

# Ultra T Ultrasonic Activator USER MANUAL

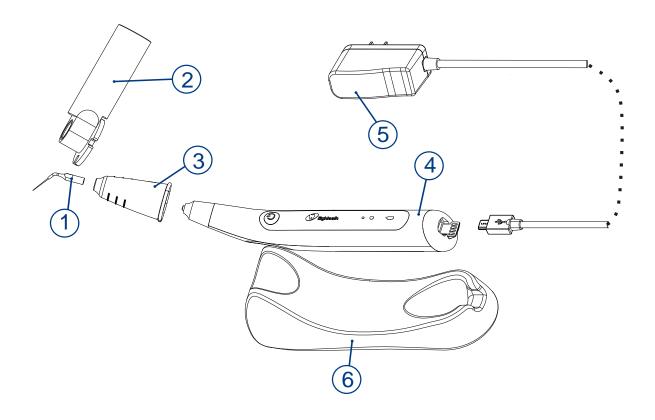
**Changzhou Sifary Medical Technology Co.,Ltd.** 

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# 1.Scope of Ultra X

# 1.1 Parts Identification



# Accessories list

- 1. Tips(6pcs)
- 2. Wrench
- 3. Insulating sleeve
- 4. Ultra X handpiece
- 5. Adapter
- 6. Handpiece Base

# 1.2 **Components and Accessories**

Ultra X handpiece (1pcs)	Tip: S21(1 pcs)	Tip: G18 (1 pcs)
ORDER CODE: 6251001	ORDER CODE: 6251041	ORDER CODE: 6251042
Tip: B18 (1 pcs)	Insulating sleeve (1 pcs)	Adapter (1 pcs)
ORDER CODE: 6251043	ORDER CODE: 6204002	ORDER CODE: 6016001
Wrench (1 pcs)	Handpiece base(1pcs)	User manual (1 pcs)
ORDER CODE: 6251007	ORDER CODE: 6005002	ORDER CODE: 6235001

# 2. Symbols Used

<b>Warning</b>	If the instructions are not followed properly, operation may lead to hazards for the product or the user/patient.
<b>⚠</b> NOTE	Additional information, explanation of operation and performance.
SN	Serial number
REF	Catalogue number
	Manufacturer
~~ <u></u>	Date of manufacture
	Class II equipment
<b>*</b>	Type B applied part
<b>€</b> 0197	CE marking
===	Direct current
	WEEE directive marking
<del>*</del>	Keep dry
<b>&amp;</b>	Consult instructions for use
134°C ∫∫∫ ∠	Can be autoclaved up to a maximum temperature of 134° Celsius
EC REP	Authorized Representative in the European Community
-20°C -55°C	Temperature limitation
20%	Humidity limitation
70 106	Atmospheric pressure limitation
一一一	Washer-disinfector for thermal disinfection
Eighteeth	Manufacturer Logo

#### 3. Before Use

# 3.1 Scope of application

Ultra X is used in endodontic treatment by application of ultrasonic energy. The Ultra X can provide the energy for tip oscillation and vibration in frequency (45KHz+5KHz) required to create sufficient acoustical streaming and cavitation necessary to effectively clean, penetrate, and remove vapor lock. A cleaned root canal system makes for better outcomes and reduces retreatment rate.

This device must only be used in hospital environments, clinics or dental offices by qualified dental personnel and not used in the oxygen-rich environment.

#### 3.2 Contraindications

The Ultra X is contraindicated in cases where patient/user carry medical implants such as pace makers or cochlear implants etc.

Do not use the device for implants or other non-endodontic dental procedures.

Safety and effectiveness have not been established in pregnant women and children.



#### Warning

Read the following warnings before use:

- 1. The device must not be placed in humid surroundings or anywhere where it can come into contact with any type of liquids.
- 2. Do not expose the device to direct or indirect heat sources. The device must be operated and stored in a safe environment.
- 3. The device requires special precautions with regard to electromagnetic compatibility (EMC) and must be installed and operated in strict compliance with the EMC information. In particular, do not use the device in the vicinity of fluorescent lamps, radio transmitters, remote controls and do not use this system near the active HF Surgical Equipment in the hospital. Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the E-connect S, including

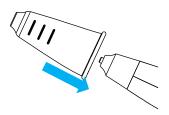
cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result. Do not charge, operate or store at high temperatures. Comply with the specified operating and storage conditions.

- 4. Gloves and a rubber dam are compulsory during treatment.
- 5. If irregularities occur in the device during treatment, switch it off. Contact the agency.
- 6. Never open or repair the device by yourself, otherwise, void the warranty.

# 4. Setting up the Ultra X

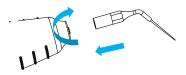
# 4.1 Installing the sleeve

Always use a silicone sleeve.



# 4.2 Installing the tip

Make sure the thread on the tip is aligning to the stud of the handpiece. Plug them together and turn it carefully

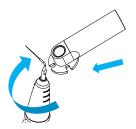




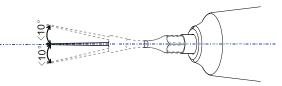
#### NOTE

- Only the original tip can be used.
- The Activator tips are not sterile when deliver and must be autoclaved before being used for the first time
- Clean and disinfect the Activator tips before every use

Tighten the tip clockwise with provided wrench until the tip secure.



When you set the tip on the device, the tip can be set within a range of 10°, therefore, do not tighten the tip in excess.



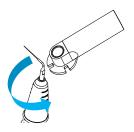


#### Warning

- Inspect the tip before inserting. Do not use the damaged tip.
- Make sure the device is stopped when inserting and removing tips.
- Pull the tip gently to make sure that the tip is secure in handpiece properly, otherwise it may pop out and hurt the patient.

# 4.3 **Tip Removal**

Loosen the tip counterclockwise with provided wrench until the tip shedding.





#### Warning

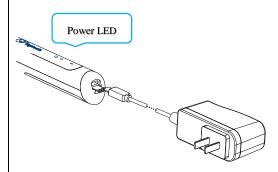
 Estimated case number of uses per tip: 20, taking 2 root canals per case as a reference.

Be careful when inserting and removing tips to avoid injury to fingers.

# 4.4 Connecting the

# adapter

Connect the USB cable to the handpiece power connector, and plug the other end into a power outlet. The Power LED on the handpiece will flash (yellow).



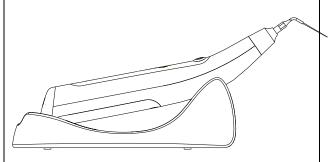


NOTE

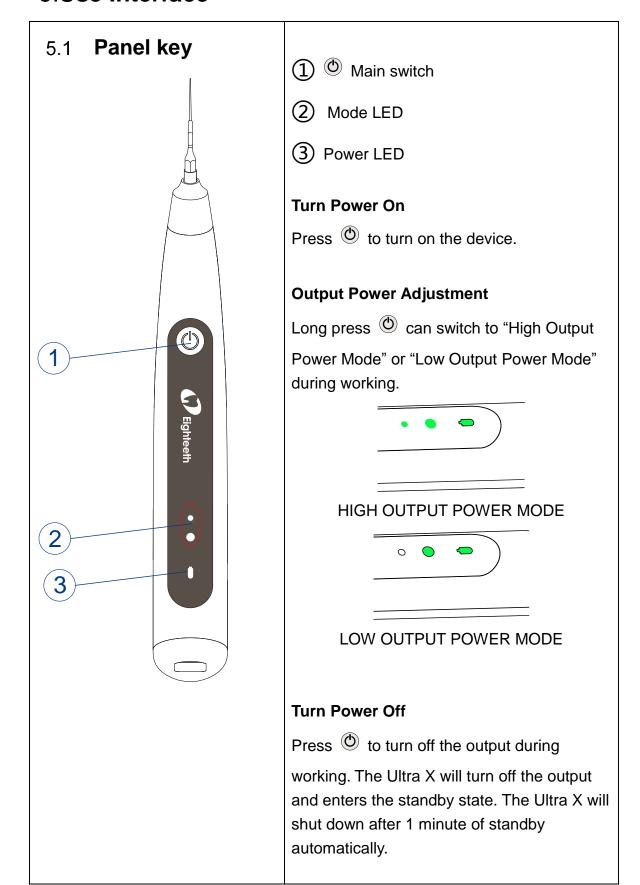
Only the original adapter can be used.

Do not use the device while charging.

Handpiece base is recommended to be used to place the Ultra X to protect the tip when the device is not in use.



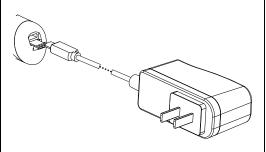
# 5. Use Interface



# 6. Operation

# 6.1 **Charge**

Power LED light up in "GREEN"	Battery power is >50%.
Power LED light up in "YELLOW"	Battery power is 15%~50%.
Power LED light up in "RED"	Battery power is <15%.  NOTE  If the power is less than 15%, the device must be recharged within 30 days, otherwise the battery will be damaged.
Power LED flashes in "RED"	Battery power is <5%. The device will stop working and have voice prompt, please charge immediately.  NOTE  The remaining amount of battery mark indicates a voltage. When a load is applied to the handpiece, the remaining amount of battery mark appears to become lower

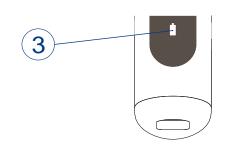


Connect the adapter to the handpiece.



#### NOTE

Only the original adapter can be used.



Charging indication appears on the power LED, and flashes in "YELLOW"(③), when the battery is fully charged or in a state near full charge, the flash will stop and light up in "GREEN" (③).

Fully charged will take about 4 hours, depending on residual battery power and battery state.

It can be recharged 300-500 times, depending on the operating conditions of the device.



#### NOTE

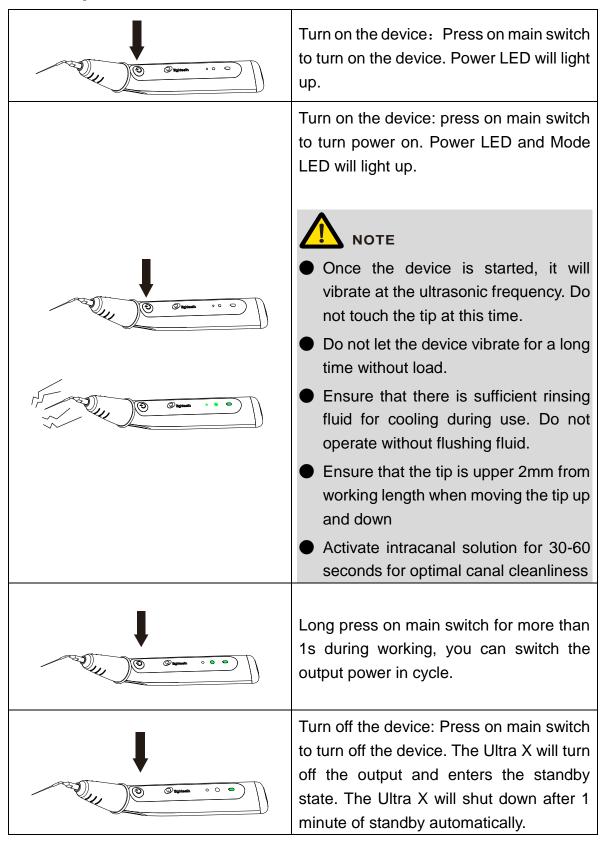
When changing, other function will forcibly stop and get in to the charging mode.



#### Warning

Do not change the battery, only trained technician or distributor can change the battery, the electronic parts will be damaged if use a wrong battery or install with a wrong way.

# 6.2 **Operation**



The Ultra X will automatically shut down after 3 minutes of continuous operation; In addition, the machine has a timed reminder function, and there is a beep every 5s during the work.



#### Warning

- Use the Ultra X outside the oral cavity to make sure that the device is functioning properly.
- Replace the tip on time to avoid file separation within the canal. Tips may separate because of metal fatigue.
- Heavy force / hand pressure on handpiece while using may even cause tip separation.



#### NOTE

- If there is any abnormal functioning, stop using the device and report to the company.
- This device is not suitable for all types of root canals. Do not use this device on extremely deformed root canal.
- Gloves and a rubber dam are compulsory during treatment.
- Do not forget to remove the tip from the device after its use.

# 7. Cleaning, Disinfection and Sterilization

#### 7.1 Foreword

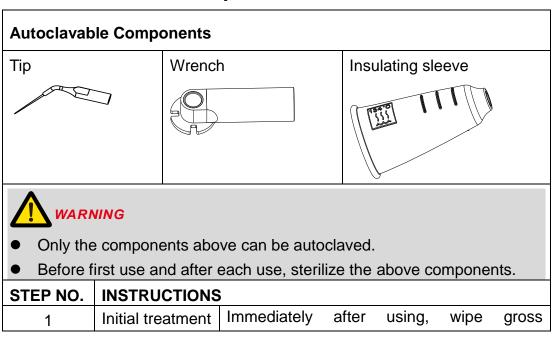
For hygiene and sanitary safety purpose, the components (Tips, Wrench, and Insulating sleeve) must be cleaned, disinfected and sterilized before each usage to prevent any contamination. This concerns the first use as well as the subsequent uses.

Comply with your national guidelines, standards and requirements for cleaning, disinfection and sterilization.

#### 7.2 General recommendations

- 7.2.1 The user is responsible for the sterility of the product for the first cycle and each further usage as well as for the usage of damaged or dirty instruments, where applicable after sterility.
- 7.2.2 For your own safety, please wear personal protective equipment (gloves, safety glasses, etc.).
- 7.2.3 Use only a disinfecting solution which is approved for its efficacy (VAH/DGHM-listing, CE marking, and FDA approval) and in accordance with the DFU of the disinfecting solution manufacturer.
- 7.2.4 The water quality has to be convenient to the local regulations especially for the last rinsing step or with a washer-disinfector.
- 7.2.5 Thoroughly clean and wash the components before autoclaving.
- 7.2.6 Do not clean the tips and wrench with an ultrasonic cleaning device.
- 7.2.7 Do not use bleach or chloride disinfectant materials.

# 7.3 Autoclavable Components



	1	
	at point of use	contaminations from the components, and put them in container for transportation.  Prepare the components directly after treatment.
		WARNING
		Do not submerge the components or wipe them with any of the following functional water (acidic electrolyzed water, strong alkaline solution, or ozone water), medical agents (glutaral, etc.), or any other special types of water or commercial cleaning liquids. Such liquids may result in metal corrosion and adhesion of the residual medical agents to the components.
2	Preparation before cleaning	Remove and disconnect the components (Tips, Wrench, and Insulating sleeve) before cleaning. Refer to "Chapter 4- Setting up the Ultra X" of this manual for disassembly instructions.
		WARNING Observe suitable personal protective measures.

The following Step 2 to Step 4 are operated in a washer-disinfector:



# WARNING

- Use only approved washer-disinfectors according to EN ISO 15883, maintain and calibrate it regularly.
- Follow instructions and observe concentrations given by the manufacturer (see general recommendations).
- Sufficient rinsing step should be available in purified water (max 10 germs/ml and max 0.25 endotoxin units/ml)
- Avoid any contact between the tips and any instrument, kit, support or container.
- Make sure the components are dry before moving to the #5 step.

3	Cleaning: Automated	Carefully put the components (Tips, Wrench, and Insulating sleeve) into the washer-disinfector and set the parameters as follows:
		- Pre-cleaning: water temperature <30°C, 2

		min;
		- Cleaning: water temperature 45°C, 5 min;
		use an enzyme detergent solution (mild and aldehyde free solution) which is suitable to be used with washer-disinfector, and use in accordance with the IFU of the detergent solution manufacturer;
		- Rinsing: water temperature 45°C, 1 min
		(rinsing twice).
4	Disinfection: Thermal	Thermal disinfection at least 5 min at 90°C /194° F, make sure A0 value ≥3000.
5	Drying	Heat: 20min, 90°C/194° F
6	Maintenance and Inspection	Inspect components and sort out those with defects. Dirty components must be cleaned and disinfected again.
7	Packaging	Pack each component in a separate steam- sterilization pouch.
		<ul> <li>Check the validity period of pouch given by the manufacturer to determine the shelf life.</li> <li>Use pouches which resist to a temperature up to 141°C(286°F) and in accordance with EN ISO 11607.</li> </ul>

8	Sterilization	Steam sterilization at 134 °C at least 6
		minutes.  Minimum drying time after sterilization: 10 minutes.
		WARNING
		<ul> <li>Use only approved autoclave devices according to EN 13060 or EN 285.</li> </ul>
		<ul> <li>Use a validated sterilization procedure according to ISO 17665.</li> </ul>
		<ul> <li>Respect the maintenance procedure of the autoclave device given by the manufacturer.</li> </ul>
		<ul> <li>Use only this recommended sterilization procedure.</li> </ul>
		<ul> <li>Control the efficiency (packaging integrity, no humidity, color change of sterilization indicators, physicochemical integrators, digital records of cycles parameters).</li> </ul>
		<ul> <li>The sterilization procedure must comply with ISO 17665.</li> </ul>
		<ul> <li>Waiting for cooling before touching.</li> </ul>
9	Storage	Keep the components in sterilization packaging in a dry and clean environment.
		WARNING
		<ul> <li>Sterility cannot be guaranteed if packaging is open, damaged or wet.</li> </ul>
		<ul> <li>Check the packaging before using it (packaging integrity, no humidity and validity period).</li> </ul>



The instructions provided above have been validated by the manufacturer of the medical device as being capable of preparing a medical device for use. It remains the responsibility of the processor to ensure that the processing, as actually performed using equipment, materials and personnel in the processing facility, achieves the desired result. This requires verification and/or validation and routine monitoring of the process. Likewise, any deviation by the processor from the instructions provided should be properly evaluated for effectiveness and potential adverse consequences.

# 7.4 Disinfection components Handpiece Base Adapter

Wipe all the surfaces with a cloth lightly moistened with Ethanol for Disinfection (Ethanol 70 to 80vol%) at least 2min, repeat for 5 times.



#### NOTE

- Do not use anything except Ethanol for Disinfection (Ethanol 70 to 80 vol%).
- Do not use too much ethanol as it's going into machine and damage the components inside.

# 8. Error Warning

The device stops working and beeping with Power LED flashes in red.	The power is very low. Charge it immediately
Power LED lights up in "BLUE"	The main board is broken. Please stop using the device immediately and remove the battery. Contact your local distributor.

# 9. Troubleshooting

When trouble is found, check the following points before contacting your distributor. If none of these are applicable or the trouble is not remedied even after action has been taken, the product may have failed. Contact your distributor.

Problem	Cause	Solution	Ref.
The power is	The battery is run down.	Charge the battery.	6.1
not turned on.	The time to press the main switch is too short.	Press the main switch more than 0.5 seconds.	6.2
	Use a wrong adapter.	Use the original adapter.	6.1
The Power LED does not light up	There is no electricity in the outlet.	Check the connection.	
when charging.	The adapter is not connected.	Check the connection.	/
	The plug of the adapter is not inserted into the outlet.	Check the connection.	/
The Power LED lights up in "BLUE".	The main board is broken.	Contact your distributor.	/
The LEDs on handpiece do not light up.	The handpiece is broken.	Contact your distributor.	/
	Tip is not installed in place.	Check the installation.	/
Tip does not vibrate.	Tip is broken.	Replace a new tip.	
vibrate.	The main board is broken.	Contact your distributor.	/
There is no beep.  The main board is broken.		Contact your distributor.	/
There is beeping Battery power is very low.		Charge the battery immediately.	6.1

# 10. Technical Data

Manufacturer	Changzhou Sifary Medical Technology Co., Ltd.		
Model	Ultra X		
Dimensions	22cm x 18cm x 7 cm <u>+</u> 1cm (package)		
Weight	750g <u>+</u> 10%		
Power supply	Lithium ion battery: 3.7V, 1500mAh ±10%		
Charger power supply	AC100-240V, <u>+</u> 10%		
Charger power output	5V 1A		
Frequency	50/60Hz, <u>+</u> 10%		
Charger nominal power input	5.5VA		
Output frequency	45KHz <u>+</u> 5KHz		
Electrical safety class	Class II		
Applied part	В		
Ambient conditions	Use: in enclosed spaces		
	Ambient temperature: 10°C ~ 35°C		
	Relative humidity: <80%; non-condensing at 0°		
Transport and storage	Operating altitude < 3000m above sea level  • Ambient temperature: -20 °C ~ +55 °C		
conditions	<ul> <li>Relative humidity: 20% - 80 %, non-condensing at &gt;</li> </ul>		
CONDITIONS	40 °C		
	Atmospheric pressure: 70 kPa - 106 kPa		

# 11.EMC Tables

#### Guidance and manufacturer's declaration – electromagnetic emissions

The **Ultra X** is intended for use in the electromagnetic environment specified below. The customer or the user of the **Ultra X** should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The <b>Ultra X</b> uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The <b>Ultra X</b> is suitable for use in all
Harmonic emissions IEC61000-3-2	Class A	establishments, including domestic establishments and those directly connected
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	to the public low-voltage power supply network that supplies buildings used for domestic purposes.

#### Guidance and manufacturer's declaration - electromagnetic immunity

The **Ultra X** is intended for use in the electromagnetic environment specified below. The customer or the user of the **Ultra X** should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD)	+/- 8 kV contact	+/- 8 kV contact	Floors should be wood, concrete or ceramic tile. If
IEC 61000-4-2	+/- 2 kV, +/- 4 kV, +/- 8 kV, +/- 15 kV air	+/- 2 kV, +/- 4 kV, +/- 8 kV, +/- 15 kV air	floors are covered with synthetic material, the relative humidity should
			be at least 30 %.
Electrical fast transients/bursts IEC 61000-4-4	±2kV 100kHz repetition frequency	±2kV 100kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.

Surge IEC 61000-4-5	Line to line: ±0.5kV, ±1kV Line to earth: ±0.5kV, ±1kV, ±2kV	Line to line: ±0.5kV, ±1kV Line to earth: ±0.5kV, ±1kV, ±2kV	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply lines IEC 61000-4-11	0% UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% UT; 1 cycle and 70% UT; 25/30 cycles sine phase at 0° 0% UT; 250/300 cycle	0% UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% UT; 1 cycle and 70% UT; 25/30 cycles sine phase at 0° 0% UT; 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of devices require continued operation during power mains interruptions, it is recommended that devices be powered form an uninterruptible power supply or a battery
Power frequency magnetic field IEC 61000-4-8	30 A/m 50Hz or 60Hz	30 A/m 50Hz or 60Hz	Power frequency magnetic field should be at levels characteristic of a typical location in a typical commercial or hospital environment.  at 50Hz or 30 cycles at 60Hz

Immunity test IEC 60601 test		Compliance level	Electromagnetic environment -			
The <b>Ultra X</b> is intended for use in the electromagnetic environment specified below. The customer or the user of the <b>Ultra X</b> should assure that it is used in such an environment.						
The Lites V is intended for use in the electromagnetic environment enceified below. The						
Guidance and manufacturer's declaration – electromagnetic immunity						

Conducted dis-	3 V	3 V	Portable and mobile RF
		J V	
turbances	0.15 MHz – 80		communications equipment should
induced by RF	MHz, 6 V in		be usedno closer to any part of the
fields	ISM bands be-		Ultra X, including cables, than the
IEC 61000-4-6	tween 0.15		recommended separation distance
	MHz and 80		calculated from the equation
	MHz, 80 % AM		applicable to the frequency of the
	at 1 kHz		transmitter.
Radiated RF	3 V/m, 80 MHz	3V/m	Recommended minimum
EM fields	– 2,7 GHz,	3.7	separation distances
IEC 61000-4-3	80 % AM at 1		See the RF wireless communication
120 01000-4-3	kHz		equipment table in "Recommended
			minimum separation distances"
			Timilinain ooparation diotariood
	See the RF		
	wireless		
Proximity fields		Complies	
from RF	communication		
wireless	equipment		
communication	table in		
equipment	"Recommende		
IEC 61000-4-3	d minimum		
	separation		
	distances"		

#### Recommended minimum separation distances

Nowadays, many RF wireless equipments have being used in various healthcare locations where medical equipment and/or systems are used. When they are used in close proximity to medical equipment and/or systems, the medical equipment and/or systems' basic safety and essential performance may be affected. The **Ultra X** has been tested with the immunity test level in the below table and meet the related requirements of IEC 60601-1-2:2014. The customer and/or user should help keep a minimum distance between RF wireless communications equipments and the **Ultra X** as recommended below.

Test frequency (MHz)	Band (MHz)	Service	Modulation	Maximum power (W)	Distance (m)	Immunity test level (V/m)
385	380-390	TETRA 400	Pulse modulation	1.8	0.3	27

			18Hz			
			FM			
4=0	400 470	GMRS 460	± 5 kHz			
450	430-470	FRS 460	deviation	2	0.3	28
			1 kHz sine			
710		LTE Donal 42	Pulse			
745	704-787	LTE Band 13, 17	modulation	0.2	0.3	9
780			217Hz			
810		GSM 800/900,				
870		TETRA 800,	Pulse			
	800-960	iDEN 820,	modulation	2	0.3	28
930		CDMA 850,	18Hz			
		LTE Band 5				
1720	1700-1990	GSM 1800;		2	0.3	28
1845		CDMA 1900;	Pulse modulation 217Hz			
		GSM 1900;				
1970		DECT;				
1970		LTE Band 1, 3,				
		4, 25; UMTS				
		Bluetooth,				
		WLAN,	Pulse			
2450	2400-2570	802.11 b/g/n,	modulation	2	0.3	28
		RFID 2450,	217Hz			
		LTE Band 7				
5240		WLAN 802.11	Pulse			
5500	5100-5800	a/n	modulation	0.2	0.3	9
5785		a/II	217Hz			



 Use of accessories and cables other than those specified or provided by the manufacturer of Ultra X could result in increased electromagnetic emissions or decreased electromagnetic immunity of Ultra X and result in improper operation.

#### **Cable information:**

Cable Name	Cable Length (m)	Shielded or not	Remark
Adapter Cable	1.2	No	1

2. Use of **Ultra X** adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, **Ultra X** and the other equipment should be observed to verify that they are operating normally.

#### 12.Statement

#### **Service Life**

The service life of Ultra X handpiece is 3 years.

# **Disposal**

The package should be recycled. Metal parts of the device are disposed as scrap metal. Synthetic materials, electrical components, and printed circuit boards are disposed as electrical scrap. The lithium batteries are disposed as special refuse. Please deal with them according to the local environmental protection laws and regulation.

### **Rights**

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