

Ultrasonic unit _____ Date _____
 Model _____ Serial no. _____ By _____
 Search unit _____ ASNT Level _____
 Size _____ Type _____
 Frequency _____ MHz

TABULATION CHART					
No.	a dB Reading	b % Scale	c Corrected Reading	d dB Error	e Collective dB Error
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

Find the average % screen values from column b disregarding the first three and last three tabulations. Use this percentage as %₂ in calculating the Corrected Reading c.

The dB Error d is established by subtracting the Corrected Reading from the dB Reading a. Beginning with the tabulated dB Error d nearest to 0.0, collectively add the dB Error d values up and down placing the subtotals in column e (Collective dB Errors).

Moving vertically up and down from the Average % line, find the largest vertical span in which the top and bottom Collective dB Error figures remain at or below 2 dB. Count the number of vertical spaces of movement, subtract one, and multiply the remainder by six. This dB value is the acceptable range of the unit.

In order to establish the acceptable range graphically, Form J-2 should be used in conjunction with Form J-1 as follows:

(1) Apply the collective dB Error "e" values vertically on the horizontal offset coinciding with the dB reading values "a."

(2) Establish a curve line passing through this series of points.

(3) Apply a 2 dB high horizontal window over this curve positioned vertically so that the longest section is completely encompassed within the 2 dB Error height.

(4) This window length represents the acceptable dB range of the unit.

$$dB_2 = 20 \times \text{Log} \left(\frac{\%_2}{\%_1} \right) + dB_1$$

%₂ (Average) _____ %

Total qualified range _____ dB to _____ dB = _____ dB

Total error _____ dB

FORM J-1 Total qualified range _____ dB to _____ dB = _____ dB

Total error _____ dB

Form J-1—Ultrasonic Unit Certification

[see 8.30.2.1(6), 8.30.2.1(9), 8.30.2.1(13), 8.30.2.1(14), 8.30.2.1(16), 8.30.2.2, and 8.30.2.3]