

SHURE®

LEGENDARY
PERFORMANCE™

2012
DIGITAL
SWITCHOVER
COMPLIANT

SHURE WIRELESS FREQUENCY GUIDE

CHANNEL 69 TO 38 SWITCHOVER INFORMATION



SHURE

A close-up, low-angle shot of a DJ performing at a nightclub. The DJ is wearing a black and white vertically striped shirt and a black Shure microphone. Their hands are positioned over a professional DJ mixer with numerous colorful knobs and sliders. The background is dark with warm, bokeh lights from the club's lighting system. The overall mood is energetic and professional.

TOTAL COMPLIANCE ASSURED.

WHAT LEGENDARY PERFORMANCE MEANS TO SHURE

We believe that the phrase legendary performance should not be used lightly. At Shure, we take its connotations seriously and use past accomplishments as a foundation and roadmap for the future.

We start by thinking about performance as it relates to our products, and we work hard to ensure that they remain the “gold standard” of quality, reliability, and durability.

Equally, we are always conscious of our performance as an industry leader. We are committed to developing products that will provide the same high quality and reliability tomorrow as they do today.

We also rate our performance in the context of our relationships. Enabling others to fulfil their potential drives us to provide the best service, support and training possible.

In this respect, we like to share our knowledge freely.

Ultimately, our 85-year heritage has been built on a diverse and storied foundation of legendary performances, and all of our activities revolve around optimising and enabling your best performance.

SHURE[®]
LEGENDARY
PERFORMANCE[™]

THE SPECTRUM SITUATION SIMPLIFIED

The current spectrum situation in the UK can be a daunting concept to fully understand. The catalyst for these significant changes is the Digital Switchover (DSO) from analogue to digital terrestrial television broadcasting in the United Kingdom.

From Analogue to Digital TV

In the past, our televisions at home have received an analogue signal. In 2003 the UK Government announced that all analogue TV transmitters would be shut off and replaced by new digital transmitters and that the current spectrum used by analogue TV transmitters would be auctioned away to new services.

This announcement created a huge problem for anyone using wireless as literally all wireless microphones and in-ear monitoring systems in the UK have always shared the same spectrum as analogue television!

Channel 69 – The Old Home of Wireless Mic's and In-Ear Monitors (IEM)

A small chunk of spectrum that sits just above the analogue TV bands known as channel 69 (854-862MHz) was seemingly untouched by the original announcement. Channel 69 has been historically set aside for wireless microphones and in-ear monitoring systems and offered users nationwide access to this spectrum for a small licence fee.

At the World Radio Conference in 2007, a European wide decision was made to create a pan-European mobile band that spanned 790-862MHz. Soon after this announcement, Ofcom, the independent regulator and authority for the UK communications industries, confirmed that the UK would also clear these bands to match spectrum being released in other European counties for future mobile communications use. With this announcement the future of channel 69 was ended and wireless users were left in a desperate situation with no spectrum at all beyond 2012.

From Channel 69 to Channel 38 – The New Home of Wireless Mic's and In-Ear Monitors

The good news is that wireless equipment has been assigned a new home called channel 38 (606-614MHz).

Channel 38 is setup in a similar fashion to channel 69 and is currently the only OfCom recognised and protected home for PMSE equipment (Program Making and Special Events) meaning that we are not sharing spectrum with other harmful un-licensed devices such as Bluetooth, Wi-Fi etc. that occupy other bands such as 2.4GHz.

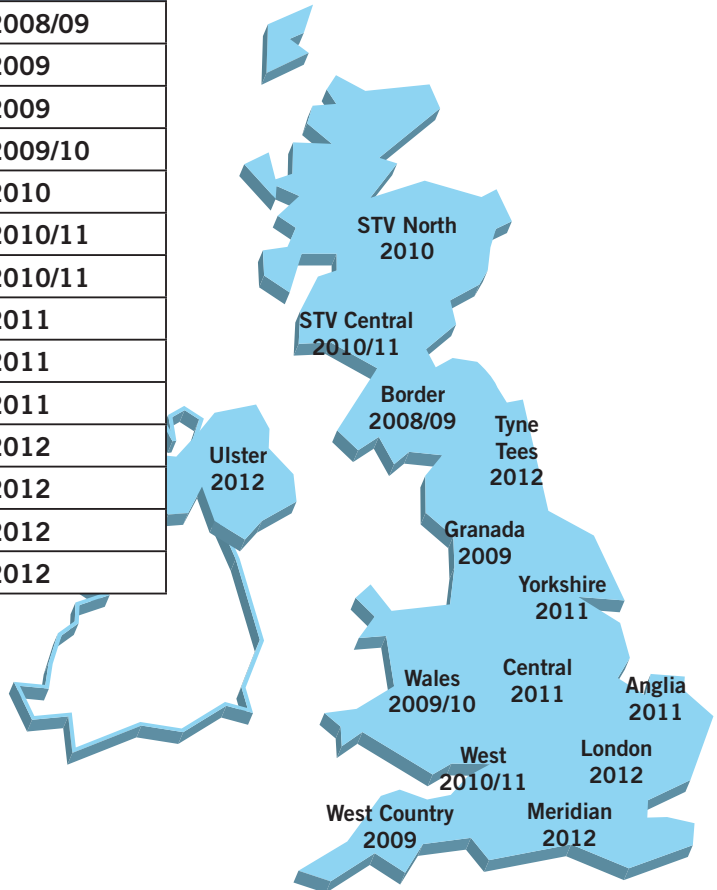
Channel 38 is available for use now and beyond 2012 when the Digital Switchover is expected to be completed.

Along with channel 38, we have been granted access to the bands that the new digital television transmitters exist in meaning that we can share this spectrum on an interleaved basis much like we used to share the spectrum with analogue TV in the 800MHz band.

SWITCHOVER TIMETABLE

The table and image below shows the latest switchover timings by television region.

REGION	SWITCHOVER DATE
Border	2008/09
West Country	2009
Granada	2009
Wales	2009/10
STV North	2010
West	2010/11
STV Central	2010/11
Central	2011
Anglia	2011
Yorkshire	2011
Tyne Tees	2012
Meridian	2012
Ulster	2012
London	2012



FAQ'S

What is the 2012 Digital Switchover (DSO)?

The analogue to digital TV switchover is Government policy. It will mean that almost everyone will be able to receive digital TV through an aerial. Digital TV uses less broadcast space which means that after switchover, there will be more room for new services such as wireless broadband, local TV and High Definition Television (HDTV).

Why does it affect wireless microphone & IEM users?

After the DSO the 800MHz band will no longer be used for TV broadcast. Ofcom is clearing the 800MHz band TV channels 61-69 to match spectrum being released in other European countries (European Harmonisation). This will benefit people across the UK because the spectrum will be able to be used for next-generation mobile broadband services.

What frequencies are affected?

550-606MHz (TV channels 31-37) and 790-862MHz (TV channels 61-69).

What happens to the European harmonised de-regulated licence-free spectrum between 863–865MHz?

The de-regulated licence-free spectrum (863-865MHz) remains untouched by DSO. If you are currently operating in this area of spectrum, you are free to carry on using it now and beyond the 2012 DSO.

WHICH FREQUENCIES CAN I USE FOR WIRELESS MICROPHONES & IEM'S?

1. **TV channel 38 (606-614MHz)** has been officially announced by Ofcom as the replacement for TV channel 69 (854-862MHz).

There are small geographical restrictions to channel 38 due to protection of analogue TV broadcast in channel 37 in areas where DSO is not complete.

Note In the meantime channels **39 (614-622MHz)** and **40 (622-630MHz)** are available on the same channel 38 Shared Licence until channel 38 becomes available nationwide.





Note A Shared Licence allows wireless mics and IEM systems to be used in channels 38, 39 and 40. Contact the Joint Frequency Management Group (JFMG) on www.jfm.co.uk for info.

The availability of channel 38-40 in your area can be checked using the online 'Look Up Tool' from JFMG on www.jfm.co.uk

2. **470-550MHz (TV channels 21-30)** and **630-790MHz (TV channels 41-60)** are available now and post 2012 for wireless microphones and IEM's on an interleaved basis. These are used for special project events only and require a unique licence. Refer to www.jfm.co.uk
3. The deregulated **licence-free** spectrum **863-865MHz** remains untouched by DSO.

Table showing current availability of UK TV channels for use by wireless microphones and IEMs.

TV Channel	21	22	23	24	25	26	27
Frequency Range	470-478MHz	478-486MHz	486-494MHz	494-502MHz	502-510MHz	510-518MHz	518-526MHz
TV Channel	28	29	30	31	32	33	34
Frequency Range	526-534MHz	534-542MHz	542-550MHz	550-558MHz	558-566MHz	566-574MHz	574-582MHz
TV Channel	35	36	37	38	39	40	
Frequency Range	582-590MHz	590-598MHz	598-606MHz	606-614MHz	614-622MHz	622-630MHz	
TV Channel	41	42	43	44	45	46	47
Frequency Range	630-638MHz	638-646MHz	646-654MHz	654-662MHz	662-670MHz	670-678MHz	678-686MHz
TV Channel	48	49	50	51	52	53	54
Frequency Range	686-694MHz	694-702MHz	702-710MHz	710-718MHz	718-726MHz	726-734MHz	734-742MHz
TV Channel	55	56	57	58	59	60	
Frequency Range	742-750MHz	750-758MHz	758-766MHz	766-774MHz	774-782MHz	782-790MHz	
TV Channel	61	62	63	64	65	66	67
Frequency Range	790-798MHz	798-806MHz	806-814MHz	814-822MHz	822-830MHz	830-838MHz	838-846MHz
TV Channel	68	69	70				
Frequency Range	846-854MHz	854-862MHz	863-865MHz				

-  Interleaved Spectrum available for wireless microphones and IEM's now and post DSO 2012.
-  Channels 38-40 available for wireless microphones and IEM's on a shared licence basis
-  Cleared spectrum as a result of DSO. Available for wireless microphones and IEM's until 01.07.2012, or 01.10.2012 for London, Tyneside and Teeside.
-  Licence free spectrum available now and not affected by DSO. Note only 2MHz slice of channel 70 is available.



Do I need a licence to operate my wireless microphones or IEM's?

Yes. It is required by law in the UK to be in possession of a licence to legally operate radio microphones or IEM's unless you are using the de-regulated spectrum between 863-865MHz. Contact JFMG for licensing information www.jfmg.co.uk.

What can I do if I own Shure wireless products, that I can no longer use after 2012?

If your product is non-compliant you will need to purchase a new product as it is not possible to modify a currently non-compliant product. All Shure wireless products are now available in UK specifically designed, channel 38 (606-614MHz) versions.

Visit www.shure.co.uk or call 01992 703058 for product information.

What Shure wireless system is right for me?

Shure manufactures wireless systems in a number of different versions that operate in different parts of the spectrum.

A suffix indicates the tuning bandwidth or frequency range that a particular product can operate in e.g. for **K4E** the frequency range is 606-666MHz.

A table illustrating all usable frequencies for the UK can be found on **page 9**.

Details of all Shure products that are 2012 DSO compliant follow in this guide see **page 27**, visit www.shure.co.uk or call **Shure Sales Team on 01992 703058** for more information or advice.

Performance Gear Wireless

The perfect entry to Wireless: Fast and easy setup with a variety of microphone head options. Handheld, guitar, lavalier and headset systems available.

PG Wireless Frequency Bands/Versions:

K6E covers **TV channels 38 – 39** **606 – 618MHz**

T10 covers **TV channels 69 – 70**** **854 – 865MHz***

K8E covers **TV channels 39 – 40** **618 – 630MHz**

Available for use with a channel 38 licence now and beyond 2012.

K6E: **Four** radio microphones simultaneously in TV channel 38 (channels 1-4) or **five** channels simultaneously in TV channels 38-39 (channels 1-5 or channels 6-0).

* **Licence free now and beyond 2012:** **Two** PG systems can be operated simultaneously using frequency version **T10**. Please use channels 4 and 5 or channels 9 and 0 together.

** Note only 2MHz slice of channel 70 is available.

Which frequency version should I purchase?

If you are not using more than **two** radio microphones simultaneously, **T10** can be used licence-free now and beyond 2012 as long as you operate between 863-865MHz. This de-regulated band is un-affected by DSO.

Should you require more than two channels to operate simultaneously we suggest using **K6E**. This is the primary UK frequency version that covers channel 38. Please contact JFMG for licensing information.



PGX® Wireless

Combines superior wireless technology, automatic set-up features and legendary Shure microphones including the SM58® and BETA58A to deliver the best sounding easiest-to-use systems in their class.

Handheld, guitar, brass & wind, lavalier and headset systems available.

PGX® Wireless Frequency Bands/Versions:

K5E covers **TV channels 38 – 40** **606 – 630MHz**

T1 covers **TV channels 68 – 70**** **846 – 865MHz***

Available for use with a Channel 38 licence now and beyond 2012.

K5E: **six** radio microphones simultaneously in TV channel 38 (channels 1-6 or channel 11-16) or **nine** radio microphones simultaneously in TV channels 38-40 (channels 21-29, channels 31-39 or channels 41-49).

* **Licence free now and beyond 2012:** Up to **three** PGX systems can be used simultaneously using frequency version T1 without a licence. Please use channels 21, 22, and 23.

** Note only 2MHz slice of channel 70 is available.

Larger installations or systems:

In case you need more than **nine** compatible radio microphones to run simultaneously, multiple frequency bands can be combined to achieve this. Call the Shure Applications Department for frequency co-ordination information and assistance.

See **page 26** for contact information.

Which frequency version should I purchase?

If you are not using more than **three** radio microphones simultaneously, **T1** can be used licence-free now and beyond 2012 as long as you operate between 863-865MHz. This de-regulated band is un-affected by DSO.

Should you require more than three channels to operate simultaneously we suggest using **K5E**. This is the primary UK frequency version that covers Channel 38. Contact JFMG for licensing information.



SLX® Wireless

Unparalleled ease of set-up and exceptional audio quality.

With included accessories, SLX is also installation-ready out-of-the-box and has a wide selection of legendary Shure microphones to choose from. SLX offers a tailored solution for virtually any application.

SLX® Wireless Frequency Bands/Versions:

K3E	covers	TV channels 38 – 40	606 – 630MHz
S6	covers	TV channels 67 – 70**	838 – 865MHz*
G4E	covers	TV channels 21 – 23	470 – 494MHz
G5E	covers	TV channels 24 – 26	494 – 518MHz
L4E	covers	TV channels 42 – 44	638 – 662MHz
P4	covers	TV channels 50 – 52	702 – 726MHz

Available for use with a Channel 38 licence now and beyond 2012.

K3E: Six radio microphones simultaneously in TV channel 38 (groups 6-11) or **fourteen** radio microphones simultaneously in TV channels 38-40 (groups 1-3).

* **Licence free now and beyond 2012:** Up to **two** SLX systems can be used simultaneously using frequency version **S6** without a licence. Use group 10.

** Note only 2MHz slice of channel 70 is available.

Larger installations or systems:

In case you need more than **fourteen** compatible systems to run simultaneously, multiple frequency bands can be combined to achieve this. Call the Shure Applications Department for frequency co-ordination information and assistance.

See **page 26** for contact information.

Which frequency version should I purchase?

We suggest K3E as this is the primary UK version that covers Channel 38. Please note that a licence is required to operate wireless microphones in Channel 38.

If you are not using more than **two** radio microphones simultaneously, **S6** can be used licence-free now and beyond 2012 as long as you operate between 863-865MHz. This de-regulated band is un-affected by DSO.

Should you require more than three radio microphones to operate simultaneously we suggest using **K3E**. This is the primary UK frequency version that covers Channel 38. Please contact JFMG for licensing information.



ULX® Wireless

ULX Professional wireless, UHF systems for working musicians and professional sound installers. Multiple system configurations provide limitless options, each with a choice of legendary Shure microphones, or instrument cables.

ULX® Wireless Frequency Bands/Versions:

K2E	covers	TV channels 38 – 42	606 – 642MHz
S3	covers	TV channels 66 – 70**	829 – 865MHz*
G3E	covers	TV channels 21 – 25	470 – 506MHz
M2	covers	TV channels 45 – 49	662 – 698MHz
Q2	covers	TV channels 55 – 59	748 – 784MHz

Available for use with a channel 38 licence now and beyond 2012.

K2E: Ten radio microphones simultaneously in TV channel 38 (groups 7-9) or **twenty-four** radio microphones simultaneously in TV channels 38-40 (groups 1-3).

* **Licence free now and beyond 2012:** Up to **four** ULX systems can be used simultaneously using frequency version **S3** without a licence. Please use group 10 or 11.

** Note only 2MHz slice of channel 70 is available.

Larger installations or systems:

In case you need more than **twenty-four** compatible systems to run simultaneously, multiple frequency bands can be combined to achieve this. Call the Shure Applications Department for frequency co-ordination information and assistance.

See **page 26** for contact information.

Which frequency version should I purchase?

We suggest K2E as this is the primary UK version that covers channel 38. Note that a licence is required to operate wireless microphones in channel 38.



UHF-R® Wireless

Premier Wireless Technology

Shure UHF-R® Wireless Microphone Systems master the high pressure and extreme conditions of any large-scale touring or installations environment while delivering uncompromising Shure sound.

Rock-solid engineering, the latest technology, and unparalleled RF performance provide sound professionals with all the features and flexibility they need to tightly control up to 108 systems for the most elaborate productions

UHF-R® Wireless Frequency Bands/Versions:

K4E	covers	TV channels 38 – 45	606 – 666MHz
R9	covers	TV channels 61 – 70**	790 – 865MHz*
G1E	covers	TV channels 21 – 28	470 – 530MHz
J5E	covers	TV channels 34 – 41	578 – 638MHz
L3E	covers	TV channels 42 – 49	638 – 698MHz
M5E	covers	TV channels 49 – 56	694 – 758MHz
P8	covers	TV channels 51 – 60	710 – 790MHz
Q5	covers	TV channels 55 – 63	740 – 814MHz

Available for use with a channel 38 licence now and beyond 2012.

K4E: Eleven radio microphones simultaneously in TV channel 38 (groups 6-11) or **forty-five** radio microphones simultaneously in TV channels 38-45 (groups 1-3).

* **Licence free now and beyond 2012:** Up to **four** UHF-R® systems can be used simultaneously using frequency version **R9** without a licence. Use group 45.

** Note only 2MHz slice of channel 70 is available.

Larger installations or systems:

In case you need more than **forty-five** compatible systems to run simultaneously, multiple frequency bands can be combined to achieve this. UHF-R can be used to make extremely large systems (100 channels or more) for the most demanding performances. Call the Shure Applications Department for frequency co-ordination information and assistance.

See **page 26** for contact information.

Which frequency version should I purchase?

We suggest K4E as this is the primary UK version that covers channel 38. Note that a licence is required to operate wireless microphones in channel 38.



PSM® 900 In-Ear Monitoring

The PSM® 900 In-Ear Personal Monitoring System offers clear audio quality and robust RF performance for pro applications. Innovative features allowing for ease of use and quick setup make it the ideal solution for the most demanding professional applications.

PSM® 900 Wireless Frequency Bands/Versions:

K1E	covers	TV channels 37 – 40	596 – 632MHz
Q15	covers	TV channels 56 – 60	750 – 790MHz
G6E	covers	TV channels 21 – 25	470 – 506MHz
G7E	covers	TV channels 25 – 29	506 – 542MHz
L6E	covers	TV channels 44 – 48	656 – 692MHz
P7	covers	TV channels 50 – 54	702 – 742MHz

Available for use with a channel 38 licence now and beyond 2012.

K1E: Eight frequencies simultaneously in TV channel 38 (groups 6-8) or **twenty** frequencies simultaneously in TV channels 38-40 (groups 1-3).

Larger Installations or Systems:

In case you need more than **twenty** compatible systems to run simultaneously, multiple frequency bands can be combined to achieve this. Call the Shure Applications Department for frequency co-ordination information and assistance.

See **page 26** for contact information.

Which frequency version should I purchase?

We suggest K1E as this is the primary UK version that covers Channel 38. Note that a licence is required to operate wireless microphones in Channel 38.



PSM® 1000 In-Ear Monitoring

New flagship In-Ear Personal Monitoring System with full rack dual channel wireless transmitter, ethernet Port for Shure Network Connectivity, Internal Power Supply and up to 80MHz tuning bandwidth

PSM® 1000 Wireless Frequency Bands/Versions:

K10E covers	TV channels 36 – 45	596 – 670MHz
G10E covers	TV channels 21 – 29	470 – 542MHz
L8E covers	TV channels 41 – 49	626 – 698MHz
L9E covers	TV channels 46 – 54	670 – 742MHz
P8 covers	TV channels 51 – 60	710 – 790MHz

Available for use with a channel 38 licence now and beyond 2012.

K10E: **Eight** frequencies simultaneously in TV channel 38 (groups 6-8) or **twenty** frequencies simultaneously in TV channels 38-40 (groups 1-3).

Larger Installations or Systems:

In case you need more than **forty** compatible systems to run simultaneously, multiple frequency bands can be combined to achieve this. Call the Shure Applications Department for frequency co-ordination information and assistance.

See **page 26** for contact information.

Which frequency version should I purchase?

We suggest K10E as this is the primary UK version that covers Channel 38. Note that a licence is required to operate wireless microphones in Channel 38.



WHO TO CONTACT AT SHURE FOR FURTHER INFORMATION?

Channel 69 to 38 Switchover Helpline: 01992 703 038

Email: applications@shure.co.uk

Shure's Applications Engineers are your primary contact for any technical queries, seminars or training requirements.

Tuomo George-Tolonen

**Applications & Product Planning Manager
BEIRG Steering Committee Member**

Email: Tuomo@shuredistribution.co.uk

Tom Colman

Applications Engineer

Email: tomc@shuredistribution.co.uk

BEIRG (British Entertainment Industry Radio Group)

Founded in late 2004 BEIRG is an independent and non-profit making organisation working on behalf of all those who use wireless equipment. BEIRG's key objective is to secure access to sufficient quality and quantity of spectrum so our industry can carry on operating the wireless equipment we have become so dependent on for live performances to broadcasting.

www.beirg.co.uk

For more information on how you can become a BEIRG Member beirginfo@me.com

Ofcom

The independent regulator and competition authority for the UK communications industries.

www.ofcom.org.uk

Ofcom, Riverside House, 2a Southwark Bridge Road, London SE1 9HA

Switchboard: 0300 123 3000 or 020 7981 3000

Fax: 020 7981 3333

Textphone: 020 7981 3043

Overview of Shure Wireless Frequency Bands/Versions:

This table illustrates all the usable frequency versions for the United Kingdom. Channel 38 is highlighted in yellow.

Shure Wireless Product Range	Interleaved Spectrum available for wireless microphones and In-Ear Monitoring systems now and beyond Digital Switchover 2012. Please contact JFMG for licensing and availability in your area.																													Cleared Spectrum as a result of Digital Switchover. Believed to be available for wireless microphones and In-Ear Monitoring Systems until at least July 1st, 2012.										Channel 38-40. Available for licensing now. NOTE: Channels 39&40 will likely become part of the interleaved spectrum once Digital Switchover is complete.		Interleaved Spectrum available for wireless microphones and in-ear monitoring systems now and beyond Digital Switchover 2012. Please contact JFMG for licensing and availability in your area.																													Cleared Spectrum as a result of Digital Switchover. Believed to be available for wireless microphones and In-Ear Monitoring Systems until at least July 1st, 2012.										Channel 69. Access at least until July 1st, 2012	De-Regulated 863-865MHz. License Free now and beyond 2012				
PSM 200																																								K9E (606-638MHz)																															S5 (842-865MHz)															
PSM 900	G6E (470-506MHz)																													K1E (596-632MHz)										L6E (656-692MHz)					P7 (702-742MHz)					Q15 (750-790MHz)																																				
PSM 1000	G10E (470-542MHz)																																		K10E (596-670MHz)															L9E (670-742MHz)					P8 (710-790MHz)																															
PG Wireless																																								K6E (606-618MHz)		K8E (618-630MHz)																																									T10 (854-865MHz)			
PGX																																								K5E (606-630MHz)										P6 (702-720MHz)																																				
SLX	G4E (470-494MHz)																													K3E (606-630MHz)					L4E (638-662MHz)					P4 (702-726MHz)															S6 (838-865MHz)																															
ULX	G3E (470-506MHz)																													K2E (606-642MHz)					M2 (662-698MHz)					Q2 (748-784MHz)															S3 (829-865MHz T1 (846-865MHz))																															
UHF-R	G1E (470-530MHz)																																		K4E (606-666MHz)					M5E (694-758MHz)					R9 (790-865MHz)																																									
																									J5E (578-638MHz)										L3E (638-698MHz)					P8 (710-790MHz)					Q5 (740-814MHz)																																									
MHz	470	478	486	494	502	510	518	526	534	542	550	558	566	574	582	590	598	606	614	622	630	638	646	654	662	670	678	686	694	702	710	718	726	734	742	750	758	766	774	782	790	798	806	814	822	830	838	846	854	862	865																																			
TV CHANNEL	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70																																				



Fold-out Overview of Shure Wireless Frequency Bands/Versions



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