



Certificate of Calibration

Ocean Sonics, Ltd.

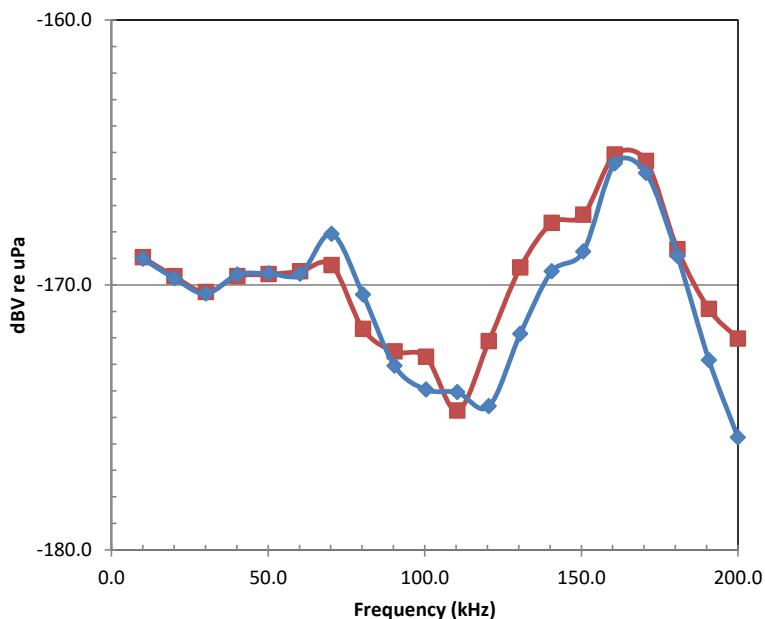
Calibration Certificate Number: **C4542**

Test Result: 10 kHz to 100 kHz: -171.0 ± 2.9
10 kHz to 200 kHz: -170.4 ± 5.3

Model Number SB35-ETH
Serial Number 1361
Manufacture Date 4-Sep-2018
Measurement Date 27-Sep-2018
Certificate Date 27-Sep-2018
Sensitivity @ 26 Hz -168.5 dB re V / uPa
Case Type Titanium
Element Manufacturer GeoSpectrum
Element Model M24HF
Element Serial 1770
Preamp Model 04-300419-01
Calibrated By S.MacLean
Work Order Number W1728
Test Type RX Sensitivity
Test Procedure Complex RMS
Test Location Tank #2, 1 m
Water Temperature 18 °C

Projector Manufacturer Ocean Sonics
Projector Model TH2-SER-4F
Projector Serial 2210
Measurement Distance 1 m
Output Level 131.9 dB re uPa @ 1 m
Tone Burst 100.0 us / 300 ms
Reference Manufacturer Ocean Sonics
Reference Model RB9-ETH
Reference Serial 1773
Primary Calibration 8-Nov-2017
Preamp Manufacturer Ocean Sonics
Preamp Model 04-300434-01
Preamp Serial 912
Preamp Gain 36 dB
ADC Manufacturer Ocean Sonics
ADC Model Number 04-300423-01
ADC Serial Number 586

Receive Sensitivity



Frequency kHz	Sensitivity [dBV re uPa]	
	0 deg	90 deg
10.0	-169.0	-169.0
20.1	-169.7	-169.7
30.1	-170.3	-170.3
40.2	-169.7	-169.6
50.2	-169.6	-169.6
60.2	-169.5	-169.6
70.3	-169.3	-168.1
80.3	-171.7	-170.4
90.4	-172.5	-173.1
100.4	-172.7	-174.0
110.4	-174.8	-174.1
120.5	-172.1	-174.6
130.5	-169.3	-171.8
140.5	-167.7	-169.5
150.6	-167.4	-168.7
160.6	-165.1	-165.4
170.7	-165.3	-165.8
180.7	-168.7	-168.9
190.7	-170.9	-172.8
200.0	-172.0	-175.8