



SOUND ADVICE 2.0







Thank you for downloading *Sound Advice* from *Palmetto Logic*TM. We hope you find this application to be a valuable reference tool on your holy quest for the perfect sound.

Your registration will entitle you to future upgrades as well as e-mail support free of charge, for a period of three years. It will also help support our efforts to continue providing you with quality applications for your handheld computer.

Contents

	<u>Page</u>
1.0 Icons	2
2.0 Main Screen	2
3.0 Sound Advice	2
3.1 Advice Topic list view	
3.2 Bookmark list view	
3.3 Advice view	
3.4 Note view	
4.0 Terminology	3
4.1 Terminology list view	
4.2 Definition view	
5.0 Reference Charts	4
5.1 Combined speaker impedance	
5.2 Recommended speaker cable lengths	
5.3 Wire Size Conversion	
5.4 Common value multipliers	
5.5 Music scale frequencies	
6.0 Calculators	5
6.1 Volt, Ohm, Amp, Watt calculator	
6.1.1 Configurations	
• Current and Voltage	
• Current and Resistance	
• Voltage and Resistance	
• Power and Voltage	
• Power and Current	
• Power and Resistance	
6.2 RMS, Average, Peak converter	
7.0 Development Notes	6

1.0 Icons (available at the top of various screens)

	Home:	Returns to the main screen. (Available on most screens which are more than one tap away from the main screen).
	Top of list:	Returns to the top of the list in any <i>list view</i> .
	Beam note:	Beams an attached note to another Sound Advice user. (Only available in the <i>Notes view</i>).
	Delete:	Permanently deletes the current record.
	Help:	Help for the active screen.
	About:	Additional information about Sound Advice.

2.0 Main Screen

This screen is the "switchboard" of the application. Each section of the program is accessible from here. This manual will explain each of these sections in the same order it appears on the main screen.



3.0 Sound Advice

3.1 Advice Topics list view

Tapping on the **Sound Advice** button from the main screen opens the *Advice Topics list view*. In this view, you will see a scrollable list of topics available labeled **Related topics**. This list can be scrolled either up or down using the handheld's up and down hardware buttons or by tapping the on-screen up or down arrows to the lower right of the list. Initially, all topics are available. At the top of this list is a 'pop-up' control labeled **Question**. Tapping on this pop-up control will bring up scrollable list of available questions. Select the desired question from this list. The list of topics will now include only those topics related to the selected question. Tap on one of these topics to open the *Advice view*.

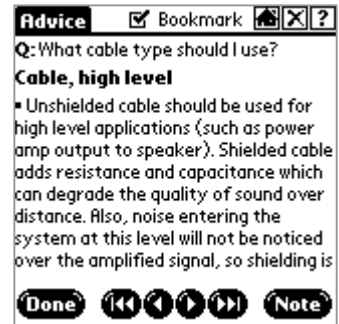


3.2 Bookmark list view

Tapping on the **Bookmarks** button at the bottom of the *Advice Topics list view* provides a list view of only bookmarked topics. Tap on one of these topics to open the *Advice view*.

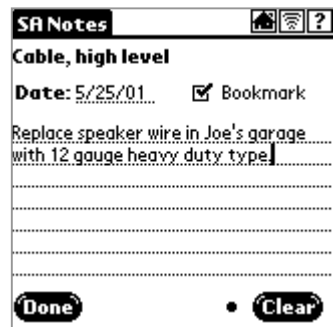
3.3 Advice view

In this view, detailed advice on the selected topic may be viewed as well as any other topic in the database. If there is more text than will fit on the screen, the text may be scrolled up and down by selecting (tapping) the main text field and using the handheld's up and down hardware buttons. The symbol « marks the end of each page. The topics are sorted by question, so tapping on the **previous record** and **next record** buttons allow viewing other topics related to the selected question. Tapping on the **first record** button will take you to the first record in the database. Tapping on the **last record** button will take you to the last record in the database. Tap on the **Note button** to attach a note to the current topic. Tap on the **Bookmark** check box to bookmark the current topic.



3.4 Note view

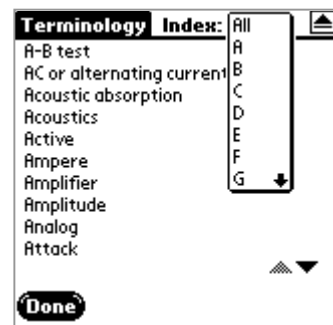
In this view, a personal note may be entered which will be 'attached' to the current advice topic. Tap in the **Date** field to bring up a calendar. Tapping on a date in the calendar will enter the selected date in the date field. (Tap on the calendar's **Today** button to enter the current date). Tap on the **Bookmark** check box to bookmark the active record (this is useful for filtering and/or flagging which advice topics have notes attached). The bookmark will also be visible in the *Advice view* and *Advice Topic list view*. These notes may be beamed to other Sound Advice users by tapping the **Beam** icon in the upper right area of the screen. Tap the **Clear** button to permanently delete the note along with the date. (This will also clear the **Bookmark** check box).



4.0 Terminology

4.1 Terminology list view

Tapping on the **Terminology** button in the main screen opens the *Terminology list view*. In this view, you will see a scrollable list of over 200 items. The list can be scrolled up or down using either the handheld's up and down hardware buttons or by tapping on the up or down arrows to the lower right of the list. At the top of this list is a 'pop-up' control labeled **Index**. Tapping on this pop-up control will bring up a scrollable, alphabetical index. Select any letter in this index to limit the list of terms to those beginning with the selected letter. Selecting one of these terms will open the *Definition view*.



4.2 Definition view

In this view, the term selected from the *Terminology list view* is defined. If there is more text than will fit on the screen, the text may be scrolled up and down by selecting (tapping) the main text field and using the handheld's up and down hardware buttons. The symbol « marks the end of each page. The record navigation buttons (**first record**, **previous record**, **next record**, and **last record**) allow viewing other definitions in the database. Definitions are sorted in alphabetical order.



5.0 Reference Charts

5.1 Combined speaker impedance

This chart can be used to find the combined parallel impedance of almost any speaker combination. To find combined impedance, select one impedance from the top of the chart and one from the left side. (Values shown separated by a colon represent parallel combinations). Where the row and column intersect is the combined parallel impedance. For example, two 16 ohm speakers in parallel (last column) combined with an 8 ohm speaker (2nd row) would result in a combined impedance of 4 ohms. (For series combinations, simply add all the impedances of each speaker connected in series).

Combined Spkr. Imped.		Combined Parallel Impedances										
		ohms	∞	16	4:4	4:8	4:16	8:8	8:16	16:16		
4	2	2.7	3.2					2	2.3	2.7		
8	2.7	4	5.3				2	2.3	2.7	3.2	4	
16	3.2	5.3	8			2.3	2.7	3.2	4	5.3		
4:4												
4:8		2	2.3									
4:16		2.3	2.7						2	2.3		
8:8	2	2.7	3.2						2	2.3	2.7	
8:16	2.3	3.2	4						2	2.3	2.7	3.2
16:16	2.7	4	5.3			2	2.3	2.7	3.2	4		

= Not recommended
 = Use caution; verify minimum amp impedance

5.2 Recommended cable lengths

This chart can be used to find the maximum recommended speaker cable length useable without excessive loss of power. To determine this length, select the load impedance from the top of the chart and the speaker wire gauge from the left side. Where the row and column intersect is the maximum recommended cable length in feet.

Recommended Cable Length					
Maximum Cable Lengths (Limits power losses to 10% or less)					
		Load (Ohms)			
		2	4	8	16
Wire gauge	12	50	100	200	400
	14	25	50	100	200
	18	15	30	60	120
	20	10	20	40	80
	24	6	12	24	48

Lengths shown in feet

5.3 Wire Size Conversion

This chart can be used to cross-reference equivalent wire sizes from AWG (American wire gauges) and CSA (cross-sectional area; in sq. mm.). This chart's range covers most any wire size that is likely to be encountered in audio applications.

Wire Size Conversions			
AWG	CSA	AWG	CSA
8	8.35	16	1.31
9	6.62	17	1.04
10	5.27	18	0.823
11	4.15	19	0.653
12	3.31	20	0.519
13	2.63	21	0.412
14	2.08	22	0.325
15	1.65	23	0.259
		24	0.205

5.4 Common value multipliers

This chart shows the common multipliers for most electronic values, used in audio applications.

Examples:

100 picoFarads = 100 Farads x 10⁻¹² or .000000000100 Farads
 10 KiloHertz = 10 Hertz x 10³ or 10,000 Hertz
 1 MegaOhm = 1 Ohm x 10⁶ or 1,000,000 Ohms

Common Multipliers		
Prefix	Abbr.	Multiplier
pico-	p	10 ⁻¹²
nano-	n	10 ⁻⁹
micro-	μ	10 ⁻⁶
milli-	m	10 ⁻³
kilo-	K	10 ³
mega-	M	10 ⁶
giga-	G	10 ⁹
tera-	T	10 ¹²

5.5 Music Scale Frequencies

This chart shows the equivalent audio frequencies in Hertz (or cycles per second) for each pure note on the music scale.

Music Scale > Frequency (Hz)		
Low	Middle	High
A 27.50	C 130.81	G 783.99
B 30.87	D 146.83	A 880.00
C 32.70	E 164.81	B 987.77
D 36.71	F 174.61	C 1046.50
E 41.20	G 196.00	D 1174.66
F 43.65	A 220.00	E 1318.51
G 49.00	B 246.94	F 1396.91
A 55.00	C 261.63	G 1567.98
B 61.74	D 293.66	A 1760.00
C 65.41	E 329.63	B 1975.53
D 73.42	F 349.23	C 2093.00
E 82.41	G 392.00	D 2349.32
F 87.31	A 440.00	E 2637.02
G 98.00	B 493.88	F 2793.83
A 110.00	C 523.25	G 3135.96
B 123.47	D 587.33	A 3520.00
	E 659.26	B 3951.07
	F 698.46	C 4186.01

6.0 Calculators

6.1 Volt, Ohm, Amp, Watt calculator

Calculates volts, ohms, amps, and watts based on two known variables.

6.1.1 Configurations

In order to find unknown values of voltage, current, resistance, or power; two of these variables must first be known. Select the button for the two known variables to bring up the calculator configured for finding the two remaining variables.

- **Current and Voltage**

Enter the known values of current (amps) and voltage (volts). Tap on the **Calculate** button to calculate power (watts) and resistance (ohms). Tap on the **Clear** button to clear all fields.

- **Current and Resistance**

Enter the known values of current (amps) and resistance (ohms). Tap on the **Calculate** button to calculate voltage (volts) and power (watts). Tap on the **Clear** button to clear all fields.

- **Voltage and Resistance**

Enter the known values of voltage (volts) and resistance (ohms). Tap on the **Calculate** button to calculate current (amps) and power (watts). Tap on the **Clear** button to clear all fields.

- **Power and Voltage**

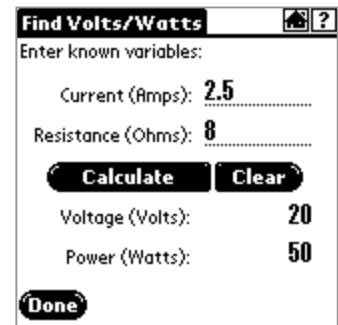
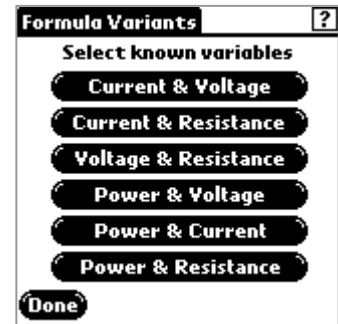
Enter the known values of power (watts) and voltage (volts). Tap on the **Calculate** button to calculate current (amps) and resistance (ohms). Tap on the **Clear** button to clear all fields.

- **Power and Current**

Enter the known values of power (watts) and current (amps). Tap on the **Calculate** button to calculate voltage (volts) and resistance (ohms). Tap on the **Clear** button to clear all fields.

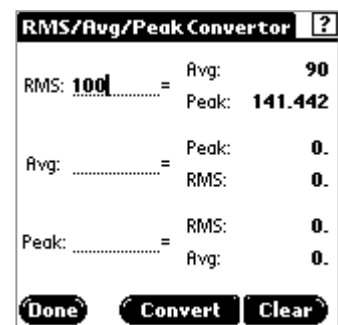
- **Power and Resistance**

Enter the known values of power (watts) and resistance (ohms). Tap on the **Calculate** button to calculate voltage (volts) and current (amps). Tap on the **Clear** button to clear all fields.



6.2 RMS, Average, Peak Converter

This calculator converts between RMS (root mean square), average, and peak values. Enter a known value in any of the three fields on the left (**RMS, Average, or Peak**). Tap on the **Convert** button to convert the entered value(s) to the equivalent values on the right. Tap on the **Clear** button to clear all fields. *These conversions apply to any unit of AC waveform measurement (i.e. volts, amps, watts, etc.)*



7.0 Development Notes

Known bug: Search function:

When performing a search via the standard Palm operating system search function, the *Definition view* or *Advice view* must be active for the operating system to search within each database. Otherwise, an error message will result. This is a known bug, which should be corrected in a future release. Successful searches will show only the first matching record number in the *Find* screen. Tapping on this number will open the corresponding record.