

EIT product: Cell Phones Compatible with Hearing Aids

Why:

Cell phones are used for voice communication by persons with and without disabilities. Only a few cell phones meet Section 508 and Section 255 requirements.

Acquisition: (GSA schedule vendors, special contracts, off the shelf);

Be Aware Of

The FCC (Federal Communications Commission) has mandated that cell phones be rated as to how much interference they are likely to cause to hearing aids. The FCC defines Hearing Aid Compatibility (HAC) for cell phones in terms of radio-frequency (RF) emissions—the “M” (microphone) rating, and telecoil coupling—the “T” (t-coil) rating. The rating scale ranges from 1 to 4. The four possibilities are: M1 or T1 (poor), M2 or T2 (fair), M3 or T3 (good) and M4 or T4 (excellent).

Conforming Products

Sprint

Hearing Aid Compatibility

Sprint Nextel provides a number of wireless phones that have been measured and rated for use with hearing aid devices. These ratings have been developed to assist hearing aid device users in finding phones that may be compatible with their particular hearing aid devices.

See: http://www2.sprint.com/mr/gp_dtl.do?id16=Deaf&article=341

Verizon

<http://aboutus.vzw.com/accessibility/products.html>

<http://aboutus.vzw.com/accessibility/digitalPhones.html>

Verizon provides its solution through the Verizon Center for Customers with Disabilities (VCCD)

Information 1 800 974-6006 (Voice/TTY)

<http://aboutus.vzw.com/accessibility/resources.html#vccd>

T-Mobile

T-Mobile offers the following hearing-aid compatible cell phones. All of these handsets are rated at M3 or better.

Blackberry 8705G

Motorola RAZR V306

MOTORAZR2 V8

Motorola W490

Nokia 6133H

RIM 8320 Curve
 Samsung T219
 Samsung t409
 Sidekick LX

See http://www.t-mobile.com/Company/Community.aspx?tp=Abt_Tab_Safety&tsp=Abt_Sub_TTY_Policy

ATT

ATT offers the following hearing-aid compatible cell phones.
<http://www.wireless.att.com/about/disability-resources/hearing-aid-compatibility.jsp>

Make	Model	SKU#	Rating	Where to Purchase
LG	C2000	63986	M3, T3	NCCD (ATT National Center for Customers with Disabilities – 1-866-241-6568 (voice), 1-866-241-6567 (TTY))
Motorola	V3i/ V3r	64449 64626	M3, T3	NCCD
Samsung	ZX20	64577	M3, T3	NCCD
Samsung	A707 Gray A707 Gray AT&T A707 Red A707 Red AT&T A707 Blue A707 Blue AT&T	64627 64661 64639 64663 64638 64662	M3	NCCD www.wireless.att Company Owned Stores
LG	CU400	64576	M3, T3	NCCD www.wireless.att Company Owned Stores
Motorola	V3xx Dark Gray V3xx AT&T	64631 64667	M3, T3	NCCD www.wireless.att Company Owned Stores

Dark Gray 64641
V3xx Gold 64666
V3xx Gold 64692
AT&T 64726
V3xx Platinum 64579
V3xx Bubble
Gum Pink
V3xx Red

Samsung	A717		M3	NCCD www.wireless.att Company Owned Stores
Nokia	6085	64687	M3, T3	NCCD www.wireless.att Company Owned Stores
Nokia	6555 Black	64731		NCCD
	6555 Red	64767	M3, T3	www.wireless.att
	6555 Gold	64766		Company Owned Stores
Sony	Z310a Black	64732		NCCD
Ericsson	Z310a Pink	64733	M3	www.wireless.att Company Owned Stores
LG	CE110	64736	M3, T3	NCCD www.wireless.att Company Owned Stores
RIM	Curve 8310			NCCD
	Titanium	64768		www.wireless.att
	Curve 8310	64470	M3, T3	Company Owned Stores
	Red			
Motorola	V3 Blue	64757		NCCD
	V3 Black	64758	M3, T3	www.wireless.att
	V3 Pink	64754		Company Owned Stores
Sony	W580i White	64734	M3, T3	NCCD

Ericsson	W580i Gray	64735		www.wireless.att
	W580i Black	64745		Company Owned Stores
LG	CU515	64743	M3, T3	NCCD www.wireless.att
				Company Owned Stores
Samsung	A737			
	Blue/Steel	64746		NCCD
	A737 Red	64748	M3, T3	www.wireless.att
	A737 Orange	64747		Company Owned Stores
	A737 Lime	64771		
Samsung	A747 SLM			NCCD
	Brown	64772	M3	www.wireless.att
	A747 SLM Blue	64789		Company Owned Stores

Section 508 Applicable provisions:

§ 1194.23 Telecommunications products.

- (a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.
- (b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.
- (c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.
- (d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.
- (e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.

- (f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.
- (g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.
- (h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.
- (i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.
- (j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.
- (k) Products which have mechanically operated controls or keys, shall comply with the following:
 - (1) Controls and keys shall be tactilely discernible without activating the controls or keys.
 - (2) Controls and keys shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2 N) maximum.
 - (3) If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.
 - (4) The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

§ 1194.25 Self contained, closed products. (Non Voice Features)

- (a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not assistive technology.
- (b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.
- (c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).
- (g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
- (h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.
- (i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

§ 1194.26 Desktop and portable computers. (Non Voice Features)

- (a) All mechanically operated controls and keys shall comply with §1194.23 (k) (1) through (4).
- (b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).