



DIVISION OF  
CORPORATION FINANCE

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

March 23, 2015

Via e-mail  
Necdet F. Ergul  
Chief Executive Officer  
Microphase Corporation  
587 Connecticut Avenue  
Norwalk, CT 06854

**Re: Microphase Corporation  
Registration Statement on Form 10-12G  
Filed February 24, 2015  
File No. 000-55582**

Dear Mr. Ergul:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response and any amendment you may file in response to these comments, we may have additional comments.

Item I. Business, page 1

1. The description of your business should present a balanced description of the business done and intended to be done by you. In this regard, please provide a clear discussion of your current operations and the competitive landscape you face, as required by Item 101 of Regulation S-K. Please also revise this section to provide summary disclosure of your financial condition, including the going concern opinion issued by your auditor.
2. You should explain terms and phrases presented in the summary that may be unfamiliar to investors who are not familiar with your industry. For example, you state that "Microphase plans to introduce unique and highly flexible calibrated impedance and utility probes, universal test platforms and fixtures, and modular impedance analyzer probe systems." Please revise to clarify this disclosure and any other technical disclosure which may be difficult for ordinary investors to understand.

3. Please provide independent, objective support for your statements that the “contributions of Microphase to filter and multiplexer technology has been extensive. In fact, the terminology, technical definitions, and standards developed by Microphase have become parameters of specifications in the industry”. Please provide similar support for your statements that “Microphase is world-renowned in the RF and microwave defense electronics industry for its technical expertise in high frequency.”
4. We note in the last paragraph on page 1 you identify a list of prime contractors and a list of “notable contribution” products. Please tell us why you chose to highlight these companies and products and whether there are other customers and products which met the criteria for selection, that you chose not to name here. Also, if there are particular customers that you are particularly reliant on, please disclose that here.
5. Please expand your disclosure to explain what you mean when you state that you “recently signed an agreement to develop a new line of test probe products for the RF/Microwave Test and Measurement (“T&M”) industry” and tell us where you have filed this agreement as an exhibit.
6. In your disclosure about the RF/Microwave Industry, Defense Industry and Global RF/Microwave Test and Measurement Industry on page 2, please clarify that your current revenue is almost entirely generated from prime defense contractors to the US Government.

#### Growth Strategy, page 3

7. Please reconcile your growth strategy with your disclosure on page 10 that you “have only been able to increase [y]our revenues as a result of acquisitions”, that you have not been profitable over the last three years and that “[s]ales have been almost entirely of [y]our legacy products and [you] have not introduced new products into the market during such period.”

#### Recent Developments, page 3

8. We note the three acquisitions you describe in this section. Please clearly explain the material terms of these transactions, including the purchase price of the threat detection products from Microsemi Corporation; the percentage ownership you have in Amplitech and the terms of the agreement with Dynamac. Please tell us where you have filed the Microsemi and Amplitech agreements as exhibits.

#### Existing Product Families, page 4

9. Please revise your description of your product families so that investors who may not be well-versed in your technology can understand. For example, it is unclear what you mean when you describe Detectors and Limiters as products that your customers use for

“vertical integration in receiving subsystems and/or systems for detection of a wide range of signals and delivery of linearized output signals as well as limiting the power of incoming signals to protect receivers from jamming, desensitization, and/or damage.”

We have been unable during the past three years..., page 10

10. Please expand this risk factor to describe in more detail what you mean when you state that you have “been significantly short of capital.” Describe and quantify how this has affected your ability to deliver orders.

Our Strategy Includes Organic Growth..., page 15

11. Please revise this risk factor to reflect your disclosure on page 10 that you “have only been able to increase [y]our revenues as a result of acquisitions.” Also, please add appropriate risk factors discussing risks associated with growth through acquisitions.

We depend on manufacturing lines..., page 19

12. Please revise, where appropriate, to provide an expanded discussion of your manufacturing process, including testing and assembly procedures as well as the extent to which you rely on third-parties.

Overview, page 26

13. We note that you state the decrease in defense spending has had a “significant negative impact” on your results. Please expand your disclosure in the Overview section to reflect the fact that you have not introduced new products into the marketplace and describe whether there are other negative trends that have affected your results.

Item 3 Properties, page 33

14. We note your statement that the lease with 587 Connecticut Avenue LLC is terminable upon 90 days prior notice and that the company anticipates moving to a location in Shelton, Connecticut on or about April 1, 2015. Please disclose whether the termination notice has been given and where you have filed these leases as exhibits.

Item 4 Security Ownership of Certain Beneficial Owners and Management, page 33

15. Please identify the individuals with beneficial ownership over the entities identified in the table. For example, please tell us who has the beneficial ownership of the shares held by RCKJ Trust. Also, please clarify whether Ned Ergul or Mr. Necdet Ergul are the same person. Also, please include the Microphase Holding Company LLC ownership in the table.

Involvement in Certain Legal Proceedings, page 36

16. Please disclose the details of Microphase Corporation's involvement in this matter, including its investments in Packetport.com. Please also identify the former officers and directors and their respective terms of office with your company so that investors can understand the extent and nature of the transactions described.

Item 7. Certain Relationships and Related Transactions, page 37

17. Please expand your disclosure to more clearly describe the nature of the related party transactions. For example, who beneficially owns Microphase Holding Company LLC and who owns Edison Realty, Inc.
18. Please identify the "common management and common significant shareholders" that you share with mPhase Technologies. Also, please identify the "two officers" who received shares as "partial payment of loans due to them" and disclose the material terms of those loans, including the total loan amounts and the amounts of the partial payments.
19. We note that the "proceeds of this home equity loan were primarily used to fund loan advances to the Company by the president in recent fiscal years." Please disclose the amount of the home equity proceeds, the amount of the loan advances and the current status of the loans.
20. We note that you have not filed as exhibits the agreements for the transactions described in this section. Please file the agreements or tell us why you do not believe that you are required to do so.

Preferred Stock Page 42

21. We note your disclosure about your preferred stockholders. To the extent your preferred shareholders are 5% holders or officers and directors or could become 5% holders within 60 days, please expand to identify those holders.
22. Your disclosure about the conversion rate of the preferred shares is unclear and appears to be different from what is in your Amended and Restated Certificate of Incorporation filed as exhibit 3.1. Please tell us why the conversion rates change after December 31, 2014. In addition, please tell us what the current conversion rates are absent an "established trading market." Please revise or advise.

(I) Revenue, page F-9

23. We see disclosures on page 8 that you have a number of fixed-price contracts. We also see disclosures on page 16 that certain of your products are custom built to order. Please tell us the percentage of your revenues derived from fixed price contracts and custom built products during each of the periods presented in your Consolidated Statements of

Operations at page F-4. If revenues from such sales are material, tell us and revise the filing to indicate how the guidance at FASB ASC 605-35 impacts your accounting and disclosure requirements for such contracts.

Note 5 – Intangible Assets, page F-12

24. Please revise the filing to disclose your estimated aggregate amortization expense for each of the five succeeding fiscal years. Refer to FASB ASC 350-30-50-2.

Note 17 – Stockholders' Equity

Preferred Stock Transactions, page F-22

25. We note that on October 4, 2014 at a special meeting of the shareholders of the company the shareholders amended the terms of your preferred stock to be convertible at a price agreeable to the holders of such stock. Please provide us with further details on how this price will be determined and what authoritative U.S. GAAP you considered when determining your preferred stock should be classified as permanent equity.

Note 18 – Subsequent Events, page F-23

26. We see that on July 9, 2014 you executed a securities purchase agreement with AmpliTech Group Inc. to purchase 8,666,666 AmpliTech common shares. Please tell us the percentage ownership you have in Amplitech Group Inc. at June 30, 2014 and authoritative U.S. GAAP you considered when determining how you are required to account for and present this investment in your financial statements. We note it appears you are currently accounting for this investment as an available-for-sale marketable security.

General

27. Please note that this filing will become effective automatically 60 days after the date you initially filed it.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Gary Newberry at 202-551-3761 or Jay Webb, Senior Accountant, at 202-551-3603 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at (202) 551-3637 or Daniel Morris, Special Counsel, at (202) 551-3314 with any other questions.

Sincerely,

/s/ Daniel Morris for

Amanda Ravitz  
Assistant Director

cc: (via e-mail) Scott E. Linsky