GME 11/20/23
Field Control per IEC 61000-4-3
General Block Diagram

Probe Pic & Name
F_{lo}
F_{hi}

Probe Temp

Probe Batt

Probe Status Block

SG Pic & Name
F_{lo}
F_{hi}
P_{max}

SG Status Block

RF On
RF Off
Mod On
Mod Off
Sweep On
Sweep Off

SG Control Block

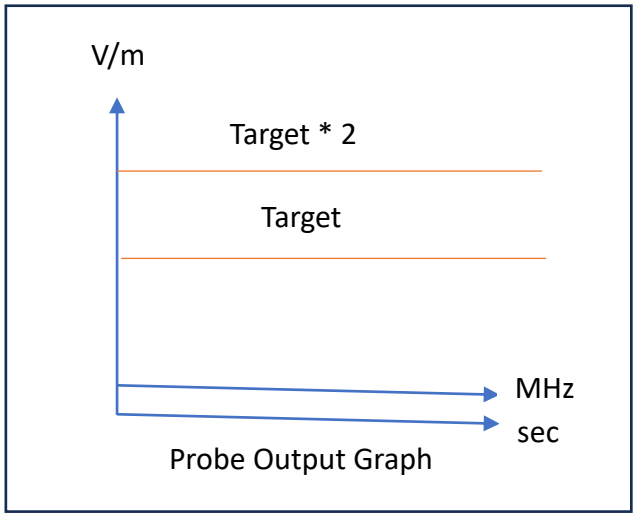
F_{start} x MHz
F_{stop} x MHz
Field x V/m
Dwell x sec
AM x kHz
AM x %

Amplifier Name
F_{lo}
F_{hi}
P_{in}

Antenna Name
F_{lo}
F_{hi}

Sweep: $F_{n+1} = F_n + (x * F_n)$

User Settings: x



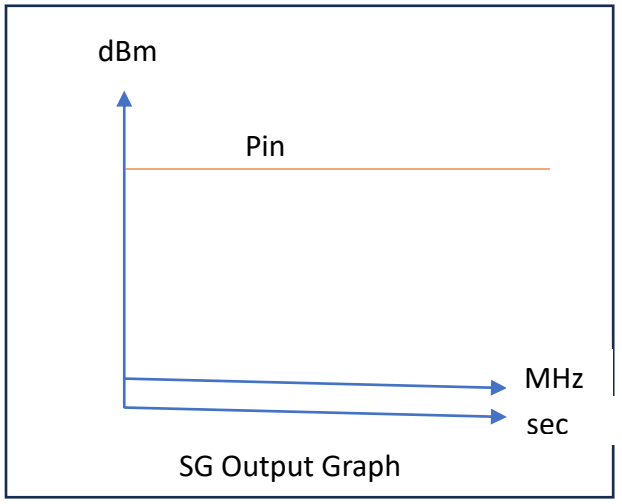
Probe Output Graph

V_x V_x V_x V/m
V_{rms} V/m

Probe Output Block

F_n MHz
P_{out} dBm

SG Output Block



SG Output Graph

Grey Blocks are
Pull Down Menus

See Next Page

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Field Control per IEC 61000-4-3
Description

IEC 61000-4-3 Protocol:

a. Field Strength: 1, 3, 10 V/m, Tolerance -0 dB, + 6 dB (6dB is 2 times Field Strength)
b. Target Field Strength $\geq$ Measured Field Strength < 2 times Target Field Strength
c. 80%, 1 KHz AM Modulation (Internal to Signal Generator)
d. Dwell > 0.5 seconds
e. Sweep: $F_{n+1} = F_n + (0.1 * F_n)$.

Equipment Requirements:

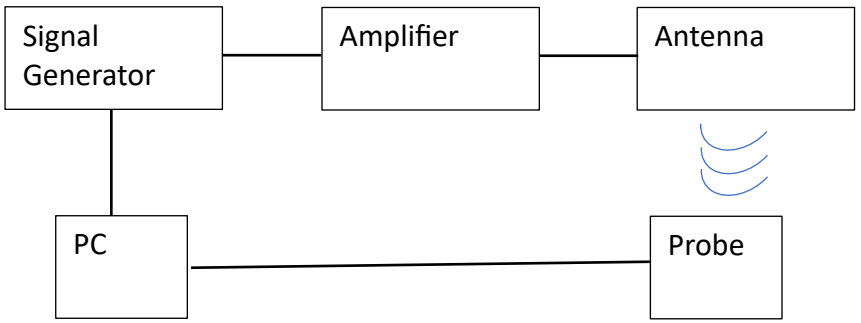
a. Probe Temperature and Battery within tolerance
b. Fstart > Flo (Probe, SG, Amp, Antenna)
c. Fstop < Fhi (Probe, SG, Amp, Antenna)
d. Pmax < Pin (Amplifier)

Probe Pic & Name F_{lo} F_{hi}
ETS HI-6006 F_{lo} = 0.1 MHz F_{hi} = 6000 MHz

SG Pic & Name F_{lo} F_{hi} P_{max}
Agilent N5181A F_{lo} = 0.1 MHz F_{hi} = 6000 MHz P_{max} = 10 dBm

Antenna Name F_{lo} F_{hi}
ETS 3143B F_{lo} = 30 MHz F_{hi} = 3000 MHz
EMCO 3115 F_{lo} = 1000 MHz F_{hi} = 18000 MHz

Amplifier Name F_{lo} F_{hi} P_{in}
AR 25A250AMB F_{lo} = 1 MHz F_{hi} = 300 MHz P_{in} = 0 dBm
IFI SMX25 F_{lo} = 300 MHz F_{hi} = 1000 MHz P_{in} = 0 dBm
IFI S3110 F_{lo} = 800 MHz F_{hi} = 3000 MHz P_{in} = 0 dBm
MC ZVE8G F_{lo} = 2000 MHz F_{hi} = 8000 MHz P_{in} = 0 dBm



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Field Control per IEC 61000-4-3
Example Compliant Test Setup

ETS HI-6006
F_{lo} = 0.1 MHz
F_{hi} = 6000 MHz

Probe Temp

Probe Batt

Probe Status Block

F_{start} 80 MHz

F_{stop} 300 MHz

Field 10 V/m

Dwell 1 sec

AM 1 kHz

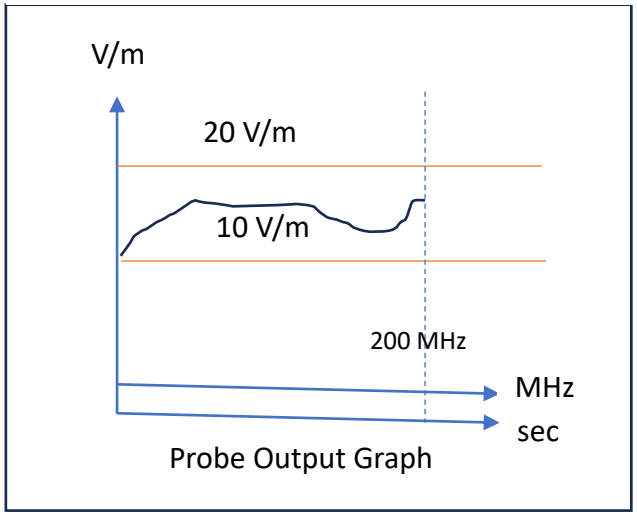
AM 80 %

AR 25A250AMB
F_{lo} = 1 MHz
F_{hi} = 300 MHz
P_{in} = 0 dBm

ETS 3143B
F_{lo} = 30 MHz
F_{hi} = 3000 MHz

Sweep: $F_{n+1} = F_n + (0.1 * F_n)$

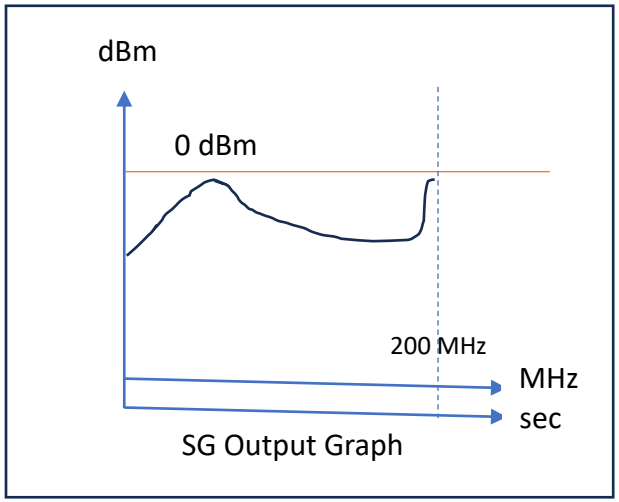
User Settings: Good



Probe Output Graph

Agilent N5181A
F_{lo} = 0.1 MHz
F_{hi} = 6000 MHz
P_{max} = 10 dBm

SG Status Block



SG Output Graph

RF On
RF Off

Mod On
Mod Off

Sweep On
Sweep Off

SG Control Block

V_x =18 V_x = 14 V_x =16 V/m

V_{rms} 16 V/m

Probe Output Block

F_n = 200 MHz

P_{out} = -1 dBm

SG Output Block