



Jabra GN

Jabra Engage Series

Improving DECT density in the office

Exclusive, industry-leading technology that gives increased flexibility for your wireless deployments

GN Making Life Sound Better





The challenge: wireless headsets in the open office

Customer satisfaction is increasingly challenged as customer calls get longer and more complex. This, combined with the continued reduction of personal space, makes the call centric open office an even more intense place.

The number of headsets that can be used in a given area depends on the area size, the furnishing of the office such as furniture, carpets, curtains, walls dividers, etc. In addition, the

average distance of headset-to-base, the presence of metal objects or large glass surfaces, and headset settings, can also negatively impact headset use.

If a large number of wireless headsets are used within a limited area, such as an open office, users may experience less-than-optimal audio quality due to density (capacity) issues.

The solution: class-beating DECT wireless performance for better customer connections.

Jabra Engage is engineered to be an entirely new class of DECT wireless professional headset. Engage offers industry-leading wireless performance, with a range up to 150 meters/490 feet.

With Engage you can connect 3x as many users, without impacting the call experience. Density capacity has been boosted to give you a wireless connection that won't let you, or your customers, down.

3x the number of users.

0% negative impact on calls.

Forty Jabra engineers spent over 115,000 hours developing Engage, and registered four new patents in the process.

Jabra Engage is now supporting customer satisfaction with a professional DECT solution that enables the end user and IT manager to focus on their customer calls rather than on technical issues.

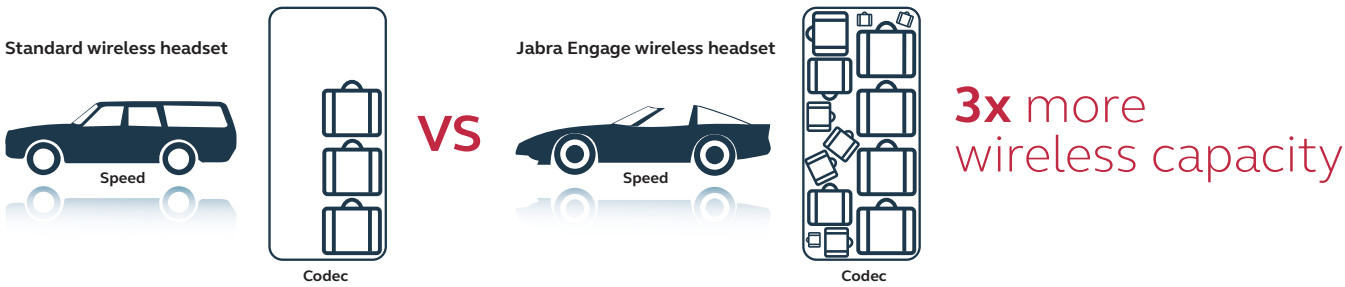
How: Introducing the Jabra Engage solution

Jabra Engage features advanced codecs that compress data more efficiently using the DECT wireless frequency. Audio signals are transported in the exact size needed, instead of a standard size, and at a faster bit rate. This means that

Jabra Engage can transport more radio signals, and at a faster speed, than comparable products using the same number of radio channels.

Wireless density comparison

Imagine headsets are cars. Jabra Engage can transport more luggage with the same trunk size and can do it faster than a standard wireless headset with even better security.

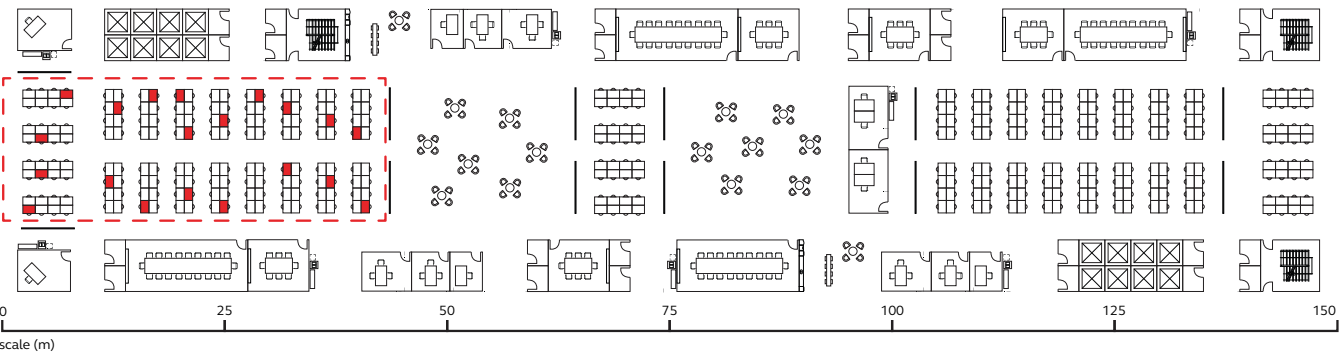


Jabra Engage delivers 3x the wireless density in wideband

Wireless density	Headset model/series	Jabra Engage Series	Jabra Pro 9400 Series	Jabra Engage Series	Jabra Pro 9400 Series
	Frequency	wideband	wideband	narrowband	narrowband
	Number of active users	▼	▼	▼	▼
	EU	160	40	210	80
	US	80	20	105	40
	Japan	60	9	80	18

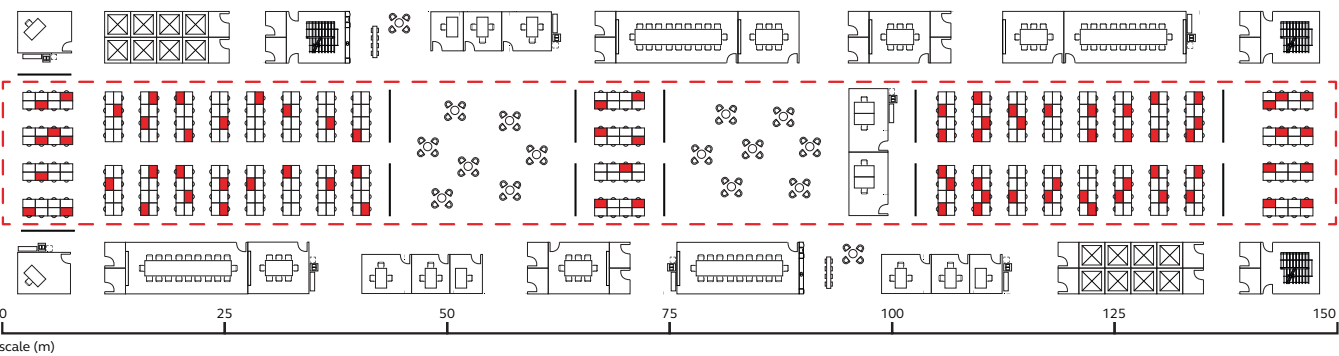
Jabra Pro 9400 or other wireless headset office set up with 20 active users

Wideband, North America



Jabra Engage office set up with 80 active wireless users

Wideband, North America



The above charts are for illustration only, and show theoretical full capacity wideband wireless use as deployed in North America. In actual use, floors/ceilings, materials and other users can influence signal density.

Every deployment is unique, so please contact your Jabra representative who will be able to guide you through the specifics of your business' deployment.

How to plan

Previously, large-scale DECT installations have relied on detailed deployment planning, taking into account many factors regarding layout. The new generation of Jabra Engage DECT wireless headsets simplifies this process.

The purpose of the planning process is to define a headset deployment layout that ensures a signal-to-noise ratio above the threshold for good audio quality, to avoid interference in a limited space. The result is a layout that defines the average distance between headsets and the average area per headset. These figures are a function of the size of the area, the average distance from headsets to base, and the technology employed.

Note that the short (10m/30ft) or medium (30m/100ft) range settings* improve density performance. At the same time, however, the actual useful range of the headset is reduced, which limits freedom of movement for the user. Managing user expectations in such situations could be difficult.

Another viable approach in high-density installation is to use different technologies, including traditional wired headsets, wireless DECT and Bluetooth® headsets, in the same area.

In this case, please be aware that there are also range differences between various products.

Considerations	
Building layout and isolated areas	Identify the areas where headsets are to be deployed. An area is a separate, isolated office space and needs to be considered one at a time. Determine the area size in square meters or square feet.
Number of headsets per area	Check whether the required number of headsets exceeds the limits per area stated on page 6.
Office furnishing	Office furnishing - the so-called “clutter factor” - has perhaps the biggest impact on the density. The worst situation - from a density perspective - is a sparsely furnished, line-of-sight office where every radio signal is heard by everyone. The best situation is a heavy furnished office with cubicles, carpets and acoustically dampened ceilings. The differences in density due to the office furnishing can be as large as a factor of four.
Average distance between headset and base, and user mobility	These are important factors that affect planning. The average distance between headset and base is typically less than 2m/7ft. It makes however little difference if only few users are roaming.
Special DECT considerations	 Wideband Audio The use of wideband audio reduces the maximum number of headsets in a given area.  Range Configuration Jabra DECT products have a configuration option called Range Setting that reduces the range and radio signal strength. The ‘Short’ (10m / 30ft) and ‘Medium’ (30m / 100 ft) power settings* will improve the density performance. Note that when this option is used, all products in the planned area must be set in the same way.  Headset Utilization For DECT we recommend planning with 100% headset utilization. DECT uses a part of a channel even when there is no call. A lack of an available channel - which could happen if there are more calls than the average utilization planned for - will result in a loss of communication between a headset and a base. Therefore DECT planning process should always assume 100% headset utilization.
Bluetooth® considerations for mixed deployments of DECT and Bluetooth®	 WiFi Coexistence Bluetooth® must be used with care if WiFi (specifically 2.4 GHz IEEE 802.11b, g, or n networks) is being used. Using WiFi reduces the number of available channels. You are advised to use WiFi in 5 GHz to avoid interference with Bluetooth®.  Headset Utilization The amount of time in which headsets will be utilized - e.g. if users are on the call all the time vs. 50% of the time - makes a significant difference when using Bluetooth®. If the actual utilization exceeds the planned average utilization, a Bluetooth® headset will still be able to communicate with a base, although with some loss of audio quality.  Bluetooth® range setting affects site planning only to a minor extent. This is because long-range Bluetooth® products (so-called “Class 1” products) employ Dynamic Radio Transmit Power Management, which adjusts the radio signal in the headset relative to the distance between headset and base, thus reducing the impact on other wireless headset users. Manual reduction of the range on a Class 1 product to ‘Low’ or ‘Very Low’ will however limit the freedom of movement for the user and as a consequence also improve the density performance. The Jabra Engage 75 is a Bluetooth® “Class 2” product.

* Jabra Engage settings only

Why DECT makes sense

Capacity issues apply to all wireless technologies because the number of available radio channels is limited. This is especially true if several short-range radio transmitters are operating at the same time and at the same frequency, and if the number of headset units exceeds the number of available channels.

Both DECT and Bluetooth® technologies seek to maximize the number of available channels by employing sophisticated methods to reduce the likelihood of simultaneous transmission on the same channel.

For DECT technology a channel reuse will automatically occur, in which a channel that is “farthest away” is used. To ensure the distance is sufficient for good audio quality, the planning process must impose minimum limits on area per headset. Ideally, this distance will be a given and be a known figure, but in reality each office differs. Reflections due to metal panels

could decrease the number of headsets, while cubicles with heavy fabric will absorb radio signals and allow more headsets. **It is important to note, however, that DECT uses a dedicated and exclusive frequency band, allowing for more users and less potential interference – a feature not shared with Bluetooth®.**

DECT delivers:

- better density
- better range
- better battery life with Jabra Engage
- better sound quality, with a reserved frequency band
- better security with Jabra Engage



DECT deployment: simple rules of thumb

Because of the many factors involved in the planning, we recommend that you contact Jabra Technical Support if the number of headsets exceeds the simple density limits indicated below.

Jabra engineers can calculate areas and provide recommendations based on product-specific planning data. Due to the many factors involved, the figures below should be treated as a moderately conservative guidance.

There should be no deployment issues if the number of headsets in an area is below the following limits:

210 headsets for EU DECT (narrowband audio), or
160 headsets for EU DECT (wideband audio), or

105 headsets for US DECT (narrowband audio), or
80 headsets for US DECT (wideband audio)

80 headsets for Japan DECT (narrowband audio), or
60 headsets for Japan DECT (wideband audio)

Please note that these numbers are for short range.

We recommend a distance of at least 2-4m/7-13ft between bases even if the number of headsets is below the limit.

If the number of headsets exceeds these limits, you should configure them to operate in a medium (30m/100ft) or short (10m/30ft) range. You should start with the following conservative areas per headset:

25-49 m² for EU DECT
(i.e. 5-7m/16-23ft between bases)

49-100 m² / 527-1076 sq ft for US DECT
(i.e. 7-10m/23-33ft between bases)

49-100 m² / 527-1076 sq ft for Japan DECT
(i.e. 7-10m/23-33ft between bases)

Large metal objects or large glass windows, especially those covered with a metallic layer cause radio reflections and necessitate more conservative planning.





More about Jabra Engage Series

The world's most powerful professional headset*

- Provides superior wireless connectivity to a range of up to 150 meters/490 feet, enabling **3x more users** in the same office space – with no loss in connection quality.
- Advanced noise cancelling microphone and enhanced speakers deliver crystal-clear calls **even in noisy offices**. Meets Skype for Business Open Office requirements.**
- **All day battery life** and a **busylight** that acts as a do-not-disturb sign for colleagues.

Why Jabra

Different working environments, office layouts and interiors present an almost infinite variety of challenges when planning the effective deployment of multiple wireless headsets in a limited space. As a world-leading supplier of wireless headset solutions, Jabra has many years of experience helping customers deploy effective wireless solutions on their premises.

Find out more about your options in your particular location and workplace environment by contacting Jabra customer service, where experts are available to discuss your particular needs and how best to address them.

jabra.com

* Relates to Jabra Engage 75/65 Stereo and Mono variants. February 19, 2018. See facts on [Jabra.com/commercial-claims](https://jabra.com/commercial-claims) ** Variant dependent

Jabra Engage DECT density White paper – 26/04/2018

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