STATEMENT OF WORK (SOW)
DMEA 26-6F7
03 March 2026
Project Engineer: Christopher Laney, DMEA/MEAB, (916) 938-3449

1.0 SCOPE: Procure a precision Circuit Board Milling machine to meet an organic Engineering need for rapid, cost effective onsite circuit board etching to support very low quantity and one-off circuit board prototype designs. This board mill capability will be used to test amplifiers, regulators, filters, create single use sets of test boards required for the load pull characterization process, and is required for DMEA to begin embedded antenna design research and development. This acquisition will enhance support for DMEA's Quick Reaction Engineering (QRE) projects, ensuring high performing designs.

1.1 TITLE: Circuit Board Milling System.

1.2 APPLICABILITY: It is often cost and time prohibitive to have Vendors manufacture one-off prototype circuit boards in very low quantities for single use applications such as device testing, device characterization, or an embedded antenna design that require many iterations. In these cases, DMEA does not typically pursue procuring any circuit boards to support the efforts, and the technology advancement opportunity is lost. However, having an in-house circuit board mill will allow engineers to quickly and cheaply create test boards for many different devices and circuits, leading to better performing DMEA designs.

1.3 BACKGROUND: Circuit board milling is a process where a design file (gerber) is loaded into the mill and a high speed spindle precisely grinds away the unused copper sections of the laminate, exposing only the intended connected circuit pathways and lands to mount components. Precision milling machines can route complex small copper features, depanel sub-assemblies from the main panel, drill mounting holes and vias, expose inner layer traces, and modify existing designs and populated boards.

1.4 PURPOSE: To provide a fast, low cost, and easy to use circuit board mill process to encourage organic embedded antenna design, device testing and characterization, and other single use circuit board manufacturing to enhance DMEA circuit design capabilities.

2.0 REFERENCED GOVERNMENT PROVIDED RESOURCES: N/A
2.1 GOVERNMENT DOCUMENTS: N/A
2.2 OTHER DOCUMENTS: N/A
2.3 GOVERNMENT FURNISHED EQUIPMENT: N/A
2.4 GOVERNMENT FURNISHED INFORMATION: N/A
2.5 GOVERNMENT FURNISHED FACILITIES/ACCESS: N/A

3.0 REQUIREMENTS:
3.1 GENERAL REQUIREMENTS:
3.1.1 RESERVED
3.2 PROGRAM MANAGEMENT: None
3.2.1 TECHNICAL INTERCHANGE MEETINGS (TIMs):

3.3 TASK REQUIREMENTS: Circuit Board Mill shall provide the following capabilities:
3.3.1 Software shall accept gerber files for processing
3.3.2 The equipment shall offer programmable process parameters
3.3.3 User shall be able to control tool in a manner to mill features and drill holes in fully populated circuit boards
3.3.4 Maximum material size shall be up to 13" x 9.8" x 1" [330 x 250 x 26 mm]
3.3.5 Maximum working design layout area shall be up to 12" x 9" x 0.3" [305 x 229 x 8 mm]
3.3.6 Mechanical Mill resolution (X/Y) shall be equal to or less than 0.00002" (0.02 mil) [0.47um]
3.3.7 Milling repeatability shall be equal to or less than ± 0.0002" (0.2 mil) [± 5um]
3.3.8 Tool shall be capable of milling both partially through and fully through a circuit board 0.3" [7.62 mm] thick
3.3.9 Tool shall fully enclose the working area during processing
3.3.10 Tool shall have the capability to connect to a vacuum system for dust/particulate mitigation during processing

3.4 REQUIREMENT: Contractor shall provide a mechanical milling system as identified in the table below, or equivalent:

Qty	Model	Description	P/N
1	LPKF Protomat S104	Advanced Mechanical Milling System	10066476
1	i-Series dust extraction system	Variable Speed Dust Extraction HEPA filter	US-114647-I
1	Starter Pack - Milling bits	Starter pack milling bits with dist. rings	US-129103-1
1	RF Starter pack – Milling bits	RF Starter pack milling bits with dist. rings	US-116394-1
1	LPKLF ProConduct	Equip. for through-hole plating with paste	115790

3.5 PROGRAM SUMMARY:

4.0 DATA ITEMS: The following CDRLs apply to this delivery order and shall be submitted as described below. Indicate on the cover of all delivered data the contract number, delivery order number, CET number, CET title, and the current DMEA Project Engineer name and office symbol.

1.	Sequence Number	A001
2.	Title	Operations Manual
3.	Subtitle	
4.	Authority	TBD
5.	Contract Reference	Para 3.TBD
6.	Requiring Office	DMEA/MEAB
7.	DD 250 Req.	DD
8.	App Code	N/A
9.	Distribution Statement Req'd	Distribution Statement A
10.	Frequency	OTIME
11.	As of	N/A
12.	Date of First Submission	10 days prior to the end of the period of performance indicated in the delivery order
13.	Date of Subsequent Submission	N/A
14.	Distribution	See Distribution List
15.	Total	See Distribution List
16.	Remarks	Contractor format is acceptable. Block 9: Mark all CDRL items with the distribution statement as shown above in Block 9 and with the following additional statement: "The U.S. Government retains unlimited data/computer software rights to this item." If DMEA #A16-001, paragraphs (o) and (p) are included in the delivery order, these additional statements do not apply to those items identified as technical data or computer software to be furnished with restrictions.

5.0 POINTS OF CONTACT:

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