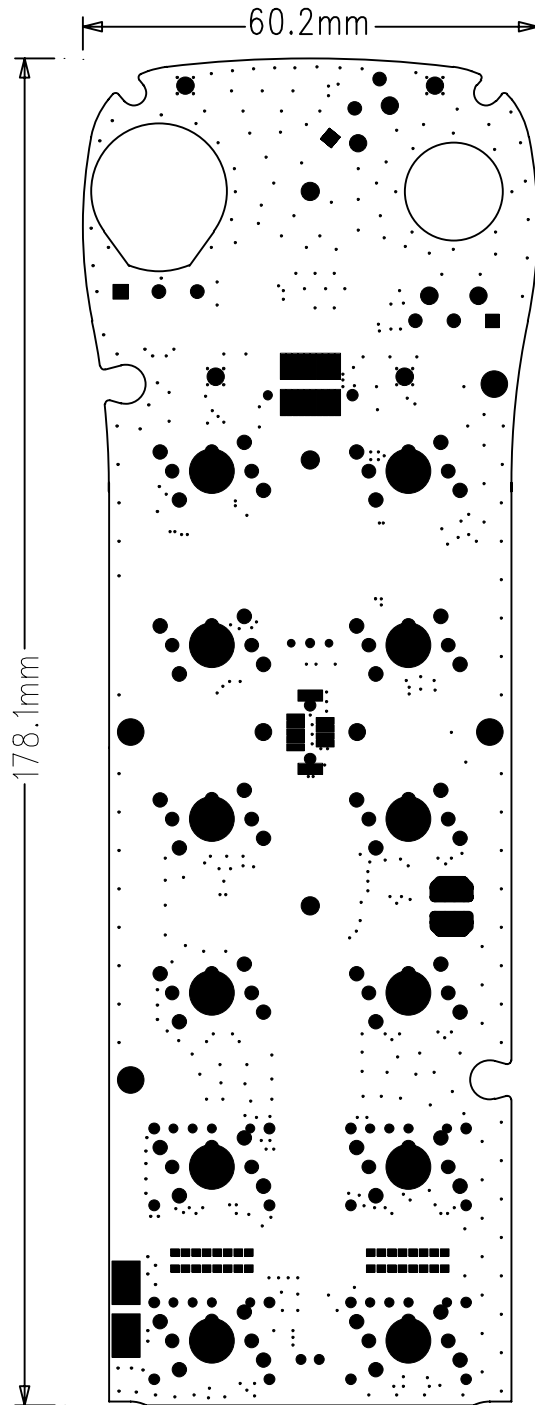
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: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

Encoder Silkscreen Bottom



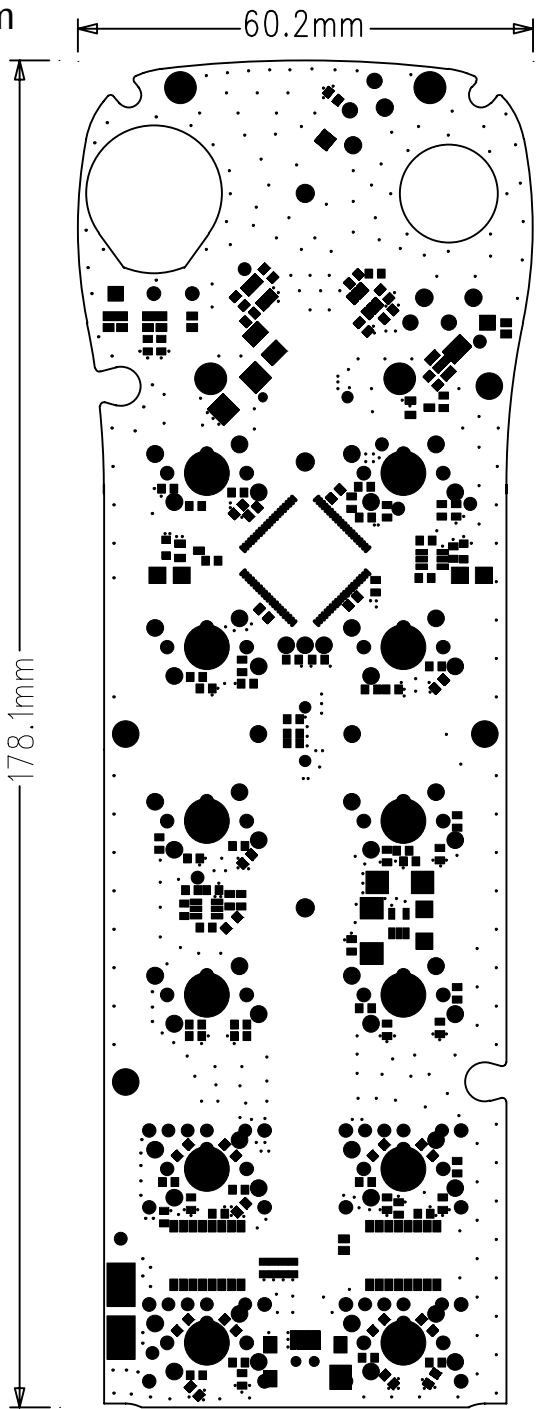
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES ☐ NO	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

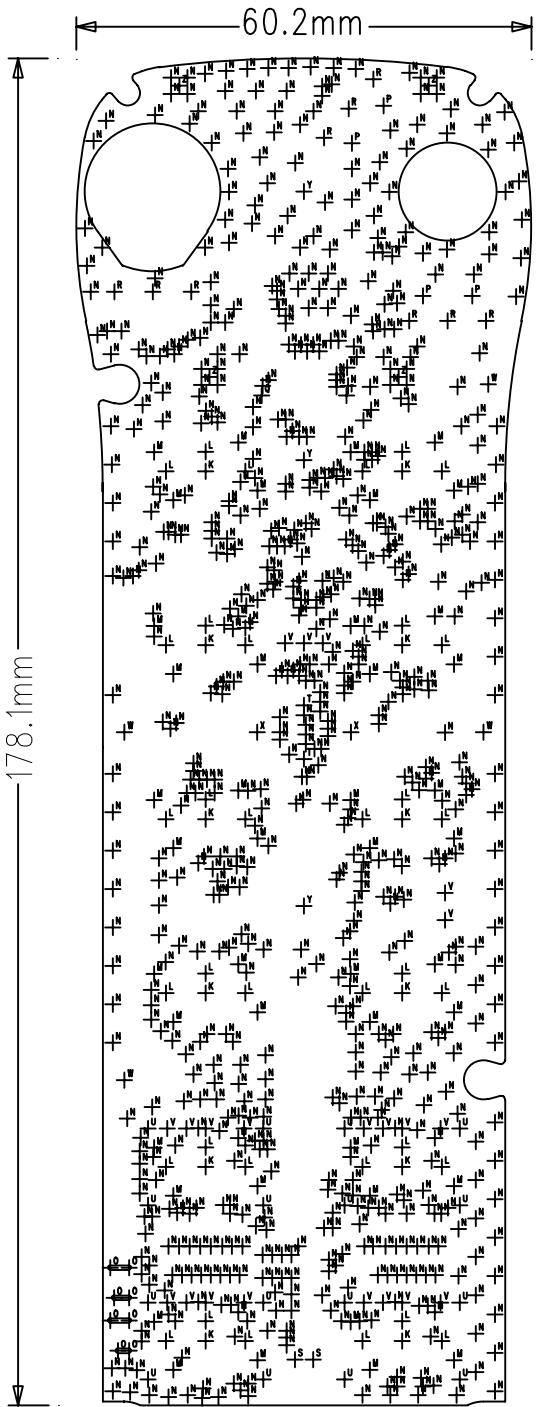
Encoder Solder Mask Bottom



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	☒ GREEN.ISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO		
NOTE: 401EN12.01.01.PCB 10.20.2003		Stamp:		

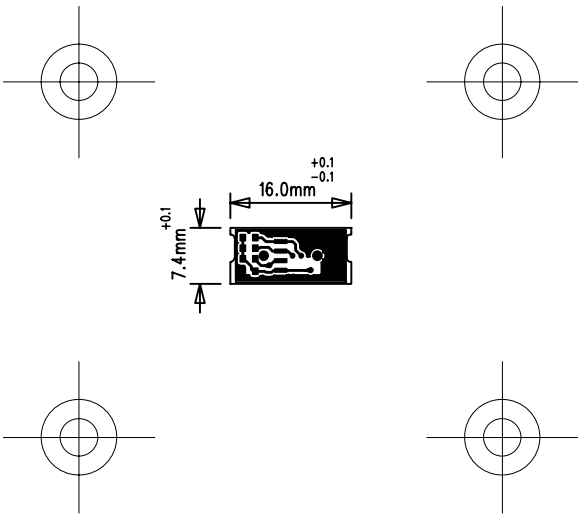
Encoder Drill Drawing

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



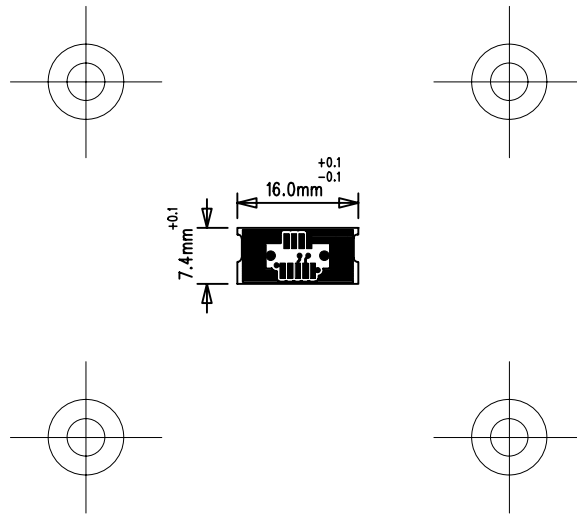
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☒ 1.6mm	☐ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREEN.ISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: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

I-CHIP Top Copper



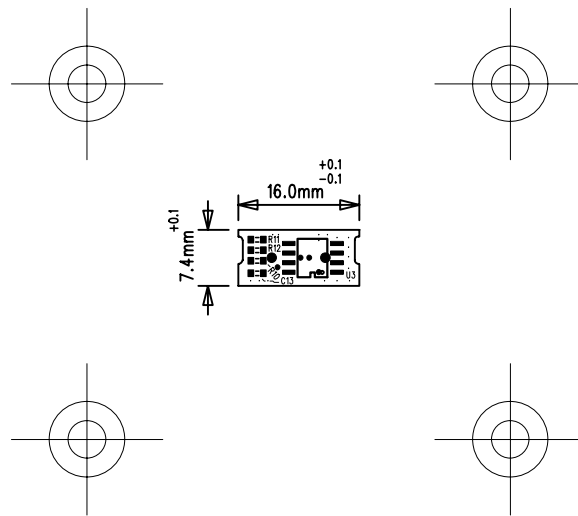
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm ☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ. ☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD	
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED ☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREENISH ☐ BLUE
SILKSCREEN	☒ WHITE		
PROBE TEST	☒ YES	☐ NO	
NOTE: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

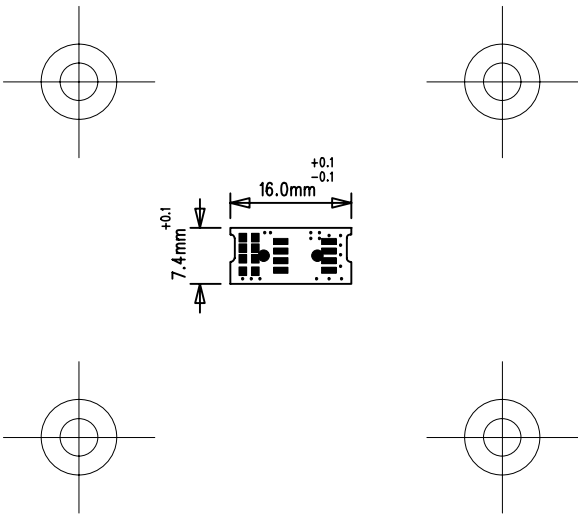
I-CHIP Silkscreen Top



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:	

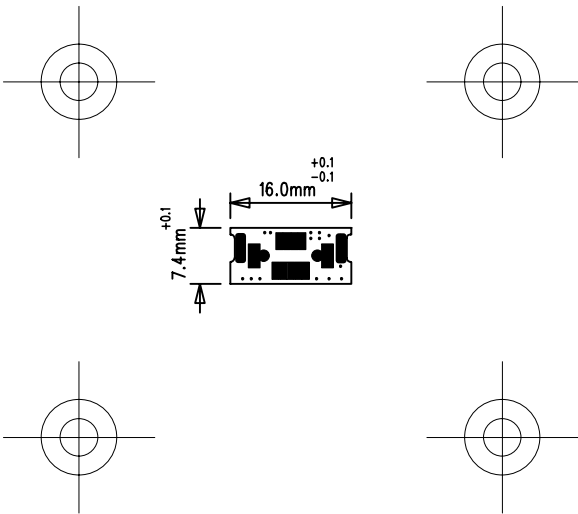
MATERIAL	☒ FR-4	☐ CEM-3	☐ PAPER PHENOLIC.	
THICKNESS	☐ 1.6mm	☒ 1.2mm	☐ 1.0mm	☐ 0.8mm
COPPER FOIL	☐ 0.5 OZ.	☒ 1.0 OZ.	☐ 2.0 OZ.	☐ 3.0 OZ.
PLATED	☒ STANNIC	☐ GOLD		
LAYER	☐ 1 SIDED	☒ 2 SIDED	☐ 4 SIDED	☐ 6 SIDED
SOLDER MASK	☐ GOLDEN	☐ BLACK	☒ GREEN,ISH	☐ BLUE
SILKSCREEN	☒ WHITE			
PROBE TEST	☒ YES	☐ NO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

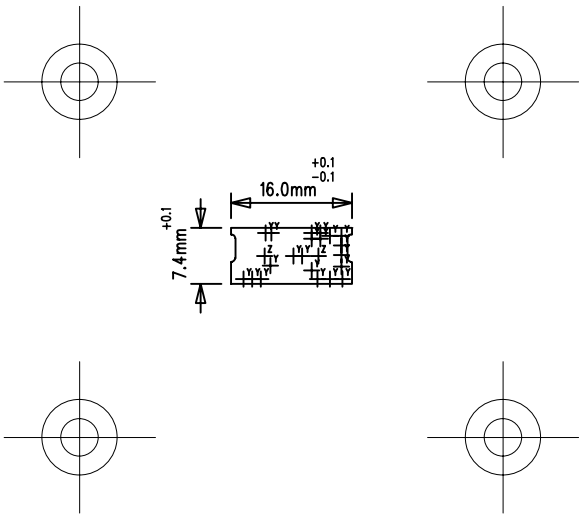
I-CHIP Solder Mask Bottom



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:		Stamp:		
401CH.01.01.PCB 09.22.2003				