

Mobile Phone Access Evaluation- Voice Dialer Comparison



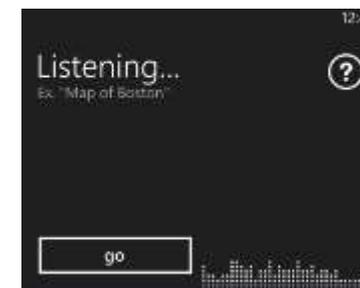
Siri



Google Now Voice Actions



Android Voice Dialer



Windows Phone Speech

At a glance				
Description	Voice Control software for iPhones	Voice Control software for Android phones	Voice Control software activated by Bluetooth headset for Android phones	Voice Control software for Windows smartphones
What it primarily does	Initiates phone calls, SMS, control of other phone Apps and internet search using voice	Initiates phone calls, SMS, control of other phone Apps and internet search using voice	Initiates phone calls	Initiates phone calls, SMS, control of other phone Apps and internet search using voice
How it is used	Hold home button and voice commands	Tap screen and voice commands	Voice Commands	Tap screen and voice commands
Setup required for each use	Hold home button for 2 seconds (or tap on microphone button if previously opened) and use voice command	Swipe up from bottom of screen to open Google Now, or tap microphone on Google Now widget.	Can only be used when Bluetooth headset is connected. Voice Dialer is activated by the headset.	Hold down on home key to activate. Can also be activated using a Bluetooth headset.
Phone calls- method of:				
Dialing- contact in phone book	<ol style="list-style-type: none"> 1. Hold home button for 2 seconds or activate headset if available 2. Say 'call [contact name] [mobile/home etc]' 3. Select correct contact by voice (if more than one match found) or tap contact 	<ol style="list-style-type: none"> 1. Tap microphone icon 2. Say 'call [contact name] [mobile/home etc]' 3. Tap correct contact (if more than one match found) 	<ol style="list-style-type: none"> 1. Activate headset 2. Say 'call [contact name]' 3. Say 'OK' 	<ol style="list-style-type: none"> 1. Hold down on home key or activate headset if available. 2. Say 'call [contact name] [mobile/home etc]' 3. Select correct contact by voice (if more than one match found)
Dialing- phone number	<ol style="list-style-type: none"> 1. Hold home button for 2 seconds or activate headset if available 2. Say 'call [numerals of phone number]' 	<ol style="list-style-type: none"> 1. Tap microphone icon 2. Say 'call [numerals of phone number]' 	<ol style="list-style-type: none"> 1. Activate headset 2. Say 'call [numerals of phone number]' 3. Say 'OK' 	<ol style="list-style-type: none"> 1. Hold down on home key or activate headset if available. 2. Say 'call [numerals of phone number]'

	Siri	Google Now Voice Actions	Android Voice Dialer	Windows Phone Speech
Answering	Doesn't assist with answering- Tap button on phone screen, or activate headset (if available)	Doesn't assist with answering- Tap button on phone screen, or activate headset (if available)	Doesn't assist with answering- Tap button on phone screen, or activate headset (if available)	Doesn't assist with answering- Tap button on phone screen, or activate headset (if available)
Hanging up	Doesn't assist with hanging up- Tap button on phone screen, or activate headset (if available)	Doesn't assist with hanging up- Tap button on phone screen, or activate headset (if available)	Doesn't assist with hanging up- Tap button on phone screen, or activate headset (if available)	Doesn't assist with hanging up- Tap button on phone screen, or activate headset (if available)
SMS- Method of:				
Creating/ sending	1. Hold home button for 2 seconds or activate headset if available 2. Say 'SMS [contact] [message]' 3. Say 'send' or tap message to edit using on screen keyboard.	1. Tap microphone icon 2. Say 'sms [contact] [message]' 3. Tap 'send' or tap message to edit using on screen keyboard	Doesn't assist with reading SMS- use touch screen.	1. Hold down on home key or activate headset if available 2. Say 'text [contact]' 3. Dictate message. 4. Voice commands to send, add more to message or try again.
Reading	1. Hold home button for 2 seconds 2. Say 'Read me my texts' (reads unread messages only)	Doesn't assist with reading SMS- use touch screen.	Doesn't assist with reading SMS- use touch screen.	Incoming SMS can be set to be read aloud on phone speaker (or Bluetooth headset) - controlled using voice.
Control of other phone functions:				
Music	✓ Say 'play [music]'	✓ Say 'play [music]' then tap song	X	X
Camera	X Opening App only	X Opening App only	X	X
Photos	X Opening App only	X Opening App only	X	X
Phone settings	X Opening App only	X	X	X
Other	Various App functions including internet search, starting navigation, setting calendar entry, setting reminder, launching Apps	Various App functions including internet search, starting navigation, setting calendar entry, setting reminder, launch Apps	X	Various App functions including internet search, setting calendar entry, setting reminder, launch Apps
Speaker used:				
Earpiece	N/A	N/A	✓	N/A
Speaker kit	N/A	N/A	✓	N/A
Phone's speaker	✓	✓	Can select phone audio or loudspeaker by tapping phone.	✓
Microphone used:				
Earpiece/ speaker kit's microphone	N/A	N/A	✓	N/A
Phone's microphone	✓	✓	Can select this by tapping phone.	✓

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Mounting/ positioning				
Positioning of device	N/A	N/A	N/A- software. Headset needs to be used for this software.	N/A
Positioning of phone	So user can touch screen and hear voice prompts. So phone can hear voice commands. Maximum distance: arm's length from user.	So user can see and touch screen, so phone can hear voice commands. Maximum distance: arm's length from user.	No need to see or touch screen- activated by headset, and has voice prompts.	So user can touch screen, so phone can hear voice commands (unless Bluetooth headset used). Maximum distance: arm's length from user.
Other positioning/ setup requirements	Needs internet connection. Siri may not be available in all languages or in all areas, and features may vary by area.	Needs internet connection	Bluetooth headset needs to be positioned for user, within Bluetooth range of phone (approx. 10m).	Internet connection not required to dial contacts stored on phone or a phone number. Internet connection (and permission to share information) required for other voice commands. Audio prompts given, so user does not need to see screen.
Compatible phones				
iPhone	✓ iPhone 4S and later	X	X	X
Android Smartphone	X	✓	✓	X
Windows Smartphone	X	X	X	✓
Basic mobile phone (not touchscreen)	X	X	X	X
Interaction with phone				
Potential for other methods of using phone at the same time	Can still use touch screen as normal	Can still use touch screen as normal	Can still use touch screen as normal	Can still use touch screen as normal
Use of device when phone is on standby or locked	Phone needs to be awake and unlocked to access Siri	Phone needs to be awake and unlocked to access this App	Headset can activate Voice Dialer when phone is on standby/ locked.	Can be activated when phone is locked (but not on standby). Can be activated using Bluetooth headset when on standby/locked.
Battery and power				
Method for turning on /off software	Hold home button for 2 seconds or tap on microphone button if previously opened	App can be opened by swiping up from bottom of screen, or displayed on home screen as a widget.	Software only turned on using headset (and Widget if using). Can be turned off by pressing back or home key.	Hold down on home key or activate Bluetooth headset.

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Performance and reliability				
Worked as specified on all testing occasions	Accurately recognised 'Call Ability Technology' on 3/3 occasions. Accurately sent an 'SMS [contact] hello this is a test of voice control' on 3/3 occasions.	Accurately recognised 'Call Ability Technology' on 3/3 occasions. Misheard another contact on one occasion. Accurately sent an 'SMS [contact] hello this is a test of voice control' on 2/3 occasions	Accuracy partly depended on quality of headset and number of similar contacts in phone book. Accurately recognised contact on 3/3 occasions using Australian Q2 headset, and using American Q3 and on a phone with minimal contacts. Accuracy poor using American Q3 headset on phone with many contacts.	Accurately recognised 'Call Ability Technology' on 3/3 occasions. Accurately sent SMS to contact on 3/3 occasions.
Issues noted		Occasional mishearing of voice commands. This requires saying command again, or tapping screen to edit error.	Poor accuracy with some headsets.	Occasional mishearing of voice commands. This requires saying command again, or tapping screen to edit error.
Phones tested on	iPhone 4S with iOS 6.1.3 iPhone 5 with iOS 6.1.3	Nexus 4: Android 4.3 Asus FonePad tablet: Android 4.1.2	Nexus 4: Android 4.3 Asus FonePad tablet: Android 4.1.2	Nokia Lumia Windows Phone: Lumia Amber operating system
Purchasing				
Cost	Free	Free	Free	Free
Manufacturer/main supplier details	Built in to iOS operating system	Built in to Android operating system	Built in to Android operating system	Built in to Windows Phone operating system
Other products required	Compatible iPhone	Android smartphone	Bluetooth headset	Windows smartphone
Notes				
Comments	Requires holding down home key to make a phone call. Siri can be activated using Assistive Touch menu Say "What can you do for me?" or tap the "i" in the right corner of the screen when Siri is opened, for list of available commands. Requires internet access	Reduces need to tap touch screen for many phone tasks, however user still needs to be able to tap screen to initiate voice commands or make selections if required. Requires tapping the screen at least once to make a phone call. Making a phone call without further screen taps requires saying all the contact's details e.g. 'call [contact] mobile' Thoughtful naming of contacts could improve accuracy and narrow down selections required. Requires internet access	Voice Dialer is a different system to Google Now Voice Actions- the voice control system accessed via the touch screen. Voice Dialer is only activated when using a Bluetooth headset. Unlike Google Now Voice Actions, Voice Dialer allows the user to make selections from different options using their voice (e.g. choose a contact's mobile or home phone) and asks for confirmation (by voice) before placing the phone call. Accuracy best with internet connection.	Reduces need to tap touch screen for many phone tasks, however user still needs to be able to tap screen to initiate software. Requires tapping the screen once to make a phone call. Able to select from further options using voice. Thoughtful naming of contacts could improve accuracy and narrow down selections required. Requires internet access for some functions.

General notes regarding Voice Dialing

- User needs to have clear speech with adequate volume to use voice control.
- Accuracy of speech recognition is improved with fewer contacts in the phone book, as there are less potential matches that may sound similar.
- Accuracy of speech recognition is worse in noisy environments.
- Recognition errors tend to be repeated (e.g. the software mishears the same contact repeatedly, or suggests the same incorrect contact each time). Errors tend to relate to contacts with similar sounding names. Therefore, renaming commonly-mistaken contacts may improve accuracy. Try to choose a name that doesn't sound like another contact. Longer words tend to be understood more accurately.

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