CAUTION

SHORTSQUEEK is intended for use between low resistance points only. Open circuit voltage is typically ± 5 V at 1 kHz.

Global offers a full line of test and design products that deliver the performance you demand...at prices you can afford. For information on other Global products simply fill out and mail the enclosed reply card.

SERVICE AND WARRANTY INFORMATION

FACTORY SERVICE AND REPAIR

Global Specialities will service and repair this instrument free of charge for a period of one full year, subject to the warranty conditions below.

To obtain a return merchandise authorization (RMA) required for all returns, phone our Customer Service Department for an RMA and all shipping instructions: Tel. 1-800-572-1028 or write:

GLOBAL SPECIALTIES®
An Interplex Electronics Company
70 Fulton Terrace, P.O. Box 1942
New Haven, Connecticut 06512
ATTN CUSTOMER SERVICE DEPARTMENT
1-800-572-1028

WARRANTY

Global Specialties warrants this device to be free from defective materials or workmanship for a period of one full year from date of original purchase.

Global Specialties under this warranty is limited to repairing the defective device when returned to the factory, shipping charges prepaid, within one full year from date of original purchase.

Units returned to Global Specialties that have been subject to abuse, misuse, damage or accident, or have been connected, installed, or adjusted contrary to the instructions furnished by Global Specialties or that have been repaired by unauthorized persons will not be covered by this warranty.

Global Specialties reserves the right to discontinue models, change specifications, price or design of this device at any time without notice and without incurring any obligation whatsoever.

The purchaser agrees to assume all liabilities for any damage and/or bodily injury which may result from the use or misuse of this device by the Purchaser, his employees or agents.

This warranty is in lieu of all other representations or warranties expressed or implied and no agent or representative of Global Specialties is authorized to assume any other obligation in connection with the sale and purchase of this device.

BREADBOARDING SOCKETS' LIFETIME GUARANTEE

All Global breadboarding sockets are guaranteed for life. If a socket ever fails to meet your requirements, return it and we will replace it, NO QUESTIONS ASKED.

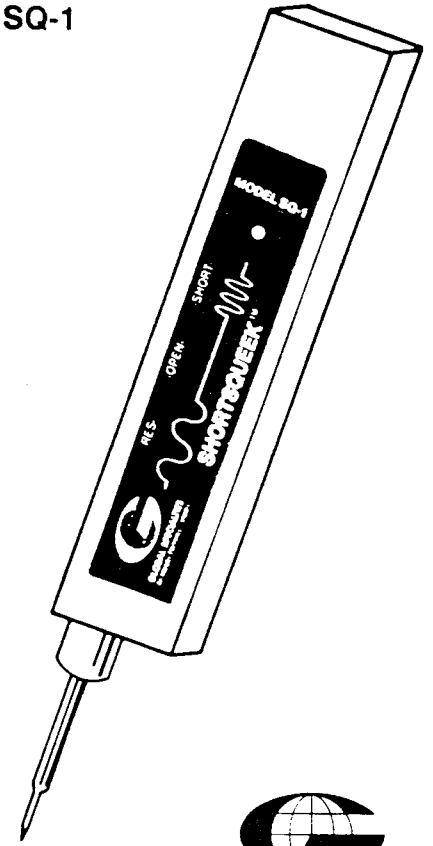
GLOBAL SPECIALTIES®
An Interplex Electronics Company
70 Fulton Terrace, P.O. Box 1942
New Haven, Connecticut 06509
(203) 624-3103 • FAX (203) 468-0060

Specifications subject to change without notice.

MADE IN USA

SHORTSQUEEK™

MODEL SQ-1



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GLOBAL SPECIALTIES
An Interplex Electronics Company

SHORTSQUEEK is a unique type of "audible" tone ohmmeter that simplifies finding shorts on PC boards, baokplanes, or complex hard wire assemblies. It does this by responding, via a shift in tone frequency, to very small changes in resistance that conventional ohmmeters can't cope with. Most important, Shortsqueek significantly reduces the time it takes to locate those hard to find shorts.

INITIAL CHECK:

Connect the plug from the AC adaptor to the jack on the rear of the SHORTSQUEEK. Plug the adaptor into a 115 VAC outlet and short the reference lead to the probe tip by pressing them firmly against a metal object such as a coin. (See Figure 1) You should hear a high pitched tone (approximately 4 kHz). If you separate the tips the SHORTSQUEEK should become silent.

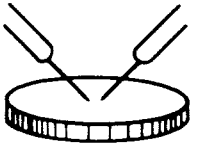

FIGURE 1.

Next take a three foot long piece of wire or solder, hold the reference lead and probe tip against the wire as shown in Figure 2, and then slowly slide them apart. The pitch of the tone should drop noticeably as the probes slide further apart along the wire (typically from 4 kHz to 1 kHz). This demonstrates the ability of SHORTSQUEEK to sense very small changes in resistance, and to indicate this through changes in an audible tone.

FIGURE 2.

APPLICATIONS:

Typically you have found that two points are electrically shorted together, and you need to determine the physical location of the short. You may be working with a bare board which has a small, almost invisible metal "whisker" between two runs, or a fully loaded board with a tiny solder bridge. Perhaps the fault may be located underneath an IC, or on a hard-wired backplane where an interconnecting wire has been pinched beneath a piece of hardware and is shorted to ground. Another common application is the location of a failed, shorted component such as a shorted bypass capacitor on a PC board. Typically there are dozens of these on a large board, and locating the bad one usually results in removing and often discarding many good ones in a trial and error approach. SHORTSQUEEK allows you to quickly determine the location of the bad capacitor, and replace it without disturbing dozens of good components.

There are many other applications for SHORTSQUEEK which will become apparent the more you use it, and understand its principles of operation.

USE:

Once you have located the pair of shorted conductors, begin by placing the SHORTSQUEEK reference lead on one of the shorted paths (this will often be the ground side of the circuit). Place the probe tip anywhere along the other conductor and note the tone from the SHORTSQUEEK. Now move the probe tip to another nearby point on that same conductor and note whether the pitch of the tone has become higher or lower. If it has become higher you are moving in the direction of the short and should continue in that direction. If the new tone is lower you are moving away from the location of the short, and should move in the other direction. Continue moving the probe tip along the conductor in the direction which caused the pitch of the tone to rise until the pitch just begins to drop, indicating you have passed the location of the short. Usually the physical cause of the short becomes obvious at this point since the location has been narrowed to a very small area.

In some cases it may be helpful to now move the reference probe along its conductor just as was done with the probe tip. This will eventually allow you to pinpoint the short very accurately, as it will fall between the two probes once both are moved to give the highest pitch tone.

HELPFUL HINTS:

In some cases it is impractical to slide the probe tip along the clad due to conformal coatings, etc. In such cases step along the clad in small increments, pressing firmly to penetrate any coatings.

Thick clads or larger conductors will yield less of a pitch change than thinner ones. In these cases it is important to listen very closely to detect the direction of the change in pitch.

SPECIFICATIONS:

Power	6 to 20 VDC * 50 mA, filtered.
Tone Shift	1200 to 4000 Hz, typical.
Range	1 ohm to 0.01 ohm, typical.