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Sennheiser UK Statement on current and future UHF Spectrum and Product Availability – November 2009

Section 1 – Spectrum Availability

Section 2 – Sennheiser Product Availability

Section 1 - SPECTRUM AVAILABILITY

Many customers have contacted Sennheiser UK recently seeking clarification on what the future may look like for wireless microphone and in-ear monitor users, both in terms of what areas of spectrum will be available for the use of these pieces of equipment, and what equipment will be available for use in that spectrum. The intention of this document is to answer these questions as best we can, given the current circumstances.

De-regulated/license exempt frequencies – 863-865 MHz (in channel 70)

There are no plans for any changes in this de-regulated area of spectrum. Low channel count community users will be able to continue accessing this 'free' sub-band - 2MHz of channel 70. For example, with range E evolution G2 wireless microphone systems it is possible to run up to four compatible frequencies in this band, while with the new G3 systems this number increases to six. For many wireless microphone users in the MI, Houses of Worship, Corporate, Install and Retail markets this may well prove to be beneficial.

Channel 38 – the new channel 69?

Channel 69 (854-862 MHz) is unique in that it is the only nationally licensable TV band set aside for wireless microphone use right across the UK. Over the next three years wireless microphone users will have to vacate channel 69 as it has been designated as part of a larger spectrum band that will be re-allocated for new services, most likely mobile broadband. The UK regulator, Ofcom, has confirmed that, as a replacement for channel 69, an alternative TV band, channel 38 (606-614 MHz), will be made available for wireless microphone use. However, the whole of channel 38 is not currently available nationally for two main reasons:

- 1) Radio-Astronomy** – the current users of channel 38 are not due to vacate the band until 1st January 2012. Consequently, there are certain areas of the UK that are currently 'off-limits'.
- 2) Broadcasting** - there will continue to be a need to protect analogue broadcasting in adjacent band channel 37, right up until DSO is complete, scheduled for the latter part of 2012. So again, there are regions where channel 38 is not currently available. To complicate matters further, the availability of channel 38 differs dramatically depending on whether wireless equipment is being used indoors or outdoors. Consequently, our view is that there should be no great rush to occupy channel 38.

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What about channel 69 – how long will it continue to be available?

We expect that channel 69 will continue to be available for wireless microphones and in-ear monitor use until at least the end of 2011, but most likely until DSO is complete, again, in the latter part of 2012. Ofcom have recently confirmed that channel 69 and all of the spectrum scheduled for re-allocation will be available to cover the London 2012 Olympics. Consequently, there is no immediate hurry to vacate the band.

What Spectrum is to be re-allocated for new uses/services?

Two blocks of spectrum are due to be re-allocated. The first block is commonly referred to as 'the 800MHz band' – the actual frequencies are 790 MHz to 862 MHz – channels 61-69 inclusive. The second block, lower down the frequency range, channels 31 to 37 (550 to 606 MHz), are also due to be re-allocated, however, plans for the re-use of this band are not as well advanced as they are for the 800 MHz band.

21	22	23	24	25	26	27	28	29	30	31	32	TV Channel
470-478	478-486	486-494	494-502	502-510	510-518	518-526	526-534	534-542	542-550	550-558	558-566	Freq MHz
33	34	35	36	37	38	39	40	41	42	43	44	TV Channel
586-574	574-582	582-590	590-598	598-606	606-614	614-622	622-630	630-638	638-646	646-654	654-662	Freq MHz
45	46	47	48	49	50	51	52	53	54	55	56	TV Channel
662-670	670-678	678-686	686-694	694-702	702-710	710-718	718-726	726-734	734-742	742-750	750-758	Freq MHz
57	58	59	60	61	62	63	64	65	66	67	68	TV Channel
758-766	766-774	774-782	782-790	790-798	798-806	806-814	814-822	822-830	830-838	838-846	846-854	Freq MHz
69	70											TV Channel
854-862	(863-865)											Freq MHz
	Interleaved Spectrum - available for PMSE use pre and post Digital Switchover (DSO). Will possibly have to share with whitespace devices. Lower cleared band/Interleaved spectrum - currently available for PMSE will be re-allocated (auctioned) for other services. Channel 38 - available for restricted (co-ordinated) use now - should be available for PMSE nationally post DSO - Q3 2012. Upper cleared band/Interleaved spectrum - currently available for PMSE use but due to be re-allocated (auctioned) for mobile broadband use. Channel 69 - currently the only nationally available channel for PMSE. Included in the 790-862 MHz band for re-allocation post DSO - channel 38 is it's replacement. Channel 70 - not all 8 MHz available for PMSE use - 2 MHz of licence-exempt spectrum for PMSE use - 863-865 MHz											

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Section 2 - SENNHEISER PRODUCT AVAILABILITY

Over time, there will be a need for wireless microphones and in-ear monitor systems to be either replaced or converted in order that units will be able to transmit and receive in the 'new' areas of spectrum – primarily channel 38. This section of the document seeks to clarify which Sennheiser wireless systems and components will be convertible and which will not.

Freeport – No change – licence exempt operation only - 863 to 865 MHz.

Evolution G1 Series – Not convertible – but will still be capable of operating in the licence exempt band 863 to 865 MHz.

Evolution G2 Series – Not convertible – but will still be capable of operating on the four pre-programmed frequencies in the licence exempt band 863 to 865 MHz.

Evolution G3 Series – Will be convertible – to meet the challenge of this unprecedented situation, work is in progress by Sennheiser to produce a new version of G3 that will tune across channels 38, 39, 40, 41 and part of channel 42. When the relevant parts become available this will enable current G3 systems to be converted for operation on the new lower frequencies, if required. It should be noted that Sennheiser G3 Range E wireless microphone systems are capable of operating simultaneously, intermodulation free, on six frequencies in the license exempt 863-865 MHz band. These frequencies are;

863.100 MHz

863.400 MHz

863.750 MHz

864.225 MHz

864.550 MHz

864.975 MHz

So, for many users, conversion from Range E status and licensing of frequencies may not be necessary.

2000 Series – 2000 Series is already capable of tuning to channel 38. Available now, the Range GW version covers channel 38 as well as frequencies above and below this channel – actual tuning range is 558-626 MHz – 68 MHz in total.

3000/5000 Series – Version/model dependent. Most receivers and some transmitters will be convertible but checking with Sennheiser UK Engineering is recommended.

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Conversion costs and timing

At time of writing it is not possible to predict precisely what costs will be associated with any conversion processes. This is because production costs have yet to be finalised. In terms of timescales for conversion of equipment, Sennheiser UK will work with our customers to efficiently plan practical schedules in order that the work can be successfully completed. Licensed channel 69 users may also receive financial assistance from HM Government or Ofcom. However, the details of the Government's proposed funding scheme to assist with the migration from channel 69 have yet to be finalised. Sennheiser UK will issue further information when details of this scheme are finally released.

Current and future licensing of channel 38 – Current plans suggest that channel 38 will eventually be licensable in a manner similar to the existing arrangements for channel 69 – a national shared licence. At present, frequencies in channel 38 need to be licensed on a 'where, when and for how long' basis. When DSO is complete current thinking is that channel's 39, 40, 41 and 42 will be licensable on an interleaved basis. However, during the transition period it is likely that channels 38, 39 and 40 will be available on a 'coordinated shared' basis. Again, work here is still on going and enquiries regarding current and future licensing arrangements should be addressed to JFMG Ltd. They can be contacted on 0207 299 8660.

In conclusion

So, as things currently stand, it is likely that equipment that tunes to the frequencies affected will continue to be useable until the third quarter of 2012. Sennheiser customers buying range E G3 equipment now will be able to have this equipment converted to new frequencies once the current on-going development work has been completed. Or, if fewer than 6 frequencies are required at a given location, then the licence exempt band will continue to offer a solution.

Whatever the future holds for wireless microphone and in-ear monitor users, Sennheiser UK will do all in its power to support and assist our customers – from maintaining our full engagement with the on-going debate to retain access to spectrum for wireless microphone users, to manufacturing the best wireless tools that enable our customers to make the most of that spectrum access.

If you require any further information, please contact our Technical Support Team on 01494 551551

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