MILITARY STANDARD

ELECTROMAGNETIC INTERFERENCE CHARACTERISTICS, MEASUREMENT OF

TO ALL HOLDERS OF MIL-STD-462

This interim notice is issued for use by the Department of the Navy with MIL-STD-462, dated 31 July 1967.

1. MAKE THE FOLLOWING PEN AND INK CHANGE:

Page iv, after "CS08-1" entry, add the following:

"CS09-1 Conducted Susceptibility 60 Hz to 100 kHz, ... 58a
Structure Current (Common Mode Current)"

2. THE FOLLOWING METHOD HAS BEEN ADDED:

NEW METHOD	TITLE	PAGE	DATE
CS09	Conducted Susceptibility 60 Hz to 100 kHz, Structure Current (Common Mode Current)	58a, b, and c	1 April 1980

3. RETAIN THIS NOTICE AND INSERT BEFORE THE TABLE OF CONTENTS.

4. Holders of MIL-STD-462 will verify that page changes and additions indicated above have been entered and will destroy the previous notice (notice page only). The latest notice (notice page) will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the Military Standard is completely revised or canceled.

Review activities:
SH, AS

Preparing activity
Navy - EC
(Project EMCS-N089)

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FSC EMCS

METHOD CS09

CONDUCTED SUSCEPTIBILITY 60 Hz TO 100 kHz, STRUCTURE CURRENT (COMMON MODE CURRENT)

1. Purpose. This method is used to determine whether an equipment or subsystem is susceptible to common mode currents flowing on the surfaces of the test sample.

2. Applicability. This test method is applicable for electronic equipment and subsystems that meet the following criteria:

a. Has an operating frequency range of 100 kHz or less, and
b. Has an operating sensitivity of 1 μV or less (for example, 0.5 μV).

3. Apparatus. The test apparatus shall consist of the following:

a. Signal Source: capable of producing currents at least 6 dB above the test limit.
b. Current Probe: capable of operating from 60 Hz to 100 kHz.
c. Frequency Selective Voltmeters: capable of operating from 60 Hz to 100 kHz.

4. Test Set Up and Procedures. The test set up and procedures shall be as follows:

a. Set up the apparatus as shown in FIGURE CS09-1.
b. Test points to be utilized on the test sample are dependent on the eventual installation or mounting process for the type of equipment being sampled. These test points are:

INSTALLATION or MOUNTING	TEST SAMPLE TEST POINTS
Equipment which will not be rack mounted.	Required only at diagonal extremes across the bottom surface.
Equipment which will be rack mounted.	Required at diagonal extremes across all surfaces of equipment.
Assembly (deck resting)	Required at diagonal extremes across all surfaces of equipment.
Bulkhead mounted	Required at diagonal extremes across rear surfaces of equipment.

c. Adjust the signal source so that 1 ampere of 60 Hz current is flowing through R. The level of current shall be determined with the frequency selective voltmeter(s) and current probe factor.
d. Tune the signal source from 60 Hz to 100 kHz maintaining a level of current through R greater than that specified in the applicable limit, but not exceeding 2 amperes.
e. While the signal source is being tuned determine if the performance of the test sample is being degraded beyond the tolerances indicated in the test sample equipment specifications.

f. At each susceptible frequency, adjust the level of current until the threshold of susceptibility is attained and record the level of current.

5. Notes.

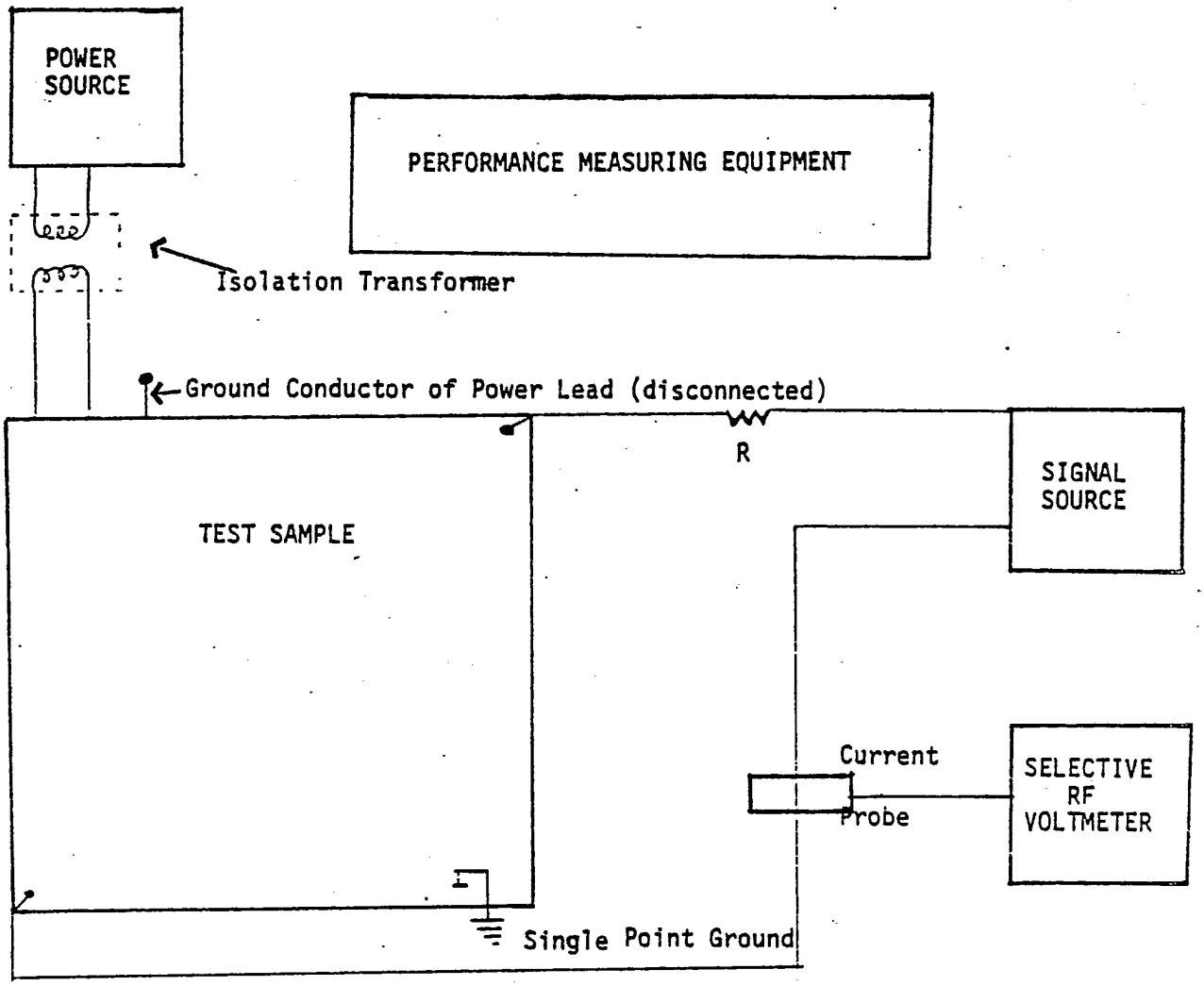
a. If the test sample is not battery operated, its AC power source must be isolated using an appropriate isolation transformer. The use of isolation transformers is also applicable to the test signal source device, the test signal measurement equipment and the equipment which is required for measuring test sample performance degradation.

b. The test sample shall be tested on a non-conductive surface such as a wooden bench or pallet to enable a single point ground to be established.

c. Damage to the exterior finish of the test sample shall be kept to a minimum. Screws or protuberances at ground potential near the diagonal corners of the test sample shall be used as test points; connections shall be made with clip or clamp type leads. If test points at ground potential do not exist near the diagonal corners of the test sample, a sharply pointed test probe shall be used in place of the clip or clamp type.

CAUTION

Care must be exercised when performing this test since the "safety ground" is disconnected from the power mains for the duration of the test.



NOTES:
1. All AC operated equipments associated with this test will obtain AC power from an apporpriate isolation transformer.
2. The ground conductor of equipment power leads will be floated above ground (unconnected).

FIGURE CS09-1