Ancar

DENTAL
INTELLIGENCE
with heart

S-7

USER MANUAL

June 2016, QS4 715 v.1

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1.- GENERALITIES

Thank you for purchasing the **S7** dental chair. This instruction manual contains information on the dental chair, including its configuration and maintenance.

CE This symbol means the unit is certified under Directive 93/42/EEC.

Notes

This symbol means **CAUTION**, **PRECAUTION**

Before starting-up the unit you must have read and fully understood the user manual. The chair must be in used in accordance with it.

Keep this manual in a safe place for future reference, for as long as you use the equipment.

Follow all safety standards.

It is the user's responsibility to keep the unit clean, disinfected and in perfect working order.

This dental chair is for the exclusive use of a professional, who should have the appropriate training and be a member of a dental association to practise as a dentist.

This equipment may only be installed and serviced by authorised technicians.

The electrical circuit at the premises where the unit is to be installed must satisfy the provisions in standard IEC 601.1 regarding protection against electric shock for class I equipment.

Antoni Carles, S.A. reserves the right to make any improvements or modifications to the dental unit without prior warning.

Under Directive 93/42/EEC, the dental chair manufactured by **Antoni Carles, S.A.** is class I equipment. In compliance with the provisions in the aforementioned Directive and standardised regulations EN60601-1, EN60601-1-2, MDD classification will have to be upgraded accordingly when installed and associated to any class IIa, IIb or III dental instruments, e.g. surgical lasers, electronic scalpels, X-rays or electric cauterizers, or incorporated into a dental unit.

2.- PRECAUTIONS

The unit should be installed in a bright place away from corridors or passageways, and should have adequate room to accommodate both the patient and the user.

The dental chair must be fixed either to the floor or to optional stabilization platform to guarantee stability.

Before moving the chair, the operator (Doctor, user) must ensure there is no-one (patient, guests, children) in the vicinity: be aware of people around the backrest area and legrest.

After using the unit, switch it off. Chair should remain switched off at the end of each working day. If the unit is to be out of use for a long period of time, disconnect it from the mains supply. Make sure the general power switch (fig. 4, "**D**") is turned off if the equipment is to be left without staff supervision.

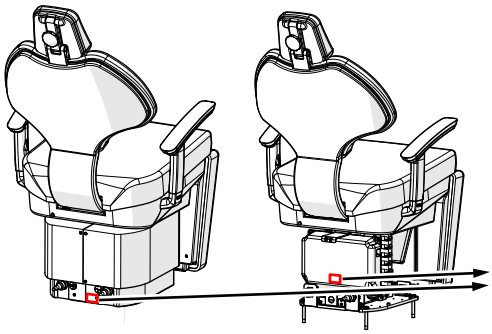
To prolong the working life of the lifting unit components, take care not to overload the chair.

NOTES ON INFLAMMABLE ANAESTHETIC MIXTURES

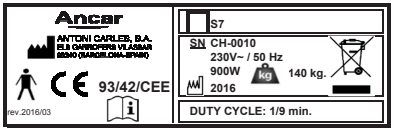
This equipment is not designed to work in operating theatres. Do not use the unit/chair in proximity of mixtures of flammable anaesthetic gas with oxygen or nitrogen protoxide.

3.- IDENTIFICATION

The identification tag, containing technical information required for connection, is by the general switch.



SN: CH (chair) + number
CH xxxx



4.- GUARANTEE

The Certificate of Guarantee must be completed. Please ask your dealer to fill in form through website (Distributor's zone / Guarantee Certificate) **within 1 month** of delivery of the device. Your dealer will handle a copy of its content.

The guarantee is only valid if the device has been used correctly and installed by an authorised technician.

Moreover, to comply with equipment traceability in accordance with Medical Devices Directive 93/42/EEC, the installation form must also be completed and kept as register by reseller.

Hire an authorised maintenance service. This will give you greater safety and prolong the life of the unit. Consult our Sales Dept.

5.- TECHNICAL DATA

Voltage	220-240 V~
Frequency	50-60 Hz
Power	1000 W
Electrical protection type	I
Operation type	Intermittent
Maximum load (patient)	160 Kg.
Unit standard 93/42/EEC	Class I
Insulation type	Type B
Unit net/gross weight	140 Kg. / 176 Kg.
Installation type	Permanent
Main fuse	T 2A / L /250V
Internal fuse Movement PCB	TT 2.5A / L / 250V
Auxiliary outputs	230Vac, 24Vac, 24Vdc
Auxiliary connection	Free contact pot. 250V/5A
Duty cycle	1 / 9 min

6.- ENVIRONMENTAL PROTECTION

All packaging materials are produced in respect for the environment and are fully recyclable: wooden pallets, cardboard, plastic bags and bubble-wrap. Collecting used materials helps collection and recycling and reduces waste material.

Antoni Carles, S.A. is obliged to satisfy the objectives set by Community Directives 2011/65/EC and 2012/19/EC.

Upholstery is phthalates free.

This symbol is only applicable for member countries of the European Union.

In order to avoid potential negative consequences for the environment or human health, this equipment should be disposed of (i) in EU member countries – in accordance with the WEEE (Waste Electrical and Electronic Equipment) Directive, and (ii) for all other countries, in accordance with local provisions and recycling laws.

EMC

The **S7** dental chair conforms to the basic requirements of Directive 93/42/EEC concerning medical devices, and complies with the design and construction requirements contained in standards EN60601-1 and EN60601-1-2 regarding the safety of Electrical Medical Equipment and Electromagnetic Compatibility, causing no electromagnetic disturbances and complying with immunity standards. See notes on Annex 1 for further detail.

ENVIRONMENTAL CONDITIONS

While it is in its packaging for transport and storage, the equipment can withstand being exposed for no longer than 15 weeks to environmental conditions that do not exceed:

a) ambient temperature margin from -20˚C to +50˚C.
b) a relative humidity margin of 10 % to 100 %, including condensation.
c) an atmospheric pressure margin of 500 hPa to 1060 hPa (from 500 mbar to 1060 mbar).

-Functioning conditions:
The unit must be installed in an environment with controlled conditions, free from dust and condensation and protected from direct sunlight.

d) ambient temperature margin from +10˚C to +40˚C.
e) a relative humidity margin of 30 % to 75 %, including condensation.
f) an atmospheric pressure margin of 700 hPa to 1060 hPa (from 700 mbar to 1060 mbar).

7.- CLAUSES

Antoni Carles, S.A. will not assume responsibility for damages caused by fire, natural disasters, third party activities or other accidents caused by operator negligence or misuse, or from using the equipment under unusual conditions.

Antoni Carles, S.A. will not assume responsibility for damages deriving from the improper use of equipment, causing a loss of business or loss of earnings.

Antoni Carles, S.A. will not assume responsibility for results of diagnoses made by a doctor using this equipment.

8.- TECHNICAL FEATURES

Vertical lift chair with synchronized folding movements in backrest and leg-rest, and extensible foot rest (optionally it can be disabled)

Ergonomically designed: 90˚ folding leg-rest. Improved accessibility to elderly and disabled people. Chair incorporates the Trendelenburg position.

Multi-position articulated headrest.

Ideal for aesthetic dental treatments, orthodontics and other treatments.

Reduction of visual impact thanks to its design. It provides a roomier cabinet impact.

Allows frontal view of the patient, midline vision without distortion, and to be more precisely in the study of occlusion.

Selection of two lift speed rate for precision treatments

Microprocessor-controlled movements:

- Automatic chair return-to-zero movement (configurable height).
- 3 programmable chair settings (configurable seat height and backrest).
- Automatic extension of leg-rest combined with backrest movement.

Safe movement of the seat and backrest of the chair, which are raised upwards until unlocked.

Anatomical high quality and hygienic upholstery. Phthalates free.

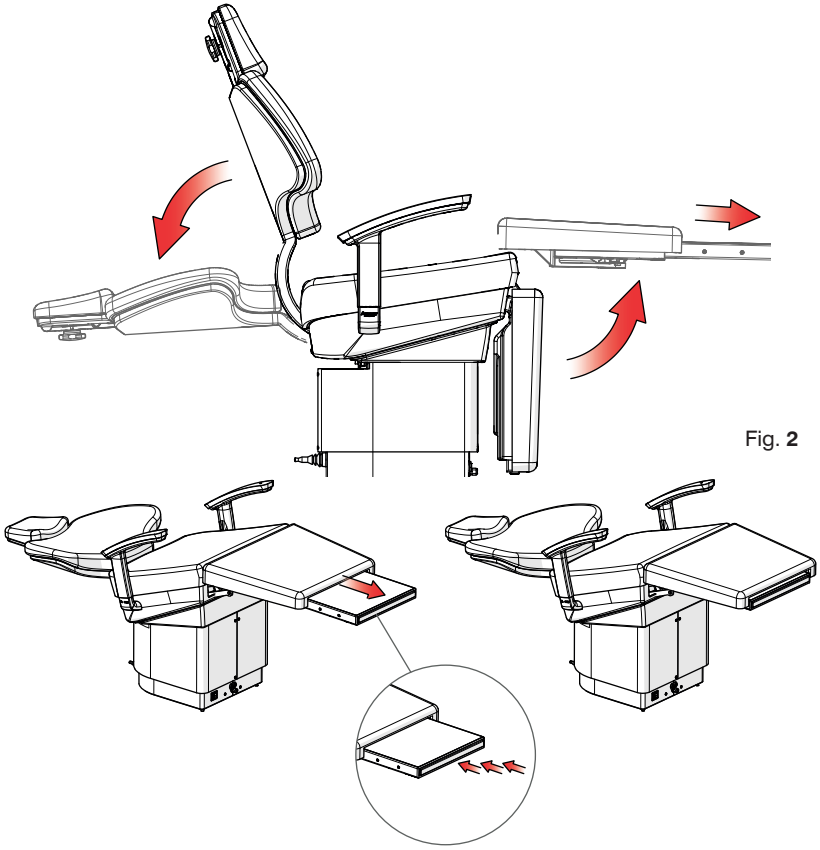


Fig. **2**

9.- DIMENSIONS AND TRANSPORTATION

The dental unit is suitably packaged and protected. It is delivered secured to a pallet.

It is essential that the box is not knocked when in transit, and under no circumstances must it fall to the floor. Great care should be taken when moving the equipment; we kindly remind you installation process must be carried out by technicians authorised by **Antoni Carles, S.A.**

Before assembling the unit, a technician, along with yourself and the authorised member of staff on-site should determine its best location with regard to comfort and ergonomics.

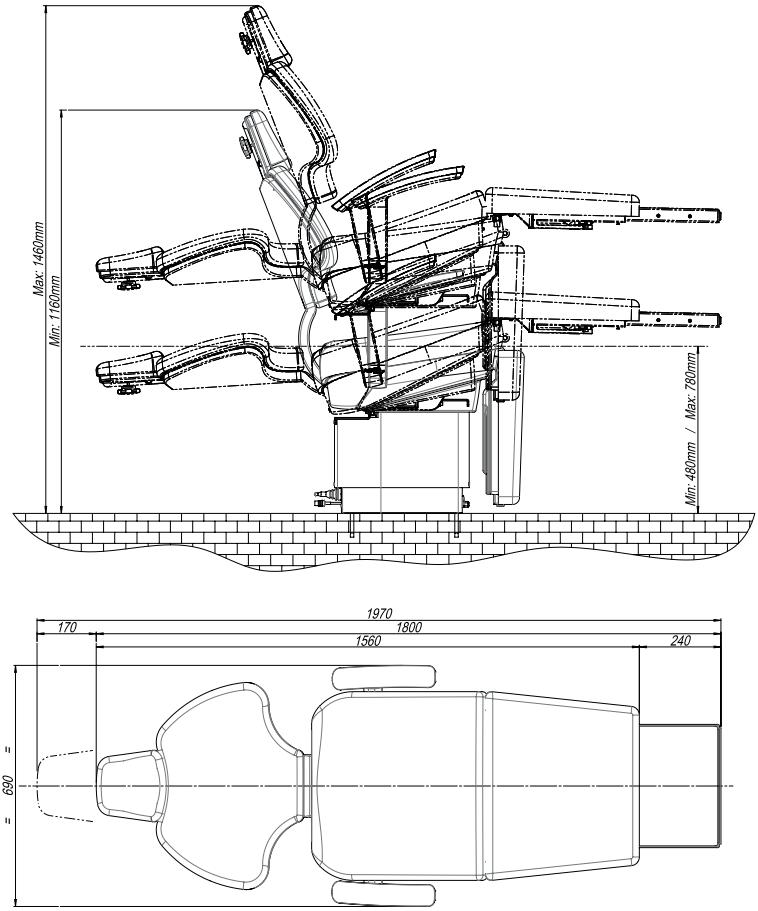


Fig. **3**

Should you have to move a pre-assembled unit, fit the chair first with the seat at its lowest position and the back raised, making sure the legrest is fully reclined and footrest retracted, keeping the chair as solid as possible.

Once in new position, remember to secure the chair to the floor.

10.- DENTAL CHAIR DESCRIPTION

(**A**) External cover of vertical lift motor
(**B**) Rear controls (manual and memory joysticks)
(**C**) Seat & Backrest
(**D**) On / off switch
(**E**) Memory record & Customization of vertical rate speed button.

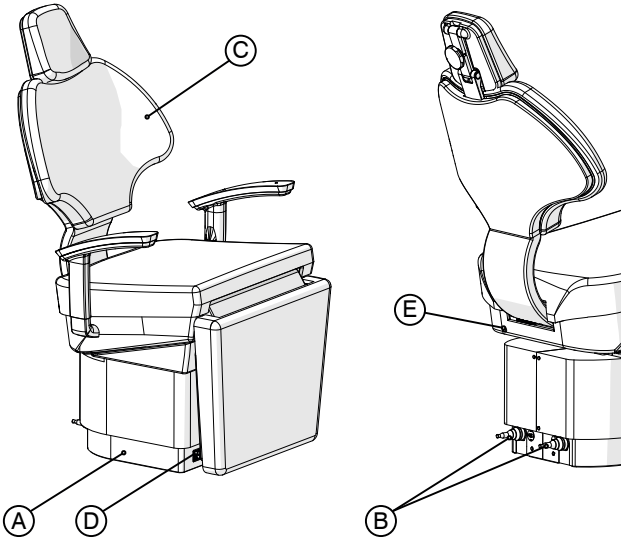


Fig. **4**

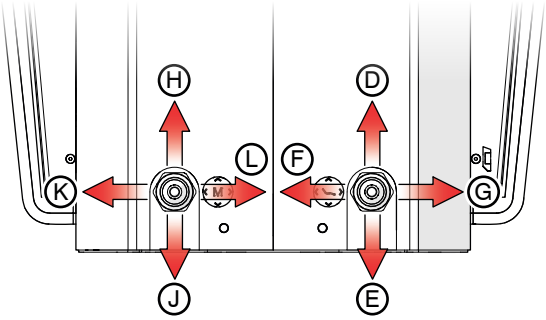
10.1.- Rear controls

Right joystick (manual movements)

(**D**) Raise chair; (**E**) Descend chair;
(**F**) Backrest recline to horizontal; (**G**) Backrest return to vertical.

Left joystick (memory movements)

(**J**) automatic reset movement
(**K**) Automatic movement to memory #3 position
(**L**) automatic movement to memory #2 position.
(**H**) automatic movement to memory #1 position



10.2.- Customization of movements

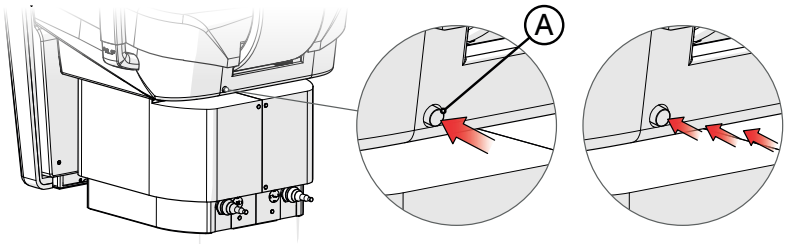
Modify a memory.

To modifiy a memory, once you have moved vertical seat and recline backrest to the desired position, please maintain pressed at the same time the button A at the rear of the backrest and the left joystick in the associated memory. You can update all four available memories.

Vertical speed rate

By pressing three times you swap working mode of vertical movement.

Two motors of vertical movement move at the same time or sequentally. It means you carry out same stroke at simple speed or at double rate.



Extension of footrest

You enable / disable extension of footrest by pressing three times at the safety band in the edge of the footrest.

When activated, one contact will act as a safety block to stop movement in motion. Footrest will be operative in a syncronous way with backrest: it will extend when backrest is reclining, and will retract when backrest returns to vertica.

Note: when activating the extension of footrest, change of vertical speed rate or saving a memory position, the electronics will perform an audible beeping sound to confirm. If you do not hear this sound, switch off the unit and contact your technical service provider.

10.3.- Replacement of fuse

Safety:

Turn off chair (general switch, “A”), unplug power cord from mains.

You will get access to fuse’s receptable (**B**) by means of a screwdriver.
Replace with the one provided at accessories bag (T2A / L / 250V).
It is preferable you contact authorised technicians and do not replace fuses by yourself.

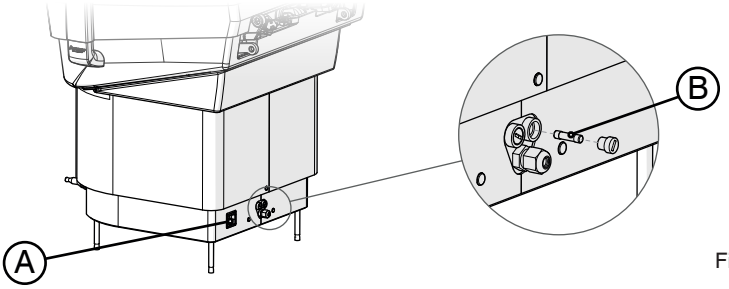


Fig. **7**

10.4.- Headrest

Thanks to its articulated movement, this head support allows the patient's head to be positioned easily and ideally, according to the treatment required. It can be easily adjusted lengthways, as shown in Fig. 8.

OPERATION

- The lengthways adjustment is easily connected. The piece is gripped firmly with the position held internally.
- Turn piece on its back to achieve the desired inclination. Once the headrest is set in the optimal position, lock the mechanism by turning lever in a clockwise direction.

The head support upholstery can be replaced simply by removing it from the base, allowing comfortable maintenance.

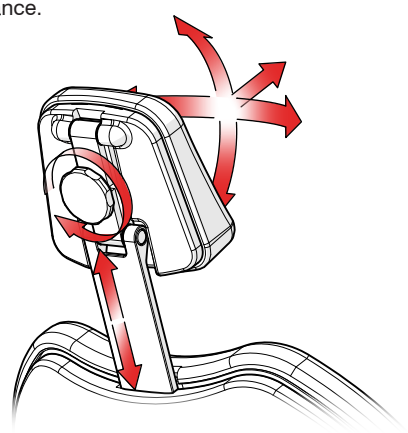


Fig. **8**

10.5.- Armrest

To rotate the armrest (**B**), it must be pulled upwards (kept in its housing) until the rotation mechanism is released, allowing it to be turned until reaching the track limit where it stops. To return the armrest to its initial position, simply lift it and turn it inside until it locks automatically (Fig. 9).

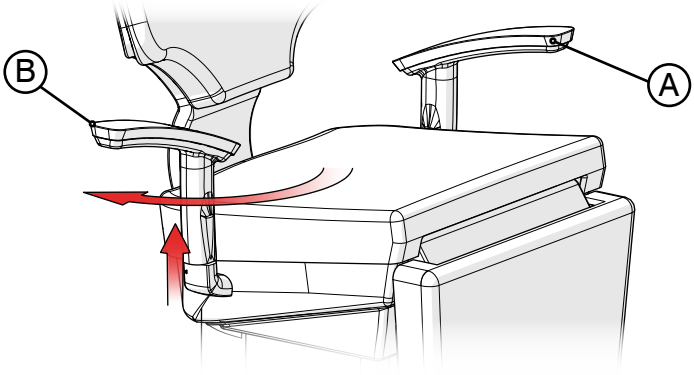


Fig. **9**

Left armrest (**A**) can also be rotated.

11.- SAFETY MOVEMENTS

- The dental chair includes mechanical safety stops for the chair and backrest, ensuring correct manoeuvering and positioning.
- Motor overload control through integrated heat sensors. Should the heat sensors go off, wait 15 minutes for them to cool.
- The backrest safety feature, in the event of pressure or knocks against other objects during manual or automatic lowering, suspends all chair movement (seat and backrest) after lifting it a few centimeters.
- The legrest safety feature, in the event of pressure or knocks against other objects during manual or automatic reclination, suspends all chair movement (seat and backrest) after lifting it a few centimeters.
- The edge at the footrest safety band locks all movements of the chair (seat and backrest) once the switch is activated.
- If the chair moves to a memorised location, pressing any direction on control movement joysticks (manual or memory) or the edge of footrest, it will stop the chair.

12.- CLEANING AND STERILISING

Ancar recommends using neutral products in order not to damage the most sensitive parts. Cleaning the equipment with products with high chemical content can damage the polyurethane parts and the upholstery. When cleaning, take care not to wet the equipment too much, as its interior is made up of electrical components. Various specialists in the dental hygiene industry offer a wide range of cleaning products for achieving optimum results.

All Ancar's equipment is carefully cleaned with ECO-JET1 Cattani Magnolia disinfectant spray before its delivery.

Do not apply the product directly on the equipment. Apply the product on a clean cloth and later clean the equipment with the cloth.

For general equipment cleaning (aluminium parts), use any product with antimicrobial, fungicidal, bactericidal, or virucidal action compatible with the medical industry (e.g. Metasys, Dürr, ...).

Clean the upholsteries with cleaning products indicated for upholsteries from the market (e.g. Metasys, Dürr, ...). Use a neutral soapy solution if no disinfection is needed.

For the polyurethane areas such as the cover of the connection box and the cover of the lifting mechanism, use specific products for sensitive parts from the market. If no disinfection is needed use a moist cloth with a soapy solution. The use of concentrates, detergents or abrasive to eliminate difficult stains is not recommended.

Use an aqueous solution containing alcohols and quaternary ammonium compounds.

Respect the actuation time, let it dry. Apply as spray to disinfect difficult access areas.

Also use in small objects and surfaces in the vicinity of the patient which have become contaminated and are not able to be disinfected thermally or by immersion in a solution.

Always disconnect the unit from the mains before carrying out any procedures.
Do not wet or flood the unit with water.
Do not use domestic detergents or disinfecting foams.

Cleaning & disinfecting general accessible parts

Use any product with an antimicrobial, fungicidal, sporicidal or virucidal action that is compatible with the medical industry. Use a washable universal cleaner based on nonionic surfactant in aqueous solution. Apply diluted in water (1-2%, 10-20 ml per liter water). Do not rinse or dry until the end of the actuation time. Daily application (eg. at the end of the day).

ANNEX 1. SAFETY NOTES

ELECTRICAL SAFETY MEASURES

It is advisable not to use mobile phones in proximity of the dental unit. Observe regular hospital standards.

In the event of an overload in the chair, the thermal protection built into one of the motors (lift, backrest, footrest) may have been triggered and suspended all operations. Wait 15 minutes for it to reset. Should the problem persist, call the authorised technical service line.

Do not add additional multiple intake bases or extensions to auxiliary intakes available on electronic charts.

NOTES ON ELECTROMAGNETIC INTERFERENCE

Electronically-controlled instruments may harm patients fitted with pacemakers and/or hearing aids due to possible electromagnetic interferences.

The patient may be at risk from the approximate use of electronic scalpels or other electric/ electronic equipment which may generate electromagnetic or other types of interference, causing the unit to malfunction. It is advisable to switch off the unit at the mains before using such equipment.

Risk of interference with other separate equipment (such as an implant motor) Disconnect the dental unit power supply to prevent any movements indirectly caused through faults and/or through accidental activation of the controls.

This device meets EMC standard (EN 60601-1-2:2007 + AC:2010)

a) this medical electrical device requires special precautions regarding EMC standard and should have to be installed and set up accordingly EMC info included in enclosed documents.

b) Portable and mobile RF communication equipment (e.g., cell phones) could affect medical devices.

c) Accessories usage, transducers, wires others than specified or supplied by manufacturer as replacement parts may result in increased emissions or decreased immunity of this device.

d) This device should not have to be used close to other equipment. If necessary this proximity, then it must have to be checked that system to verify final configuration operates correctly.

Electromagnetic emissions

Essay	**Level**	**Remarks**
Radio frequency radiated (30-1000 MHz) Continuous conducted (0.15-30 MHz)	Class B	Matches with domestic locations requirements with respect close equipment.
Discontinuous conducted	Conforms	Low emissions, so it is suitable for use in all establishments, including domestic ones. It is not probable could provoke any disturbance with close electronic devices.
Voltage fluctuations		
Harmonic current		

Separation of distance recommended in between portable radiofrequency communications devices and cell phones and dental unit.

Dental unit is designed to be used in an electromagnetic environment whereas radiofrequency disturbances are controlled. User of dental unit could avoid EMC interferences keeping a minimum distance with transmitter devices as recommended, depending on maximum output.

Maximum output nominal value of transmitter in watts	**Separation distance depending on transmitter frequency in meters**		
	150kHz – 80 Mhz	**80 Mhz – 800 MHz**	**800 Mhz – 2.5 GHz**
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

These indications could not be of application as electromagnetic propagation could be affected by absorption and reflection from structures, objects and people.

Electromagnetic immunity

Essay	**Levels**	**Remarks**
Electrostatic discharge	Air discharge: 2, 4, 8 kV Contact discharge: 2, 4, 6 kV	Better behavior with wood or ceramic tiles. If synthetic material, humidity > 30%
Fast transients in burst immunity	2 kV I/O ports	Mains power quality should be that of a typical commercial or hospital conditions.
Surge transients	Common mode 0.5, 1, 2 kV Differential mode 0.5, 1 kV	
Low frequency magnetic field immunity	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location.
Current injections	3V rms (150 kHz – 80 Mhz) 3 V/m (80MHz – 2.5 GHz) Signal and control ports & AC / DC supply, access by ground terminal	Separation recommended 1.2 √P (up to 800MHz) 2.3 √P (from 800MHz) P is the maximum output power rating of the transmitter
Voltage variations	Short interruptions and voltage dips	If user requires continuous operation while interruptions in mains power supply, it is recommended to get a non-interruption electrical alimentation.

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Subject to design and/or specification changes without prior warning. Made in Europe.

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