Be eHea D60/Be eHea D50A

Be eHea D50/Be eHea D50C

Defib illa /M i

Instructions for Use

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I ellec al P e S a e e

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WARNING

- **Thi e i e be ea ed b h ha e bee ai ed i i e a i . The e a h ld be ai ed i ba ic life , ad a ced ca diac life he e e ge c edical e e.**
- **l i i a f he h i al ga i a i ha e l hi e i e ca a ea able e ice/ai e a ce la . Neglec f hi a e. l i achi e b eakd e al i j .**

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P eface

Ma . al P. e

This manual contains the instructions necessary to operate the product safely and in accordance with its function and intended use. Observance of this manual is a prerequisite for proper product performance and correct operation and ensures patient and operator safety.

This manual is based on the maximum configuration and therefore some contents may not apply to your product. If you have any question, please contact us.

This manual is an integral part of the product. It should always be kept close to the equipment so that it can be obtained conveniently when needed.

I e ded A. die ce

This manual is geared for clinical professionals who are expected to have a working knowledge of medical procedures, practices and terminology as required for monitoring of critically ill patients.

Ill. a i

All illustrations in this manual serve as examples only. They may not necessarily reflect the setup or data displayed on the equipment.

C e i

- Italic text is used in this manual to quote the referenced manuals, chapters, sections and formulas.
- **B ld e** is used to indicate the screen texts and names of hard keys.
- is used to indicate operational procedures.

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1 Safe

1.1 Safe If ai

DANGER

€ I dica e a i i e ha a d ha , if a ided, ill e . l i dea h e i . i j. .

WARNING

€ I dica e a e ial ha a d . afe ac ice ha , if a ided, c . ld e . l i dea h e i . i j. .

CAUTION

€ I dica e a e ial ha a d . afe ac ice ha , if a ided, c . ld e . l i i e al i j. d. c / e da age.

NOTE

€ P ide a lica i i he . ef. li f ai e . e ha . ge he f . d. c .

1.1.1 Da ge

DANGER

€ The e . i e deli e . 360 J felec ical e eg. U le e l . ed b f ll i g he ided b hee . i e , hi elec ical e eg a ca. e ei . i j. dea h. D a e e ae hi e . i e . le h . ghl fa ilia i h he ea i a df. c i f all c l , i dica , c ec , a d acce ie .

€ T a ide l i ha a d, d . e hee . i e i he e ece f ge - icha he e , fla able a e he ic , he fla able age (. cha ga li e). Kee hee . i e a d he ea i ge i e d a d clea .

€ Defib illa i c. e ca ca. e ea b a de e e ei j. e e dea h. Kee di a ce f he a ie e al de ice c ec ed he a ie d. i g defib illa i .

1.1.2 Wa i g

WARNING

€ O l . e a a d acce ie ecified i hi a . al. F ll hei . c i f . ea d adhe e all a i g a d ca. i .

€ Thi e . i e i . ed f i gle a ie a a i e.

€ The e . i e i i e ded be. ed i hi he Mag e ic Re a ce (MR) e i e .

€ D di a e ble hee . i e . l c ai e a e iceable c e a d da ge . high lage a be e e . C ac a. h i ed e ice e elf e ai.

€ Bef ec ec i g hee . i e hee e al e . l , check ha he lage a d f e . e c ai g a e he a ea h ei dica ed hee . i e ' label i hi a . al.

€ Bef e each . e, he e a . check hee . i e c di i e . e ha hee . i e i ead f e a i .

- T a id i k felec ic h ck, hee . i e . l bec ec ed ai e i h ec i ea h. If a ec i ea hc d. c i ided, e a ei ba e e, if ible.
- D . e he . l i le able cke . le (MPSO) AC ai e e i c d . l . e ha he . f hei di id. alg . d leakage c. e d e e ceed he all able li i .
- Bef e . . i g he e i e a i , he e a . e if ha hee . i e , c ec i g cable a d acce ie a e i c ec ki g de a d e a i g c di i .
- D e cl. i el el a. dible ala f a ie i i g. Adj. i g ala l. e al le el . i g ff ala . d a e . l i a ie ha a d . C. i e ala e i g acc di g a ie i . a i a d kee a ie . de cl e . eilla ce.
- Ph i l gical da a a d ala e age ided b hee . i e h . ld be. ed a he le ba i f diag i he a deci i . The . be. ed i c j. c i ih cli ical ig a d . Mi i e e i g ea . ed al. e he a a e e a e . l i a ie ha a d .
- D lace hee . i e acce ie i a i i ha igh ca. e i fall he a ie .
- D a e a e hee . i e . le he e. a e ified bec ec .
- Place a d ec. ecable a d . bi g ca ef. ll e e f . bli g, e a gle e a d a ie a g. la i .
- The f a ee . i e c igh i lel ed b Mi d a . N ga i a i i di id. al hall e dif i g, c i g, e cha gi gi a he i fi ge e i i a f b a ea ih . d. e e i i .
- Di c ec he defib illa i - f de ice f he a ie d. i g defib illa i .
- Make . e he ch . i . e i a lied hi e . i e a d hei . ig al i c ec if ece a .
- D defib illa e a a ie h lie he e e alg . d.
- D e f a f. c i al check if hee . i e i c ec ed i h a a ie . O he i e he

- A hee d fi e icelife, hee .i e , a ella i acce ie , . be di ed fi c lia ce ih heg. ideli e eg. la i g hedi al f . ch d. c . If . ha ea . e i c ce i g di al f hee .i e , lea ec ac . .
- Ne e cha gea d deli e h ckf e . e l i -cli ical i . a i . O he iee .i e da age c . ld cc. .
- Ob e a ce f hi a . ali a e e . i i ef e d. c e f a cea dc ec e a i a de . e a ie a d e a afe . .

1.1.4 N e

NOTE

- Thee .i e . ea ai l. g a i la i ea he ai e . D l ca e he e .i e i a lace diffic. l e a e he ai l. g.
- I al . e, he e a i e ec ed bei f f hee .i e . .
- The f a e a de el edi c lia ce i h IEC62304.
- Thi a . ali cl. de i f a i ela ed allfea . e f hee .i e . . S efea . e a be a ailable . e .i e . .
- Kee hi a . ali he ici i f hee .i e ha i ca be b ai ed c e ie l he eeded.

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2.1.6 C _ a-i dica i

¾ AED

The AED mode is contraindicated in the treatment when the patient is showing any of the following:

- Â Consciousness
- Â Breathing
- Â Detectable pulse or other signs of circulation

¾ Manual Defibrillation

Manual defibrillation is contraindicated in the treatment when the patient is showing any of the following:

- Â Consciousness
- Â Breathing
- Â Detectable pulse or other signs of circulation

2.1.7 Side-effec

None.

WARNING

€ **Acc di g _ he c cl. i f cli ical e al. a i a d e id. al i k e al. a i , f _ he i _ e ded a ie _ , he e i k ide effec _ ha ca cc. d. i g af e _ he . e f _ he 9 edical de ice. A d _ he e i eed f _ he e a _ 9 ake e _ a e a a i . Th. , e id. al i k a cia ed i h . i g _ he 9 edical de ice h . ld be di cl ed**

2.2 A lied Pa _

The applied parts of the equipment are:

¾ ECG electrodes and leadwires

¾ SpO_2 sensor

¾ NIBP cuff

¾ Temp probes

¾ IBP/ICP transducer

¾ CO_2 sampling line/nasal sampling cannula and airway adapter

¾ Multifunction electrode pads

¾ External defibrillation paddles

¾ Internal defibrillation paddles

¾ CPR sensor

WARNING

€ **Whe _ he e . i 9 e _ i laced a a a 9 bie _ . e 9 e a e ab e 55 C, _ he . face e 9 e a . e f a lied a _ h . ld be li 9 i _ bel . 58 C.**

3 E.i e Peaai

3.1 E.i e Peaai Safe If ai

WARNING

- U e l i alla i acce ie ecified b Mi da .
- C ec l a ed de ice hi e.i e .De ice c ec ed hee.i e e. ee he e.ie e f hea licable IEC a da d (e.g. IEC 60950 afe a da d f i f ai ech l g e.i e a d IEC 60601-1 afe a da d f edical elec ical e.i e). The e c fig. a i . ee he e.ie e f he IEC 60601-1 edical elec ical e a da d. A e el h c ec de ice hee.i e ' ig ali ./ . a e e ible f idi g ide ce ha he afe ce ifica i f he de ice ha bee e f edi acc da ce he IEC 60601-1. If . ha ea .e i , lea ec ac Mi da .
- The e.i e a d acce ie c ec ed hee.i e ae.iable f . e i hi he a ie e i e .F he de ice a d acce ie c ec ed hee.i e , c .l c e di g a . fac . e f he .iabili i hi he a ie e i e .
- If i i e ide f hee.i e ecifica i he he a a ic.la c bi a i ih he de ice i ha a d . , f e a le, d. e . .a i f leakage c. e , lea ec .l he a . fac . e a e e i he field. A de e i a i . be ade ha he ed c bi a i ill ega i el affec he de ice he el e he a ie | afe .

CAUTION

- The e.i e h .ld be i alled b a. h ied Mi da e el.
- Whe di i g f he ackagi g a e ial, be . e b e e hea licable a ec l eg. la i a d kee i . f child e ' each.
- Bef e. e, e if he he ackage a ei ac , e eciall he ackage f i gle. e acce ie . l ca e fa da age, d a l i a ie .
- Make . e ha hee.i e e ea ige i e . ee he ecific e.ie e . O he ie . e ec ed c e.e ce , e.g. da age hee.i e , c .ld e.l .

NOTE

- P. hee.i e i al ca i he e . ca ea il ie a d e a e hee.i e .
- Sa e he acki g ca ea d ackagi g a e ial a he ca be. ed if hee.i e . be e hi ed.

3.2 C ec i g he P e S. l

WARNING

- Al a . e he acc a i g e c d deli e ed ih hee.i e .
- Bef ec ec i g hee.i e he e . l , check ha he lage a d fe.e c ai g a e he a ea h ei dica ed be ide he e i . f hee.i e .
- U e he ba e if he i eg i f he ec ie ea h c d. c he ec ie ea hi g e i he i alla i i i d. b .

WARNING

€

3.7 T. i g Off he E . i e

CAUTION

€ P e a dh ld he e ichf 10 f cibl h. d hee . i e ifi c . ld be h. d all . Thi a ca. e l f a ie da a.

NOTE

€ T e e he cha ge f l i gi ca e f . dde e fail. e, hee . i e a e he e i g i eal i e. l ca e fa e a e fail. e, if he e i e ed i hi 60 , he e . i e e ill e . e i hallac i e e i g . cha ged; if he e i i e . edf e ha 120 , hee . i e beha e he a ea i i all . ed ff; if he e i e ed i hi 60 120 , hee . i e e ill e . e i hallac i e e i g . cha ged, beha e he a ea i i all . ed ff.

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4 The a ˛ P e a a i

4.1 Checki g˛ he Pa ie ˛ C ˛ ac I dica

NOTE

€ I i ec e ded˛ e f ˛ he defib illa i a a ie ˛ ˛ he ˛ he a ie ˛ c ˛ ac i dica ill i a e i g ee . If˛ he a ie ˛ c ˛ ac i dica ill i a e i a ge, i al ca be˛ ed f ˛ he defib illa i . H ˛ e e ,˛ he e ec ed effec a˛ ˛ be achie ed i ˛ hi c di i .

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5 AED

5.1 AED Safe I f a i

DANGER

- Defib illa i c e ca ca e e a b a de e e i j e e dea h. D . ch he a ie a e al bjec (i cl di g bed g e) c ec ed he a ie d i g defib illa i .
- A id c ac be ee a f he a ie ' b d . ch a e ed ki f head li b , c d c i e fl id . ch a gel, bl d, ali e, a d e al bjec . ch a a bed f a e a e che hich a ide . a ed a h a f he defib illa i g c e .
- D i g defib illa i , d all elec de ad c ac each he c ac i h ECG elec de , lead i e , d e i g , e c. C ac i h e al bjec a di e c e a a f he hea , hich e . l i elec ical a ci g a d a ie ki b. .

WARNING

- M i a ifac a dela a al i affec he ECG ig al e . l i g i a i a ia e h ck h ck ad i ed e age. D . ch he a ie d i g ECG h h a al i cha gi g i he AED de.
- Ai cke be ee he a ie ki a d elec de ad ca ca. e elec ical a ci g a d a ie ki b. d i g defib illa i . T a id adhe e ce a d ai cke , ake . e elec de ad a e c le el adhe ed he a ie ki .
- D . e d ied- . elec de ad .

CAUTION

- I e ha dli g f elec de ad d. i g age bef e . e ca da age he elec de ad . Di ca d he elec de ad if he bec e da aged.
- F a ie i h i la able ace ake , he e i i i a d ecifici f AED alg i h a be i ai ed.

NOTE

- S cce f. l e . ci a i i de e de a a iable ecific he a ie ' h i l gical a e a d he ci c a ce . . di g he a ie e e . Fail e ha e a . cce f. l a ie . . c e i a eliable i dica fe . i e e f a ce. The e e ce ab e ce fa . c. la e e he a fe fe e g d. i g elec ical he a i a eliable i dica fe e g deli e e . i e e f a ce.

5.2 AED P ced e

NOTE

- A e i -la e al lace e f ad l a ie , a d a e i - e i lace e f edia ic a ie a e ec e ded lace e f defib illa i i h elec de ad .
- F defib illa i f edia ic a ie . de 8 ea , edia ic elec de ad h . ld be ed.
- If edia ic elec de ad a e a ailable, he ad l elec de ad a be ed i ead, a d e Pa ie Ca eg Ped.
- The Sh ck b e ed deli e a h ck. The e i e ill a a icall deli e a h ck.
- I eda ce i he e i a ce f d be ee elec de ad e e al addle . T deli e a effec i e di cha ge f e eg , he i eda ce be e c e. The deg ee f i eda ce a ie i h he a ie . l i affec ed b he fac , . ch a he e e ce f che hai , i e, a d l i de he a ie ki . If he I eda ce high. Sh ck deli e ed e age a ea , ake e ha he a ie ' ki ha bee d ied a d ha a che hai ha bee cli ed. If he e age e i , e lace he elec de ad he ad cable i h a e e.

6 Ma . al Defib illa i

6.1 Ma . al Defib illa i Safe I f a i

DANGER

- Defib illa i c. e ca ca. e e a b a de e e i j. e e dea h. D . ch he a ie a e al bjec (i cl. di g bed g. e) c ec ed he a ie d. i g defib illa i .
- A id c ac be ee a f he a ie ' b d . cha e ed ki f head li b , c d. c i e fl. id . cha gel, bl d, ali e, a d e al bjec . cha a bed fa e a e che hich a ide. a ed a h a f he defib illa i g c. e .
- D. i g defib illa i , d all elec de ad a d addle c ac each he c ac ih ECG elec de , lead ie , de i g , e c. C ac ih e al bjec a di e c. e a a f he hea , hich e. l i elec ical a ci g a d a ie ki b. .
- D. i g a . al defib illa i , ake . e . ha d a ed a d fee f c d. c i e gel a id h ck ha a d.

WARNING

- D. i g ch i ed ca di e i , if i g a ie ' ECG h . gh e e al addle , a ifac i d. ced b addle e e a e ble a R- a ea d igge a defib illa i h ck.
- D . ec d. c i e li . id. U e l c d. c i e gel ecified b he e . i e a . fac . e .
- If e e al addle a e. ed f defib illa i , a l he e e al addle igh l a d e e l he a ie ' che e . eg d ki c ac .
- Cli icia . elec a a ia e e g le el f defib illa i f edia ic a ie .

CAUTION

- Acce i g he Ma . al Defib de ca be c fig. ed a a d ec ed. Make . e . k a d e e be he a d. O he i e he a . al defib illa i he a ca be deli e ed.
- Clea he c d. c i e gel f he e e al addle a he c le i f he he a e e he addle f bei g c ded.
- P i . i g hee . i e , di c ec he a ie f alle . i e ha i defib illa i - ec ed.
- Ne e cha ge a d deli e h ck f e . e l i -cli ical i . a i . O he i ee . i e da age c . ld cc. .

NOTE

- I eda ce i he e i a ce f . d be ee elec de ad e e al addle . T deli e a effec i e di cha ge f e g , he i eda ce . be e c e. The deg ee f i eda ce a ie i h he a ie . l i al affec ed b he fac , . cha he e e ce f che hai , i . e, a d l i de he a ie ki . If he I eda ce T High, Sh ck N Deli e ed e age a ea , ake . e ha he a ie ' ki ha bee d ied a d ha a che hai ha bee cli ed. If he e age e i , e lace he elec de ad he ad cable i h a e e.
- Ala a e i ched ff a . a ica ll a d he Ala Off e age i di la ed he he e . i e e e e hea a ch . defib illa i de. Ala e ai ff . il ggled b e i g he Ala Pa. e b. , he S c de, he M i de Pace de i e e ed.
- Defib illa i i al a e f ed h . gh addle elec de ad . H e e , . ca al . e

6.4.1 S ch i ed Ca di e i P ced e

NOTE

- D i g ch i ed ca di e i , he h ck ill be deli e ed he hee i e de ec he e R a e. If elec de elec de i e al addle i h b a e ed, h ld e a d h ld he Sh ck b hee i e il he h ck i deli e ed. If e e al addle a e ed, h ld e a d h ld he Sh ck b b h hee e al addle il he h ck i deli e ed. If i e al addle i h a b a e.

Thi age i e i all lef bla k.

7 CPR A i a ce

7.1 CPR A i a ce Safe I f a i

WARNING

- Pe f CPR a aie fi g . dif ible. Whe . e f CPR a aie l i g a a e , a backb a d . be. ed li i he a . fc e edde h hich i ab bed b he a e . De e di g cha ac e i ic f he a e , backb a d a d aie , he c e ai de hd e g. a a ee ha he aie che i c e ed b 50 .
- Whe he aie i b ea hi g i h high f e . e c i he ea e f high-f e . e c e ila i , he CPR a i a ce di . bed b he h acic e e a ide i acc. a e feedback. Y . h . ld c . c e i b . elfa d el he c e i a e ided b he CPR a i a ce i . ch c di i .
- The CPR a i a ce i i e ded f . ei a i ge i e , . cha a a b. la ce. If . ed d. i g aie a , he CPR a i a ce a ide i acc. a e feedback. If CPR i i dica ed i a i ge i e , d el feedback ided b he CPR a i a ce i . ch c di i .

NOTE

- The CPR e i a ailable i he a ke f UK, Ge a a d F a ce.

7.2 CPR Me e

WARNING

- The CPR e e . d d i dica e i f a i ega di g he aie ' c di i . Beca. e aie a. ca cha ge i a h i 49a. e

7.3 CPR Feedback

NOTE

- Whe he ie . i ieee ceed fie i . e, a CPR e e i a. aicall ge e a ed.

7.4 CPR Q. ali (CQI) M i i g

WARNING

- CQI i i gi i e ded f edia ica d e a al a ie .
- CQI e . l h . ld be. eda he leba i f diag i he a deci i . l i i e ded e lace hec e e j. dg e fa cli icia . CQI i i g . be. edi c j. c i i h he a ie ' edical hi , he ca. e f hea a ack, a ell a he cli ical j. dg e .

NOTE

- A lice ei e . ied f CQI i i g.

CAUTION

- U e ec ed ded SO_2 e a da l i a e ie.
- A id i g he ea . e e ie.
- A l he SO_2 e e l . If he SO_2 e i e l a lied a g S O2 e i . ed, e e . CQI c . ld e . l . F ei f ai , ee 14.3 SpO_2 Display.

8 N i a i e Paci g

8.1 Paci g Safe I f a i

WARNING

- Hea a e a d ela ed ala a be. eliable d. i g aci g, . h . ld al a kee he a ie . de cl e . illa ce. The i dica ed hea a e ela ed ala ca be. ed a he le ba i f he a ie ' e f. i a. .
- M i i g ECG al e i e i e e . gh e if ha he a ie ' hea i idi g ca diac . . . The a ie ' e e aci g hall be e ified b ig f i ed ca diac . . , . ch a a al able . l e a e he a ea he a e hich ace . l e a e bei g deli e ed, a i e i bl d e . e, i ed ki c l .
- T a id a ible h ck ha a d, be ca ef. l a l he elec de ad he a ie d. i g aci g.
- If . a e. i g he aci g f. c i i h ba e e a d he ala L Ba e , i e e ed, c ec he e . i e e e al e . l i all a f. ll cha ged ba e .

CAUTION

- Acce i g he Pace de ca be c fig. ed a a d ec ed. Make . e . k a d e e be he a d. O he i e he aci g he a ca be deli e ed.
- F ea e f he a ie i h a i la ed de ice , . ch a e a e ace ake ca di e e -defib illa , c . l a h icia a d he i . c i f . e deli e ed i h he de ice.
- P l ged i a i e aci g a ca. e a ie ki i i a i a d b. . Pe i dicall i ec he . de l i g ki a d cha ge ECG elec de a d elec de ad .

NOTE

- If aci g i i e . ed f a ea , . . elec S a Paci g e . e aci g.
- I he Pace de, . ca cha ge he a ie ' i e al aced a . f he ECG Se . e . .
- I he ca e ha elec de ad l c ac he a ie , he ala Pace S ed Ab all, a d Pad Off, a be e e ed.
- Elec de ad a e a a ailable ch ice f he . ce f ECG a ef i he Pace de.
- I he Pace de, a h h ia a al i i . ed a d a ailable a h h ia ala a e a . le, e ic. la ib illa i a d e ic. la ach ca dia.
- The i i g aci g f. c i a be. able i he e e ce f ESU he elec ic de ice .

8.2 Ch i g he Pace M de Se i g

NOTE

€ U e he de a d de aci g he e ible. O l . e he fi ed de aci g he he ea e i e fe e ca. i g R- a e. eliable a ailable ECG elec de .

8.2.1 De a d M de Paci g P ced. e

CAUTION

€ R . i el a e he a ie ' ca diac . . .

NOTE

€ Paci g ill a if he ei a ble i h he ad cable c ec i , ad a ie c ec i , ECG i i g elec de c ec i . If a i . a i cc. , a e age illa ea i he ace i f ai a ea ale . . ha a lead i di c ec ed ha he elec de ad ha e a c ec i .

8.2.2 Fi ed M de Paci g P ced. e

NOTE

€ F fi ed de aci g, R- a e a ke d a ea he aced bea .

9 M i i g P e a a i

9.1 Defi i g he M i i g Di la

9.1.1 Se i g he S ich f a Pa a e e

NOTE

- Whe a a a e e i a . all i ched ff, . ca i hi a a e e e e if ela ed acce ie a ec ec ed.

9.1.2 Defi i g he N al Sc ee Di la

NOTE

- ECG a ef a d . e ic a eal a di la ed he fi li e f he a a e e a ef a ea a d . e ic a ea.

9.2 F ee i g Wa ef

NOTE

- Y . ca ie he f e a ef f . 120 ec d .

9.3 Ca e a Sh i g

WARNING

- D l k aigh a he ca e a backligh .
- The ca e a i . ed f aki g h f he a ie e c e, a a e i f he a ie i ac .

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10 Ala

10.1 Ala l d c i

NOTE

- Whe . l i le ala f diffe e i i le el cc. i . l a e . l , hee . i e elec he ala f he highe i i ligh he ala la a d i . e he ala e.
- Whe . l i le ala f diffe e i i le el cc. i . l a e . l a d h . ld be di la ed i he a e a ea, hee . i e l di la he e age f he highe i i ala .
- Whe . l i le h i l gical ala f diffe e i i le el cc. i . l a e . l a d h . ld be di la ed i he a e a ea, hee . i e di la he high i i ala , hile he edi . a d l i i ala a e di la ed ci c. la l .

10.2.1 Se i g Ala T e P e ie

NOTE

- Whe he ala l. e i e 0, he ala . di . ed ff a d he a. di ff b li di la ed i he ala a . a ea.
- Y . ca e he l. e f high i i ala if Ala V l. e i e 0.

10.2.2 Se i g he S ich f S O_2 De a Ala Off

WARNING

- If . ich ff he S O2 De a ala , hee . i e ill ala he he a ie ' S O_2 i e e el l . Thi a e . l i a ha a d he a ie . Al a kee he a ie . de cl e . eilla ce.

10.2.3 Se i g he S ich f A ea Ala Off

WARNING

- If . ich ff he a ea ala , hee . i e ill i . e he a ea ala i ca e ha a ea ha e . Thi a e . l i a ha a d he a ie . Kee he a ie . de cl e . eilla ce.

10.3 Pa. i g Ala

10.3.1 Defi i g he Ala Pa. e F. c i

WARNING

- Pa. i g ala a e . l i a ha a d he a ie .

10.3.2 Pa d P ec ed Ala Pa. e Se i g

NOTE

- P l gi g ala a. e i ed e affec he e i g f ala a. e i e.

10.4 S ichi g Off All Ala

WARNING

- S ichi g ff ala a e . l i a ha a d he a ie .

10.5 Pa. i g Ala S . d

WARNING

- Pa. i g ala . d a e . l i a ha a d he a ie .

10.6 Silencing Off Alarm Sound

WARNING

- Silencing off alarm sound may have serious consequences.

10.7 Resetting Alarm

NOTE

- If alarm is triggered after resetting, alarm message will be activated.

10.8 Latching Alarm

NOTE

- Changing alarm limit affects the latching alarm function. Determine if it is needed to reset the alarm limit if it changed the alarm limit.
- When the alarm message is cleared, latched physical alarm are cleared.

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11 M i i g ECG

11.1 ECG Safe I f a i

WARNING

- ECG i i g ided b hi e . i e i i e ded f di ec ca diac a lica i .
- Make . e he c d. c i e a f elec de a d a cia ed c ec , i cl. di g he e. al elec de, d c ac a he c d. c i e a i cl. di g ea h.
- U e defib illa i - f ECG cable d. i g defib illa i .
- D . ch he a ie e al de ice c ec ed he a ie d. i g defib illa i .
- T ed. ce he ha a d f b. d. i g high-f e . e c . gical ced. e, e . e ha cable a d a d. ce c ec ed he e . i e e e c ei c ac i h he elec . ge . i (ESU).
- T ed. ce he ha a d f b. d. i g. e f high-f e . e c . gical . i (ESU), he ECG elec de h . ld be l ca ed be ee he . gical i e a d he ESU e . elec de.

CAUTION

- Pe i dicall i ec he elec de a lica i ie e . e ki i eg i . If he ki . ali cha ge , e lace he elec de cha ge he a lica i ie.
- I e fe e ce f . g . ded i . e ea he a ie a d elec . ge i e fe e ce ca id. ce i e a da ifac i he a ef .
- If elec ed lead ca ide alid ECG ig al , a da h li e i h i he ECG a ef a ea.

11.2 ECG Di la

NOTE

- The ECG . e ica ea a d a ef a ea a e c fig. ed be diffe e f diffe e lead e a d ECG e i g .

11.3 P e a i g f ECG M i i g

NOTE

- The e e al addle a e ec e ded f ECG i i g.

11.3.1 P e a i g he Pa ie f Elec de A lica i

CAUTION

- P e ki e a a i i ece a f g d ig al . ali a he elec de i e, a he ki i a c d. c f elec ici .

11.3.2 A l i g ECG Elec de

NOTE

- S e he elec de a e a .e.
- O l e he elec de ackage i edia el i .e.
- Ne e i a ie elec de e b a d .Thi a lead ble d. e i eda ce i a ch.
- Whe a l i g he elec de , a id b a ea, b i . la e f fa , a d aj . cle .M. cle e e ca e .l i elec ical i e fe e ce. A l i g elec de aj . cle , f e a le . cle f he h a , a lead e e . a h h ia ala d. e e ce i e . cle e e .

11.3.3 Elec de C l C di g

NOTE

- F he 5-lead elec de lace e , lace he ec dial elec de acc di g he h icia | efe e ce.

WARNING

- T ed. ce he ha a d f b. d. i g. e f elec . gical. i (ESU), he ECG elec de h . ld be l ca ed be ee he . gical i e a d he ESU e . elec de.
- Ne e e a gle he ESU cable a d he ECG cable ge he .
- If he ESU i . ed, d lace ECG elec de ea he g . di g la e f he ESU. O he i e i e fe e ce ECG ig al a cc. .

11.3.4 Checki g Paced S a .

WARNING

- Whe i i g a ie i la ed i h a ace ake , be . e elec c ec aced a . . O he i e, he ace . l e a bec . ed i he ca e f ca diac a e e a h h ia . D c le el el he hea a e eadi g he hea a e ala . Al a kee aced a ie . de cl e . eilla ce.
- F aced a ie , e Paced Ye . O he i e he i c . ld i ake a ace . l e f a QRS c le a d fail ge e a e ala he he ECG ig al i eak. O e ic. la aced a ie , e i de f e ic. la ach ca dia a al a be de ec ed.D el e i el . he e ' a. a ed a h h ia de ec i alg i h .
- Fal e l hea a e fal e a le ala a e . l i h ce ai ace ake beca. e f ace ake a ifac , . ch a elec ical e h f he ace ake e la i g he . e QRS c le e .
- D el e i el hea a e e e ala he i i g a ie i h ace ake . Al a kee he e a ie . de cl e . eilla ce.
- F - aced a ie , . . e Paced N .

11.3.5 Se i g he S i ch f Pace Rejec i

NOTE

- Whe ace . l e a e de ec ed, he ace . l e a k a e h he ECG a ef . Pace Rejec i e i g ha i ac he di la f ace . l e a k .
- Y . ca i ch ace ejec i l he Paced i e Ye . If Paced i e , he e i g f Pace Rejec i di abled.

11.4 Cha gi g ECG Se i g

11.4.1 Se i g he A al i M de

NOTE

€ l i diffic. l f he e . i e diffe e ia e a abe a l c d. c ed bea f a e ic. la bea . A abe a l c d. c ed bea a be i cla ified a a e ic. la bea . l hi ca e, ch e

CAUTION

- Si ce hea h hia dec i alg ih e iii a d ecifici a ele ha 100%, ei e he e a be efal ea h hia dec ed a dal e . ea h hia e e a be dec ec ed. Thi i e eciall . e he he ig ali i .
- The ECG i ea d i i . QRS dec i h e h ld e i g affec a h hia dec i a d hea a e calc la i e iii .
- If QRS a li . dei l , hee . i e igh be able calc la e hea a ea d fal ea le call a cc. .
- D. i g he lea i g ha e f he alg ih , a h hia dec i a be a ailable. S . h . ld cl el i a ie c di i d. i g a d f e e al i . e af e he lea i g ha e all he alg ih each i al dec i e f a ce.

11.5.2 Cha gi g A h h ia Se i g

11.5.2.1 Cha gi g A h h ia Ala Se i g

11.5.2.5 Setting Arrhythmia Reference Period

NOTE

- Reference period is applicable for arrhythmia in the edition II version.
- Reference period has its impact on Tachy, Brady, HR High, HR Low, A-Fib/A-Fib End, Irrhythmia/Irrhythmia End.

11.6 ST Segment Monitoring

11.6.1 ST Safety Information

WARNING

- ST alarm may be affected by changing the ST measuring point and the ST calculation method.
- ST deviation is calculated after the J point. Change in the area may affect ST.
- The ST deviation measurement algorithm has been tested for accuracy. The significance of ST segment changes need be determined by a physician.
- The equipment provides ST deviation only. The clinical significance of the ST

11.9 ECG T . ble h _i g

NOTE

€ **F _he h_ i l gical a d_ech ical ala** [illegible] **e age , ee** D Alarm Messages

12 Re i g 12-Lead ECG A al i

12.1 Re i g 12-Lead ECG A al i l d. c i

WARNING

- Re i g 12-lead ECG a al i ided b hi e . i e i i e ded f di ec ca diac a lica i .

12.2 Cha gi g 12-Lead ECG Se i g

NOTE

- F a ie . de 16 ea ld, i i ec e ded V3 Place e V4R a d lace che elec de a V4R, V1, V2, V4, V5, V6. Thi i a al ac ice f a a ie f hi age.

12.3 I i ia i g 12-Lead ECG Mea . e e

NOTE

- Check ha a ie i f a i i c ec bef e i i ia i g 12-lead ECG a. ea . e e .

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13 M i i g Re i a i (Re)

13.1 Re Safe I f a i

WARNING

- Whe i i g he a ie ' e i a i , d . e ESU- f ECG cable .
- If . d e he de ec i le el f he e i a i c ec l i a . al de ec i de, i a be ible f he e . i e . de ec a ea. If . e he de ec i le el l , he e . i e i elikel de ec ca diac ac i i , a d fal el i e ca diac ac i i a e i a ac i i i he ca e fa ea.
- The e i a i ea . e e d e ec g ie he ca . e fa ea . l l i dica e a ala if b ea hi de ec ed he a e-adj. ed i e ha ela ed i ce he la de ec ed b ea h. The ef e, i ca be. ed f diag ic . e.
- If e a i g. de c di i acc di g he EMC S a da d IEC 60601-1-2 (Radia ed I . i 3V/), field e g h ab e 3V/ a ca. e e e . ea . e e a a i . fe . e cie . The ef e, i i ec e ded a id he. e f elec icall adia i g e . i e i cl e i i he e i a i ea . e e . i .
- The i eda ce e i a i ea . e e a ca. e a e cha ge i Mi . e Ve ila i Ra e Re i e Pace ake . Se he ace ake a e e i e de ff di able he i eda ce e i a i ea . e e he e . i e .
- Whe . i g he elec . ge . i , e . e e c ac f he ESU e . elec de he a ie a id b. a ea . e e ie . Al e . e ha he ESU e . elec de i ea he e a i g a ea.

CAUTION

- Re i a i i i g i f . e he a ie h a e e ac i e, a hi ill ca . e fal e ala .

13.2 Re Di la

NOTE

- If ESU- f ECG cable a e . ed, he Re a ef a ea ill di la he e age Check Lead . Re lace he ECG cable if ece a .

13.3 P e a i g f Re M i i g

13.3.1 Placi g he Elec de

CAUTION

- T ed. ce ca di a c. la a ifac , a l he e i a i elec de ha he li e a ea a d he e . icle f he hea a e i he li e be ee he e i a elec de . Thi i e eciall i a f e a al a ie .
- T i i e he e i a i a ef , lace he RA a d LA elec de h i all he i i g e i a i i h ECG Lead I; lace he RA a d LL elec de diag all he i i g e i a i i h ECG Lead II.
- T i i e e ia a ef f a ie b ea hi g ai l abd i all , a l he LL elec de he lef abd e a he i f a i . abd i al e a i .

- For patients expand chests laterally (normally neonatal patients), to avoid negative intrathoracic pressure and optimize respiratory waveforms, respectively apply the electrodes in the right midaxillary and the left lateral chest areas at the maximum point of the breathing movement.
- Periodically inspect the electrode application site to ensure skin quality. If the skin quality changes, replace the electrodes or change the application site.

NOTE

- Store the electrodes at room temperature. Open the electrode package immediately prior to use.
- Check that the electrode packages are intact and not expired. Make sure the electrode gel is moist.

13.4 Changing Resp Settings

NOTE

- You can switch off the apnea alarm only when Apnea Alarm Off is enabled. For more information, see 10.2.3 Setting the Switch of Apnea Alarm Off.

14 Mixing Plate Oxygen Saturation (SO_2)

14.1 SO_2 Indication

NOTE

- The SO_2 reference should be compatible with the SO_2 technique. For example, a calibrated Mixed Venous SO_2 reference should be used with Mixed Venous SO_2 technique.
-

CAUTION

- Cha ge he a lica i ie e lace he e a d/ a ie cable he a e i e S O2L Sig al Q. ali , e age i di la ed hee . i e . The e e age a i dica e ha a ie i ig i ei e ha. ed he a ie cable e .
- Re lace he cable e he a S O2 Se Off, S O2 N Se , , S O2 L Sig al Q. ali , e age i c i e l di la ed hile i ig c ec. i e a ie af e c le i g . ble h i g e li ed i hi a . al.
- Va ia i i ea . e e a be f . da d a be affec ed b a li g ech i . e a ella he a ie | h i l gical c di i . A e . l e hibi i g i c i e c ih he a ie ' cli ical a . h . ld be e ea ed a d/ . le e ed i h addi i al e da a. Bl d a le h . ld be a al ed b lab a i . e i cli ical deci i aki g c le el . de a d he a ie ' c di i .
- D lace he . l e i e e he e hec l ca be cha ged b he a ie .
- If . i g . l e i e d. i g f. ll b d i adia i , kee he e . f he adia i field. If he e i e ed he adia i , he ead i g igh be i acc. a e he de ice igh ead e f he d. a i f he ac i e i adia i e i d.

NOTE

- Addi i al i f a i ecific he Ma i e c a ible i h hee . i e , i cl. di g i f a i ab . a e e / ea . e e e f a ced. i g i a dl e f. i , a be f . di he e | di ec i f . e (DFU).
- Ma i cable a d e a e ided i h X-Cal ech l g i i ie he i k fi acc. a e ead i g a d. a ici a ed l f a ie i g. Refe he Cable Se DFU f he ecified d. a i f he a ie i g i e.

14.3 SpO_2 Di la

NOTE

- Pli l a ailable f Mi da SpO_2 a d Ma i SpO_2.

14.4 Pe a i g f SpO_2 M i i g

CAUTION

- Selec e S O2 e acc di g a lica i ie. A l i g e igh a e e el b . c ci c. la i a d lead i acc. a e ea . e e . L ea lica i a e. l i ea . e e iee i g a bie ligh .
- A id laci g he SpO_2 e he a ee e i i h a NIBP c. ff, a e ial ca he e, i a a c. la li e.
- Whe i i g SpO_2 a high a bie e ea . e, a id b. a he a lica i ie ha i ell e f. ed, a a e i l ged SpO_2 e a lica i .

14.5 Cha gi g SpO_2 Se i g

14.5.1 Cha gi g he SpO_2 Ala P e ie

NOTE

- Y . ca ich ff he S O2 De a ala l he S O2 De a Ala Off i e abled. F e i f a i , ee ec i 10.2.2 Setting the Switch of SpO_2 Desat Alarm Off

14.5.2 Nellc Sa -Sec d Ala Ma age e

NOTE

€ The SO_2 L S O_2 High ala i e ed i he ca e ha SO_2 al e i la e he ala li i f 3 i e i hi e i . ee e if he e i g f Sa -Sec d i eached.

14.5.3 Se i g SO_2 Se i i i (f Ma i SO_2)

CAUTION

€ Whe . i g he Ma i . Se i i i e i g, e f a ce f Se Off de ec i a be c i ied. If hee . i e a d he e bec e de ached f he a ie , he e ial f fal e eadi g a cc. d. e e i e al ie . cha ligh , a d ib a i .

14.6 SO_2 T . ble h i g

NOTE

€ F he h i l gical a d ech ical ala e age , ee D Alarm Messages

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15 M i igN i aieBl dP e . e(NIBP)

15.1 NIBP l _ d. c i

NOTE

- Bl d e . e ea . e e _ de e i ed i h hi de icea e e . i ale _ _ h e b ai ed b _ a _ ai ed b e e . i g hec. ff/ _ e h c ea. c. l a _ e h d a i _ a-a _ e ialbl d e . e ea . e e _ de ice, i hi _ he li i e c ibedb _ heA e ica Na i al S a da d: a . al, elec ic, a. _ a ed h g a e e e .
- NIBP ea . e e _ ca be e f edd. i g elec - . ge _ a d di cha ge f defib illa .

15.2 NIBP Safe _ I f a i

WARNING

- Be . e elec hec ec a ie _ ca eg _ e i g f _ . a ie _ bef e NIBP ea . e e . D a l he highe ad. l e i g f edia ic e a al a ie . O he i e, i a e e a afe ha a d.
- D e f NIBP ea . e e a ie i h ickle-cell di ea e.
- T a id f. he i j. , d a l he NIBP c. ff he li b i ha . d.
- U e cli ical j. dg e de e i e he he e f f e . e . a e ded bl d e . e ea . e e a ie i h e e ebl d cl i g di de beca e f he i k f he a ai he li b fi ed i h he c. ff.
- T a id he i k f a ie i j. , d a l he NIBP c. ff a li b ha ha a i a e . i f. i ca he e i lace. A l he c. ff a he li b if ible.
- D a l c. ff he a he ide fa a ec l h de clea a ce.
- C i . . c. ff e . e d. e c ec i . . bi g ki ki g a ca. e bl d fl i e fe e ce, a d e . l i g i ha f. l i j. . he a ie .
- NIBP ead i g ca be affec ed b he ea . e e i e, he i i f he a ie , e e ci e, he a ie | h i l gic c di i . If . d . b he NIBP ea . e e , de e i e he a ie ' i al ig b al e a ie ea , a d he e if ha he i i ki g c ec l .
- Taki g NIBP ea . e e e e . e he a ie | i . e. Thi ca ca. e ki . . a, i che ia, a d e. a h . Pe i dicall check he c. ff i ea d he li b di al he c. fff al c l , a ha d e i i i . If he ei a ig f ki cha ge di al ci c. la i , e he c. ff a he li b NIBP ea . e e . Check e f e . e l he . i g he STAT de . i g he a. ea h i e al . A. NIBP ea . e e i h ea d i . ei e al a e ec e ded f e ded e i d f i e.
- NIBP diag ic ig ifica ce . be decided b he h icia .

CAUTION

- U i g IABP a ca. e NIBP, i cl. di g PR, ea . e e i acc. a e failed.
- Acc. ac f NIBP ea . e e de e d . i g ac. ff f e i e. l i e e ial ea . eli b ci c. fe e ce a d ch e ac. ff i h e i e.

15.3 NIBP Mea . e e Li i a i

NOTE

- The effec i e e f he h g a e e ha bee e abli hed i eg a , i cl. di g e- ecla ic a ie .

15.4 NIBP Di la

NOTE

- If NIBP ea . e e fail , XX i di la ed; if NIBP ea . e e i ake , --; i di la ed.
- O li ed NIBP . e ic i dica e ha he ea . e e ceed he NIBP i e . . S he e NIBP al. e a e ec e de f efe e ce. The e i g f NIBP i e . . ca be cha ged i he C fig. a i de l . F ei f ai , ee 24.7.4.8 NIBP Setup Tab

15.5 P e a i g f NIBP Mea . e e

15.5.1 P e a i g he Pa ie f NIBP Mea . e e

NOTE

- l i ec e de ha he a ie cal d a d ela e a . cha ible bef e e f i g he ea . e e a d ha he a ie d alk d. i g he ea . e e .
- l i ec e de ha e he a ie i . ie l f e e al i . e bef e aki g he ea . e e .
- O he fac ha ha e bee h e . l i a e e i ai f bl d e . ea e lab ed b ea hi g, f. ll bladde , ai e c.

15.5.2 Placi g he NIBP C. ff

CAUTION

- U i g ac. ff f g i e, ac. ff i h i ed bladde a d ki ked ai . bi g, ca ca. e i acc. a e ea . e e .
- D . ch a l e e al e . e agai he c. ff a d ai . bi g d. i g NIBP ea . e e . Thi a ca. e i acc. a e bl d e . e al e .
- U e ca e he laci g he c. ff a e e i . ed f i i g he a ie a a e e .

15.6 Cha gi g NIBP Se i g

NOTE

- F k h e e i e a ie , . eed e i i ial c. ff e . e a highe al. e ed. ce he ea . e e i e.

16 M i i g Te e a . e (Te)

16.1 Te e a . e T . ble h _ i g

NOTE

€ F _ he h_ i l gical a d_ ech ical ala e age , ee D Alarm Messages

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17 M i i g I a i e Bl d P e . e (IBP)

17.1 IBP Safe _ I f a i

WARNING

- U e l e . e a d. ce ecified i hi a . al. Ne e e. edi able e . e a d. ce .
- Make . e ha he a lied a e e c ac he c d. c i e a .
- T ed. ce he ha a d f b. d. i g high-f e . e c . gical ced. e, e . e ha he e . i e ' cable a d a d. ce e e c ei c ac i h he high-f e . e c . gical. i .
- Whe . i g acce ie , hei e a i g e e a . e h . ld be ake i c ide a i . F e i f a i , ee i . c i f . e facce ie .
- Alli a i e ced. e i l e i k he a ie . U e a e ic ech i . e. F ll ca he e a . fac . e | i . c i .
- Mecha ical h ck hei a i e bl d e . e a d. ce a ca. e e e e hif i e bala ce a d calib a i , a d ca. e e e . ead i g .

CAUTION

- U i g IABP a ca. e IBP, i cl. di g PR, ea . e e i acc. a e failed.

17.1.1 Mea . i g a IBP

CAUTION

- Make . e ha all he a d. ce a e e ed c ec l bef e he IBP ea . e e .
- Make . e ha ai b. bble e i i he IBP a d. ce e bef e he IBP ea . e e .
- If ea . i g i ac a ial e . e (ICP) i ha i i g a ie , le el he a d. ce i h he f he a ie ' ea . I c ec le eli g a gi e i c ec al. e (a licable if ea . i g ICP i h he C d a ICP a d. ce).

17.2 Mea . i g ICP U i g he C d a ICP T a d. ce

CAUTION

- If e . i e f diffe e b a d a e. ed e he C d a ICP a d. ce , he e efe e ce al. e ca be diffe e . U e a Mi d a e . i e . Ze he C d a ICP a d. ce if . . ill ake ICP ea . e e . . i g a Mi d a e . i e . . O he i e he ICP ea . e e ca be i acc. a e.

17.3 IBP Di la

NOTE

- F e e . e , l he ea e . ei di la ed i . e ica ea. Mea . e e . i f diffe e e . e a be diffe e . If he A a d ICP e . e a e ea . ed i . l a e . l , CPP al. e i di la ed i he ICP . e ica ea, hich i b ai ed b . b ac i g ICP f he A ea .

17.4 Cha gi g IBP Se i g

NOTE

€ l i all ed elec he a e label f diffe e e . e .

17.5 IBP T . ble h i g

NOTE

€ F he h i l gical a d ech ical ala e age , ee D Alarm Messages

18.3 Mea . i g Mai _ ea CO_2

WARNING

€

19 Cli ical A i i e A lica i

19.1 Gla g C a Scale (GCS)

CAUTION

- GCS i e ded a adj. c i aie a e e ad . be. ed i c j. c i ih be e ai f cli ical ig a d .
- GCS i a lied aie ha a e eda ed, . c. la l ela ed, i h a ificial ai a , d. k, i a. e ile ie.
- GCS i a lied deaf e le a d aie ha i g la g. age ba ie i h e al di de.
- Whe a lied child e . de fi e ea ld elde e le h a e l , he GCS c e igh be l .

NOTE

- A lice ei e . ied f GCS.

19.1.1 Se i g he GCS Sc i g T e

NOTE

- Ma . all e i g Sc e T e ha i ac e i g f Pa ie Ca eg a d Age i he Pa ie Ma age e e . .

19.2 Ea l Wa i g Sc e (EWS)

WARNING

- EWS h . ld be. ed a he le ba i f diag i a deci i . l i i e ded e lace he c e e j. dg e f a cli icia . The EWS c e a d ec e ded ac i . be . ed i c j. c i ih b e ai f cli ical ig a d .
- MEWS a d NEWS a e a licable eg a a , COPD (Ch ic Ob . c i e P. l a Di ea e) aie a d aie . de 16 ea ld. NEWS2 i a licable eg a a a d

19.3 HEART Sc e

NOTE

€ A lice e i e . i ed f HEART c e.

19.4 T a. a ic B ai l j. (TBI) A e e .

NOTE

€ A lice e i e . i ed f TBI a e e .

20 Re ie

20.1 Re ie i g E e

NOTE

- A all f e ha i ac hee e ed.
- Ala a e a eda e e a d ill be ai ai ed if hee . i e i e edd . The i e f e . i e e d i ec ded a a e e a d ca be e ie ed.
- Ea lie e e ill be e i e b la e e if he ca aci i eached.

20.1.1 Vie i g E e De ail

CAUTION

- E . e ha . ha e elec ed he i al lead i h he be a ef a li . de a d he highe ig al- - i e a i . Selec i g he i al lead i i a f de ec i g bea , cla if i g bea , a dde ec i g e ic. la fib illa i .

NOTE

- The i ch e i g f Bea A . he E e e ie age i ele a ha he F- ll Di cl . e e ie age.

20.2 Re ie i g F- ll Di cl . e

NOTE

- The e a ef . elec be ed, he h e a ef age i e bec e . The a ef a be ed f 48 h . . Plea e e e ca. i he elec i g a ef .

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21 Pi_i g

21.1 L adi g Pa e

CAUTION

- U e l ecified he al a e. O he ie, i a ca. e da age he ec de ' i head, he ec de a be. able i , i . ali a e. l.
- Ne e . ll he ec de a e i h f ce he a ec di g i i ce. O he ie, i a ca. e da age he ec de.
- D lea e he ec de d e . le . el ad a e e e ble.

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22 Di cha ged Pa ie Ma age e

22.1 Ge e a i g Pa ie Da a

NOTE

€ Ea lie ed da a ill be i e b la e e if he e i e ca aci i eached.

22.2 Acce i g he Di cha ged Pa ie M de

WARNING

€ Pa ie he a a d i i g a a icall e d he acce he Di cha ged Pa ie de.
The e i e a a icall e a a d ake effec cha ge af e he Di cha ged Pa ie de.

22.3 E i g Pa ie Da a

NOTE

€ D e e he USB d i e f he e i e bef e da a i c le el e ed.

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23 Da a C ■■. ica i

23.1 Da a C ■■. ica i Safe I f ■a i

CAUTION

- Wi ele e kde ig , de l ■e , deb. ggi g, a d■ai e a ce h . ldbee ec. edb Mi d a e ice e el a. h ied ech icia .
- Al a de l he iele e kacc di g l cal iele eg. la i .
- U i g 5 GH fe . e c ba di ec ■■e ded he e e ible. The ea e■ ei e fe e ce . ce i 2.4 GH f e . e c ba d.
- P i a e AP a d iele . e a e all ed. The e de ice ■a ca. e adi i e fe e ce a d e. l i■ i a d CMS da a l .
- T e . e e k ec. i a d abili , da a c ■■. ica i ■. be e f ■ed ihi a cl ed e k ihi a i. all i la ed h ial e k. The h ial i e ible f e . i g he ec. i f he i. all i la ed e k.
- WPA2-PSK a d WPA2-E e i e e ifica i a de c i h . ldbe. ed if ible. O he i e, hee . i■ e ■a be able k a ie i f ■a i ■a be leaked. WPA2-E e i e a d al g a da e ec ■■e ded.
- Kee e ka. he ica i if ■a i , f e a■ le a d, f ■ bei g acce ed b . a. h ied. e .
- D c ec -■edical de ice he■ i e k.
- If iele e k ig ali , he e■a be a ik f CMS da a l .
- Ma i■. ■ . ■be f■ i c ec ed a i gle API 3. T ■a ■ i c ec ed he a■e AP■a e. l i e kdic ec i .
- RF i e fe e ce■a e. l i iele e kdic ec i .
- Dic ec i g f ■ he e k■a e. l i CMS da a l a df. c i fail. e. Check he a ie i ca e f e kdic ec i a d ec ec he e ka a ible.
- E . e ha he■ i IP add e e i g i c ec . Cha g i g he e k e i g ■a e. l i e kdic ec i . C ac . e ice e eli f . ha e a ble■ e i g he IP add e .

23.2 C ec i g he CMS

NOTE

- Y . ca elec CMS l he Selec CMS i iched . F ■ ei f ■a i , ee 24.7.6.4 Central Station Setup Tab

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24 Configuration Management

24.1 Configuration Management Introduction

WARNING

- Accessing the Configuration Management application requires password protection. Password protection is optional.
- The configuration settings can be changed by multiple users.
- Never execute instructions with the accessing the Configuration Management application.

24.2 Changing Configuration

NOTE

- Resetting factory default has the same effect as marked with * in the following table.
- The alarm limit value effective for all variety categories if not specified.
- The alarm limit value cannot exceed the latched alarm limit.

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25 Ba e

25.1 Ba e Safe l f ai

WARNING

- Kee ba ie f child e ' each.
- U e l ecified ba e . U e f a diffe e ba e a e e a i k ffi e e l i .
- Kee he ba e ie i hei igi al ackage. il . a e ead e he .
- D e e ba e ie li . id.
- D c . h, d . c . e he ba e . Mecha ical ab. e ca lead i e al da age a d i e al h ci c. i . If a ba e ha bee d ed ba ged agai a ha d . face, he he

25.4 Checki g Ba e Pe f a ce

NOTE

- Life e ec a c fa ba e de e d h f e . e a dh l gi i . ed. Whe e l . ed, he li hi - i ba e ha a . ef . l life fa i a el ea . If i e l . ed, i life e ec a c ca be h e . l i ec e ded e lace he ba e e e ea .
- T i i e he ba e e f a ce, a f . ll di cha ged (ea f . ll di cha ged) ba e h . ld be cha ged a a ible.
- Ba e e a i g i e de e d hee . i e c fig . a i a d e a i . F e a le, ea . i g NIBP e ea edl ill h e he ba e e a i g i e.

25.5 S i g Ba e ie

NOTE

- Re e he ba e f he e . i e if hee . i e i . ed f a l ged i e (f e a le, e e al eek). O he i e he ba e a e di cha ge.
- S i g ba e ie a high e e a . e f a e e ded e i d f i e ill ig ifica l h e hei life e ec a c .
- The ba e age e e a . ei be ee -20 C (-4 F) a d 60 C (140 F). S i g ba e ie i ac l lace ca l he agi g ce . Ideall he ba e ie h . ld be ed a 15 C.

26 Ca e a d Clea i g

26.1 Ca e a d Clea i g Safe I f a i

WARNING

- U e l clea e , di i fec a a d e h d ecified i hi cha e. U i g. a ed . b a ce e h d a da age hee . i e a d id he a a .
- D i di i fec i g l. i , a ha a d. ga e a e. l.
- Mi d a i liable f he efficac f he ecified clea e , di i fec a , e h d a a ea f c lli g i fec i . Refe . h i al f i fec i c lli g.
- Be . e e ff hee . i e a ddi c ec all e cable f he . le bef e clea i g hee . i e .
- The e ible h i al i i . i hall ca . . all clea i g a ddi i fec i ced. e ecified i hi cha e .

CAUTION

- Ne e i e ea a f hee . i e acce ie i li . id all li . id e e he i ei .
- A c ac f clea e di i fec a i h c ec e al a a ca. ec i .
- D . a a li . id di ec l hee . i e acce ie e i fl. id ee i c ec i e i g .
- If . illli . id hee . i e acce ie , di c ec he e . l , d hee . i e , a d c ac . e ice e el.
- Ne e . eab a i e a e ial (. cha eel l il e li h), e ie clea e (. cha ace e ace e-ba ed clea e).
- Dil. ea d. e he clea e di i fec a acc di g he a . fac . e | i . c i .
- Check hee . i e af e clea i g a ddi i fec i g. If he ei a ig f da age, e ei f e.

26.2 Clea i g a d Di i fec i g he E . i e

26.2.1 Clea i g he Mai U i

CAUTION

- D. i g he clea i g ced. e, di able he . ch f. c i b . i g ff hee . i e l cki g he . ch c ee .

26.2.2 Clea i g he The al P i Head

CAUTION

- D . ea hi g ha a de he he al ele e .
- D add. ece a f ce he he al head.
- The he al i head ge h he i i g. D clea he i head i edia el af e i i g.

26.3 Clea i g a d Di i fec i g he Acce ie

CAUTION

- Fl id e ei g he NIBP ai h e ca da age he e . i e . Whe clea i g di i fec i g he NIBP ai h e, e e li . id f e ei g he h e.
- Pe i dicall i ec he NIBP ai h e a d c ec f ig f ea de e i a i af e clea i g di i fec i g he NIBP ai h e. Re lace he NIBP ai h e if . de ec a leak. Di e f da aged NIBP ai h e acc di g l cal la f di al f h i al a e.
- Ne e i e e ak he acce ie i a li . id.
- Ne e clea di i fec he c ec a d e al a .
- U e l Mi d a a ed clea e a d di i fec a a d e h d li ed i hi ec i clea di i fec he acce ie . Wa a d e c e da age ca. ed b . a ed . b a ce e h d .
- T a id l g e da age, he acce ie h . ld be di i fec ed l he ece a a de e i ed b . h i al' lic .

27 Mai e a ce

27.1 Mai e a ce Safe I f ai

WARNING

- S ig hee i e f a ig f i ible da age . If da aged, c ac . e ice e el.
- F ll he ai e a ce ad e ig ched le l cal eg. la i e f e i ga d ai e a ce. N i le e ig he ai e a ce ched le a ca. ee i e fail. ea d ible heal h ha a d .
- N di fica i f hi e i e i all ed.
- Thi e i e c ai . e e iceable a .
- D e hee i e h . ig . The afe check ai e a cei l i ga di a e bl f hee i e h . ld be e f ed b fe i al e ici g el. O he ie, d e e i e fail. ea d ible heal h ha a d c . ld e . l .
- D . cha c ec ed elec de ad e e al addle i h ha d d. i ga . e a d . e e . O he ie, elec ic h ck c . ld e . l .
- The e ice e el . be e l . alified a d h . ghl fa ilia i h he e a i f he e i e .

CAUTION

- The e i e a d acce ie hall be e ed ai ai ed hile i . e i h a a ie .
- If a ble cc. hee i e , c ac he e ice e el.
- A hee d fi e ice life, hee i e , a ell a i acce ie , . be di ed fi c lia ce i h he g. ideli e eg. la i g he di al f . ch d c . If . ha ea . e i c ce i g di al f hee i e , lea ec ac Mi da .

NOTE

- If eeded, c ac he a . fac . e f ci c. i diag a , c e a li , de ci i , calib a i i . ci , he i f ai c ce i g he e ai f hee i e .

27.2 R . i e Mai e a ce

27.2.1 A . Te

NOTE

- If hee i e i . ed ff, i ca ca . . hea . e l he i i ei he c ec ed i h he e e al e . l i alled i h a ba e (a lea 60% f ba e ca aci).
- The a . e i . la e he di cha ge e h . gh i eda ce i he addle a . The a . e a e l he e e al addle e l c ac he e al a f he addle a .
- Th . ghl clea hee e al addle a d e l lace he i he addle a af e each . e. O he ie, hea . e a fail da aged e e al addle a e . l .
- The a . e ed. ce he ba e e . If hee i e i c ec ed hee e al e . l i edia el , l ba e a e . l .
- Bef ec -.0013 T (B 63.62 416.7 -5.94 e W* 0 841.98 3.5(a)-f W U 416. -f W U, 5.2(2.1(e). 18 0 270.62

e l ad, he Te l ad c ec ed i h cable i di la ed he hea e a e. Thi ea ha hee i e l a e hei e al di cha ge e , b a hee e al di cha ge e c ec ed i h he e l ad.

27.2.2 U e Te

WARNING

If ... ; ... ... ed ... ...

A S ecifica i

A.1 Safe S ecifica i

A.1.1 Safe Cla ifica i

The equipment is classified, according to IEC 60601-1:

Type of protection against electrical shock	€ Used together with mains supply, AC transport dock or AC power adapter: Class I € Used together with a DC transport dock: Class II
Degree of protection against electrical shock	Type BF defibrillation proof for CO_2 monitoring and external defibrillation. Type CF defibrillation proof for ECG, Resp, SpO_2, NIBP, Temp, IBP and internal defibrillation.
Degree of protection against harmful ingress of solid	Main unit: IP55, IP52 (with an external power supply)
Degree of protection against harmful ingress of water	
Degree of safety of application in the presence of flammable anesthetic mixture with air or with oxygeny21[7(e(it:)-7.l)-1.2harmful ingress of water	

A.1.2 E i e al S ecifica i

WARNING

€ **The e . i e a ee he e f a ce ecifica i if ed . ed . ide he ecified e ea . ead h. idi a ge . If he e f a ce f hee . i e i deg aded d. e agi g e i e al c di i , c ac . e ice e el.**

€ **Whe he e . i e a d ela ed d. c ha e diffe i g e i e al ecifica i , he effec i e a ge f hec bi ed d. c i ha a ge hich i c e he ecifica i f all d. c .**

NOTE

€ **The e i e al ecifica i f. ecified d. le a e he a ea h e f he ai . i .**

Complies with requirements for medical devices of 6.3.4.2, EN1789 (10.1.3, IEC60601-1-12): Peak acceleration: 1000m/s² (≈102g) Duration: 6ms Pulse shape: half-sine Number of shocks: 3 shocks per direction per axis (18 shocks in total)
B. 9
Complies with the requirements for road ambulances of 6.3.4.2, EN1789. Peak acceleration: 15g Pulse duration: 6ms Number of bumps: 1000 Direction: vertical, with the equipment in its normal operating position.
Vib a i
Complies with requirements for medical devices of 6.3.4.2, EN1789 (10.1.3, IEC60601-1-12). 10 Hz to100 Hz: 5.0 (m/s²)²/Hz 100 Hz to 200 Hz: -7 dB/Octave 200 Hz to 2 000 Hz: 1.0 (m/s²)²/Hz Duration: 30 minutes per direction per vertical axis (3 axises in total) , **Vib a i (f fi ed i g ai c af): c 9 lie i h e . ie9 e f 10.1.4, IEC60601-1-12** Test category: S Curve: C Frequency: 10 to 2000Hz Grms: 4.12 Direction: 1 hour per direction per axis (3 axises in total) , **Vib a i (f helic e): c 9 lie i h e . ie9 e f 10.1.4, IEC60601-1-12** Test category: U2 Curve: F (performance level test) Frequency: 5Hz to 300Hz; APSD 5Hz to 40Hz: 0.0063 g²/Hz,+3 dB/Octave; APSD 40Hz to 200Hz: 0.05 g²/Hz; APSD 200Hz to 300Hz: 0.05 g²/Hz, -12 dB/Octave Grms: 3.37 Curve: F1 (endurance level test) Frequency: 5Hz to 300Hz; APSD 5Hz to 40Hz: 0.0126 g²/Hz, +3 dB/Octave; APSD 40Hz to 200Hz: 0.1 g²/Hz; APSD 200Hz to 300Hz: 0.1 g²/Hz, -12 dB/Octave Grms: 4.76 Duration: performance level test for minimum of 10 minutes at the beginning and end of the test, endurance level test for 3 hours (repeated per axis)
F ee fall
€ 1 fall on each surface (6 surfaces in total), at the height of 1.5 m € 1 fall from the normal operation position of the equipment configured with a carrying case, at the height of 3.0 m

Side ea9 CO_2 9 d. le			
l e9	**Te9 e a . e**	**Rela i e h. 9 idi**	**Ba 9 e ic**
Operating condition	5ºC to 40ºC	5% to 95%, non-condensing	430mmHg to 790mmHg (57.3kPa to 105.3kPa)
Storage condition	-20ºC to 60ºC		

Mai ea9 CO_2 9 d. le			
l e9	**Te9 e a . e**	**Rela i e h. 9 idi**	**Ba 9 e ic**
Operating condition	10ºC to 40ºC	10% to 90%, non-condensing	-382m to 4575m (57.0 kPa to 106.2kPa)
Storage condition	-10ºC to 55ºC	<90%, non-condensing	

A.2 Power Specifications

A.2.1 External Power Specifications

AC adapter	
Input voltage	100 to 240 VAC (-15%, +10%)
Input current	1.8 to 0.8A
Frequency	50/60Hz (±3Hz)
DC adapter	
Input voltage	18 VDC (±5%)
Input current	7.2Amax
AC adapter and docking (with AC adapter)	
Input voltage	100 to 240 VAC (-15%, +10%)
Input current	1.8 to 0.8A
Frequency	50/60Hz (±3Hz)
Tablet docking (with DC adapter)	
Input voltage	12/24VDC (-15%, +25%)
Input current	15.5 to 6.5A

A.2.2 Battery Specifications

Battery type	Rechargeable lithium-ion battery	
Battery voltage	14.4V	
Battery capacity	4500 mAh	
Maximum number of batteries configured	Two batteries can be connected at the same time.	
Battery charge time	Charged by the equipment connected to the external power supply	€ Less than 3 hours to 90% and less than 4 hours to 100% with equipment turned off. € Less than 5 hours to 90% and less than 6 hours to 100% with equipment turned on.
	Charged by the charger station	Less than 3 hours to 90% and less than 4 hours to 100%.

DC e i -	
Input voltage	12.4 to 30.3 VDC
Input current	15.5 to 6.5A

A.3 Ph ical S ecifica i

Dimensions (W × D × H)	€ 275 mm×160 mm×280 mm (including the handle, excluding external paddles) € 275 mm×155 mm×280 mm (including the handle, configured without the paddle tray)
Maximum weight	€ 4.3 kg (the equipment is configured with AC power input, 3-/5-lead ECG and manual defibrillation) € 3.9 kg (the equipment is configured with DC power input, 3-/5-lead ECG, manual defibrillation but without the paddle tray)

A.4 Ha d a e S ecifica i

A.4.1 Di la Sc ee

Screen type	Capacitive, multi-point color touchscreen
Screen size	9 inch
Resolution	1200×1020 pixels
Viewed waveforms	7 at maximum
Wave viewing time	36s at maximum (ECG)

A.4.2 Rec de

Method	High-resolution thermal dot array
Horizontal resolution	16 dots/mm (25 mm/s paper speed)
Vertical resolution	8 dots/mm
Paper width	110 mm
Paper speed	6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s. Error no more than ± 5%
Number of waveforms	6 at maximum
Grid lines	Printing can be configured with or without grid lines

A.4.3 LED

Alarm lamp	1 (two color-coded: red and yellow)
Power-on LED	1 (green)
Battery LED	1 (two color-coded: yellow and green)
Status indicator	1 (two color-coded: red and green)

A.4.4 A. di I dica

Speaker	Gives alarm tones (45 to 85 dB), key tones, QRS tones Supports PITCH TONE and multi-level tone modulation Alarm tones comply with IEC60601-1-8.

Beep	Gives reminder tones
Audio signal	Alarm tone: ISO mode with frequency of 600 Hz QRS tone: short beep with frequency of 495 Hz Charge tone: long beep with frequency of 400 Hz to 533 Hz Charge done tone: double beeps with frequency of 440 Hz Key tone: short beep with frequency of 1000 Hz

A.4.5 E e al C ec

Power input	1, AC power input with equipotential grounding terminal or DC power input, connects the external power supply.
Multifunctional connector	1, connects a CPR sensor, or a cable for analog output or synchronized cardioversion.
USB connector	€ 1 USB 2.0, connects USB devices. € 1 USB 3.0,
Network connector	1 RJ45 connector, 100 Base-TX, IEEE 802.3, connects a standard network cable.

A.4.6 Sig al O

M l if c i al c ec	
Standard	Meets the requirements of EN60601-1 for short-circuit protection and leakage current
ECG A al g O (l f ECG acce ie)	
Bandwidth (-3 dB; reference frequency: 10 Hz)	Diagnostic mode: 0.05 to 150 Hz Monitor mode: 0.5 to 40 Hz Therapy mode: 1 to 20 Hz ST mode: 0.05 to 40 Hz
Maximum QRS delay	25 ms (in diagnostic mode, and with Notch off)
Sensitivity	1 V/mV ±5%
Pace enhancement	Signal amplitude: V2.5V Pulse width: 10ms±5% Signal rising and falling time: 100 s
IBP a al g	
Bandwidth (-3dB; reference frequency:1Hz)	0 to 40 Hz
Maximum transmission delay	30 ms
Gain (reference frequency 1 Hz)	1 V/100 mmHg, ±5%
Vide	
Video signals	Visual graphics captured through a camera.
S ch i	
Input limit	Vih 2.4v; Vil 0.4v
Input signal range	0 to 5V (TTL level)
Input impedance	10 k
Pulse width	>5 ms
Ala	

Alarm delay time from the equipment to other remote equipment	€ For pre-hospital network: the alarm delay time measured at the equipment signal output connector: 10 s € For hospital network: the alarm delay time measured at the equipment signal output connector: 2s
Alarm signal sound pressure level range	45 db(A) to 85 db(A) within a range of one meter

A.5 Data Storage

Internal storage	4 GB
Events	At least 1000 events for each patient.
Waveforms	At least 120 hours for one ECG waveform and pace pulses with the resolution no less than 1 second, or 60 hours for two ECG waveforms and pace pulses
Voice recording	At least 8 hours for each patient
Tabular trends	At least 200 hours trend data with the resolution no less than 1 minute.
Auto test reports	At least 1000 records
Data export	Data can be export to a PC through a USB drive

A.6 Communication Specifications

A.6.1 Wi-Fi Specifications (SX-SDMAC-2832S+ a Sa i)

Protocol	IEEE 802.11a/b/g/n/ac
Modulation mode	BPSK, QPSK, 16QAM, 64QAM, 256QAM
Operating frequency	2412 MHz to 2472 MHz 5180 MHz to 5320 MHz, 5500 MHz to 5700 MHz, 5745 MHz to 5825 MHz
Wireless baud rate	IEEE 802.11a: 6 Mbps to 54 Mbps IEEE 802.11b: 1 Mbps to 11 Mbps IEEE 802.11g: 6 Mbps to 54 Mbps IEEE 802.11n: MCS0-MCS7 IEEE 802.11n: MCS0-MCS8
Output power	<20 dBm (CE requirement: detection mode- RMS)
Operating mode	As station, access AP for data transmission
Data security	Standards: WPA-PSK, WPA2-PSK, WPA-Enterprise, WPA2-Enterprise EAP method: EAP-TLS, EAP-TTLS, PEAP-MSCHAPv2 Encryption: TKIP, AES
Distinct vision distance	The distinct vision distance between the equipment and the AP: 50 m.
Alarm delay time of network disconnection	The message and alarm delay of network disconnection between the equipment and the CMS: 14 s.
Pe-h ial e k ef a ce	
System capacity, interference immunity and network stability	Meets the following requirements: € The total delay of data transmission from the equipment to the CMS: 10 s. € The delay for the equipment related settings configured at the CMS to be effective: 10 s. € The data loss percentage of Wi-Fi communication over a 4-hour period: 0.5%.

Test conditions	Meets the following conditions simultaneously: € One equipment supported by a single AP € Each equipment can communicate with the CMS. € The weakest strength of the AP signal where the equipment is located is not less than -65 dBm. € The distance between the interfering devices and the equipment is greater than 20 cm. A Wi-Fi interference (no greater than -85 dBm) in the same channel and a Wi-Fi interference (no greater than -50 dBm) in an adjacent-channel are presented synchronously. The interfering devices include, but are not limited to, 2.4 G wireless devices, cellular mobile networks, interphones, cordless phones, and ESU equipment. The interfering devices do not include Wi-Fi devices.
H ial e k ef a ce	
System capacity, interference immunity and network stability	Meets the following requirements: € The total delay of data transmission from the equipment to the CMS 2s. € The delay for the equipment related settings configured at the CMS to be effective: 2 s. € The equipment connected to the network roam for 30times, the data loss percentage of Wi-Fi communicati over a 24-hour period: 0.1%.
Test conditions	Meets the following conditions simultaneously: € Number of the equipments supported by a single AP: 3 € Each equipment can communicate with the CMS. € The weakest strength of the AP signal where the equipment is located is not less than -65 dBm. € The distance between the interfering devices and the equipment is greater than 20 cm. A Wi-Fi interference (no greater than -85 dBm) in the same channel and a Wi-Fi interference (no greater than -50 dBm) in an adjacent-channel are presented synchronously. The interfering devices include, but are not limited to, 2.4 G wireless devices, cellular mobile networks, microwave ovens, interphones, cordless phones, and ESU equipment. The interfering devices do not include Wi-Fi devices.

A.6.2 Wi-Fi S ecifica i (Wli k a S ai)

Protocol	IEEE 802.11a/b/g/n
Modulation mode	BPSK, QPSK, 16QAM, 64QAM
Operating frequency	2412 MHz to 2472 MHz 5180 MHz to 5320 MHz, 5500 MHz to 5700 MHz, 5745 MHz to 5825 MHz
Wireless baud rate	IEEE 802.11a: 6 Mbps to 54 Mbps IEEE 802.11b: 1 Mbps to 11 Mbps IEEE 802.11g: 6 Mbps to 54 Mbps IEEE 802.11n: MCS0 to MCS7
Output power	<20 dBm (CE requirement: detection mode- RMS)
Operating mode	As station, access AP for data transmission
Data security	Standards: WPA-PSK, WPA2-PSK, WPA-Enterprise, WPA2-Enterprise EAP method: EAP-TLS, EAP-TTLS, PEAP-MSCHAPv2 Encryption: TKIP, AES
Distinct vision distance	The distinct vision distance between the equipment and the AP: 50 m.
Alarm delay time of network disconnection	The message and alarm delay of network disconnection between the equipment and the CMS: 14 s.
P e-h ial e k ef a ce	

System capacity, interference immunity and network stability	Meets the following requirements: € The total delay of data transmission from the equipment to the CMS: 10 s. € The delay for the equipment related settings configured at the CMS to be effective: 10 s. € The data loss percentage of Wi-Fi communication over a 4-hour period: 0.5%.
Test conditions	Meets the following conditions simultaneously: € One equipment supported by a single AP € Each equipment can communicate with the CMS. € The weakest strength of the AP signal where the equipment is located is not less than -65 dBm. € The distance between the interfering devices and the equipment is greater than 20 cm. A Wi-Fi interference (no greater than -85 dBm) in the same channel and a Wi-Fi interference (no greater than -50 dBm) in an adjacent-channel are presented synchronously. The interfering devices include, but are not limited to, 2.4 G wireless devices, cellular mobile networks, interphones, cordless phones, and ESU equipment. The interfering devices do not include Wi-Fi devices.
H ial e k ef a ce	
System capacity, interference immunity and network stability	Meets the following requirements: € The total delay of data transmission from the equipment to the CMS 2s. € The delay for the equipment related settings configured at the CMS to be effective: 2 s. € The equipment connected to the network roam for 30 times, the data loss percentage of Wi-Fi communication over a 24-hour period: 0.1%.
Test conditions	Meets the following conditions simultaneously: € Number of the equipments supported by a single AP: 3 € Each equipment can communicate with the CMS. € The weakest strength of the AP signal where the equipment is located is not less than -65 dBm. € The distance between the interfering devices and the equipment is greater than 20 cm. A Wi-Fi interference (no greater than -85 dBm) in the same channel and a Wi-Fi interference (no greater than -50 dBm) in an adjacent-channel are presented synchronously. The interfering devices include, but are not limited to, 2.4 G wireless devices, cellular mobile networks, microwave ovens, interphones, cordless phones, and ESU equipment. The interfering devices do not include Wi-Fi devices.

WARNING

€ **D ef all e kf. c i fda ac . ica i ihi a e cl ed e k.**

A.6.3 Cell. la S ecifica i

Network type	4G, 5G

Operating frequency	¾ 4G module (EU): Â LTE FDD: B1/B3/B7/B8/B20/B28A Â LTE TDD: B38/B40/B41 Â WCDMA: B1/B8 Â GSM: B3/B8 ¾ 5G module: Â NR: n1/n2/n3/n5/n7/n8/n12/n20/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 Â LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 Â LTE-TDD: B34/B38/39/B40/B41/B42/B48
Standard/Modulation mode	LTE, 5G Sub-6GHz
Alarm delay time of network disconnection	The message and alarm delay of network disconnection between the equipment and CMS: 14 s.
Peripheral interface	
System capacity, interference immunity and network stability	Meets the following requirements: € The total delay of data transmission from the equipment to the CMS: 10 s. € The data loss percentage of cellular communication over a 4-hour period: 0.5%.
Test conditions	Meets the following conditions simultaneously: € With a distance greater than 2m from each other, three equipments operate properly at the same time. € Each equipment can communicate with the CMS. € The weakest signal strength where the equipment is located is greater than -95 dBm. € The distance between the interfering devices and the equipment is greater than 20 cm. The interfering devices include, but are not limited to, 2.4 G wireless devices, cellular mobile networks, interphones, cordless phones.

A.6.4 Bluetooth Specification

Protocol	Bluetooth low energy 5.0
Modulation mode	GFSK
Operating frequency	2402 MHz to 2480 MHz
Channel spacing	2 MHz
Wireless baud rate	2 Mbps, 1 Mbps, 125kbps
Output power	20 dBm
Data security	AES128
Distinct vision distance	The distinct vision distance between the equipment and the Pad: 10 m.
Network interface	
System capacity, interference immunity and network stability	Meets the following requirements: € The success rate of data transmission from the equipment to the Pad: >99%.

Test conditions	Meets the following conditions simultaneously:

A.6.5 NFC S ecifica i

A.7 The a S ecifica i

A.7.1 Defib illa i S ecifica i

360 J defib illa i a ef i eda ce f 25 , 50 , 75 , 100 , 125 , 150 , 175

V l age (V)

Ti e (**)**

Selec ed e e g	I eda ce							Acc ac
	25	50	75	100	125	150	175	
1 J	1	1	1	0.9	0.9	0.9	0.8	±10% or ±2J, whichever is greater
2 J	2	2	2	1.9	1.8	1.7	1.6	
3 J	2.9	3	2.9	2.8	2.7	2.6	2.4	
4 J	3.9	4	3.9	3.7	3.6	3.4	3.2	
5 J	4.9	5	4.9	4.7	4.5	4.3	4.1	
6 J	5.8	6	5.8	5.6	5.3	5.1	4.9	
7 J	6.8	7	6.8	6.6	6.3	6	5.7	
8 J	7.8	8	7.8	7.4	7.1	6.8	6.5	
9 J	8.8	9	8.8	8.4	8	7.7	7.3	
10 J	9.7	10	9.7	9.3	8.9	8.5	8.1	
15 J	15	15	15	14	13	13	12	
20 J	20	20	20	19	18	17	16	
25 J	24	25	24	23	22	21	20	
30 J	29	30	29	28	27	25	24	
50 J	49	50	49	47	45	43	41	
70 J	68	70	68	65	62	60	57	
100 J	97	100	97	93	89	85	81	
120 J	116	120	116	111	106	101	97	
150 J	146	150	146	140	134	128	122	
170 J	166	170	166	159	151	145	138	
200 J	195	200	195	187	178	170	163	
300 J	292	300	292	280	267	255	244	
360 J	351	360	350	336	321	306	293	

P e . l	Ma . al Defib						AED					
	Charge time*		From initial power on (from cold start) to charge done		From initial power on (from fast startup mode) to charge done		From initiation of rhythm analysis to charge done		From initial power on (from cold start) to charge done		From initial power on (from fast startup mode) to charge done	
	200J	360J	200J	360J	200J	360J	200J	360J	200J	360J	200J	360J
With a new fully charged battery	<3 s	<7 s	<11 s	<14 s	<6 s	<10 s	<10 s	<12 s	<21 s	<26 s	<13 s	<15 s
With a new fully charged battery, depleted by 15 discharges of 360 J	<4 s	<8 s	<12 s	<15 s	<7 s	<11 s	<11 s	<13 s	<23 s	<27 s	<14 s	<16 s
With an external power supply	<4 s	<7 s	<11 s	<14 s	<7 s	<10 s	<11 s	<12 s	<22 s	<24 s	<14 s	<15 s
* The battery is charged at ambient temperature of 20 ±5 °C.												

NOTE

€ **The e . i e . a . . i e i he fa . a . de i le . ha 2 .**

A.7.2 CPR C e i S ecifica i

C e i f CPR Se

Compression rate	Measurement range: 40 to 160 cpm Accuracy: ±2 cpm

C e i f Elec de Pad

Compression rate	Measurement range: 60 to 200 cpm Accuracy: ±3 cpm

A.7.3 Pace S ecifica i

Standards	Meet standards of IEC 60601-2-4
Pacer mode	Demand, fixed
Output waveform	Monophasic square wave pulse pulse width 20 ms or 40 ms Accuracy: ±5%
Pacing rate	30ppm to 210ppm Accuracy: ±1.5% Resolution: 5 ppm
Pacing output	0mA to 200mA, Accuracy: ±5% or ±5mA, whichever is greater Resolution: 1mA, 2mA or 5mA
Refractory period	200 to 300 ms (depending on pacing rate)
4:1 pacing	Pacing pulse frequency reduced by a factor of 4 when this function is activated.

NOTE

€ **Whe aci g a ei cha ged f 30 210 , he e e i e aci g (HR i i g f 30b 210b) i le ha 20 .**

A.8 M i S ecifica i

A.8.1 ECG S ecifica i (f ECG Acce ie)

Standards	Meet standards of IEC 60601-2-27 and IEC 60601-2-25
Patient connection	3-lead ECG cable, 5-lead ECG cable or 12-lead ECG cable
ECG inputs	3-lead ECG: I, II, III 5-lead ECG: I, II, III, aVR, aVL, aVF, V 12-lead ECG: I, II, III, aVR, aVL, aVF, V1 to V6
ECG standard	AHA, IEC
Display sensitivity	1.25 mm/mV (×0.125), 2.5 mm/mV (×0.25), 5 mm/mV (×0.5), 10 mm/mV (×1), 20 mm/mV (×2), 40mm/mV (×4), Auto, less than W*

Pace pulse markers	Pace pulses meeting the following conditions are labelled with a PACE marker: Amplitude: ±2 to ± 700 mV Width: 0.1 to 2 ms Rise time: 10 to 100 µs (no greater than 10% of pulse width) No overshoot
Pace pulse rejection	When tested in accordance with the IEC 60601-2-27: 201.12.1.101.13, the heart rate meter rejects all pulses meeting the following conditions. Amplitude: ±2 to ± 700 mV Width: 0.1 to 2 ms Rise time: 10 to 100 µs Input slew rate: 2.2 V/s ± 15% RTI No overshoot
HR	
Measurement range	Adult: 15 to 300 bpm Pediatric, neonate: 15 to 350 bpm
Accuracy	±1% or ±1bpm, which ever is greater
Resolution	1 bpm
Sensitivity	200 V (lead II)
Heart rate averaging	In compliance with the requirements in Clause 201.7.9.2.9.101 b) 3) of IEC 60601-2-27, the following method is used: If the last 3 consecutive RR intervals are greater than 1200 ms, the 4 most recent RR intervals are averaged to compute the HR. Otherwise, heart rate is computed by subtracting the maximum and minimum ones from the most recent 12 RR intervals and then averaging them. The HR value displayed on the screen is updated every second.
Response time to heart rate change	Meets the requirements of IEC 60601-2-27: Clause 201.7.9.2.9.101 b) 5).

ST Segment Analysis	
Measurement range	-2.0 to 2.0 mV RTI
Accuracy	-0.8 to 0.8 mV: ±0.02 mV or ±10%, whichever is greater. Beyond this range: Not specified.
Resolution	0.01 mV
QT/QTc Analysis	
Measurement range	QT: 200 to 800 ms QTc: 200 to 800 ms QT-HR: 15 to 150 bpm for adult, 15 to 180 bpm for pediatric and neonate
Accuracy	QT: ±30 ms
Resolution	QT: 4 ms QTc: 1 ms
12-lead ECG Interpretation	
Sampling rate	1000 samples/s (A/D) 500 samples/s (ECG algorithm)
Amplitude quantization	24 bits
Measurements	Heart rate, PR interval, QRS duration, QT/QTc interval, P/QRS/T axis and diagnosis statement

A.8.2 ECG Specifications (for Thera Acce ories)

Patient connection	Paddles or multifunction electrode pads
ECG inputs	Paddles or Pads
Display sensitivity	1.25 mm/mV (×0.125), 2.5 mm/mV (×0.25), 5 mm/mV (×0.5), 10 mm/mV (×1), 20 mm/mV (×2), 40mm/mV (×4), Auto, less than 5% error
Sweep speed	6.25mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s, less than 5% error
Bandwidth (-3dB)	Therapy mode: 1 to 20 Hz (+0.4dB, -3.0dB)
Common mode rejection	Therapy mode: >105 dB (with notch filter on)
Notch filter	Therapy mode: 50/60Hz, notch filter turns on automatically.
Differential input impedance	5 M
ECG signal range	±8mV (peak-to-peak value)
Calibration signal	1mV (peak-to-peak value) ±5%
Electrode offset potential tolerance	±1V
Lead-off detection current	0.1 A
Baseline recovery time	<2.5 s (after defibrillation)
Defibrillation protection	Enduring 5000V (360 J) charge without data loss or corruption Baseline recovery time: <2.5 s (after defibrillation) Polarization recovery time: <10 s Defibrillation energy absorption: 10% (100 load)
ESU protection	Cut mode: 300 W Coagulate mode: 100 W Recovery time: 10 s In compliance with the requirements in clause 202.6.2.101 of IEC 60601-2-27
Pace Pulse	

Pace pulse markers	Pace pulses meeting the following conditions are labelled with a PACE marker: Amplitude: ±2 to ± 700 mV Width: 0.1 to 2 ms Rise time: 10 to 100 µs (no greater than 10% of pulse width) No overshoot
Pace pulse rejection	When tested in accordance with the IEC 60601-2-27: 201.12.1.101.13, the heart rate meter rejects all pulses meeting the following conditions. Amplitude: ±2 to ± 700 mV Width: 0.1 to 2 ms Rise time: 10 to 100 µs No overshoot
HR	
Measurement range	Adult: 15 to 300 bpm Pediatric 15 to 350 bpm
Accuracy	±1% or ±1bpm, which ever is greater
Resolution	1 bpm
Sensitivity	200 V
Heart rate averaging	In compliance with the requirements in Clause 201.7.9.2.9.101 b) 3) of IEC 60601-2-27, the following method is used: If the last 3 consecutive RR intervals are greater than 1200 ms, the 4 most recent RR intervals are averaged to compute the HR. Otherwise, heart rate is computed by subtracting the maximum and minimum ones from the most recent 12 RR intervals and then averaging them. The HR value displayed on the screen is updated every second.
Response time to heart rate change	Meets the requirements of IEC 60601-2-27: Clause 201.7.9.2.9.101 b) 5). From 80 to 120 bpm: less than 11 s From 80 to 40 bpm: less than 11 s
Time to alarm for tachycardia	Meets the requirements in Clause 201.7.9.2.9.101 b) 6) of IEC 60601-2-27. Waveform 4ah - range: <11 s 4a - range: <11 s 4ad - range: <11 s 4bh - range: <11 s 4b - range: <11 s 4bd - range: <11 s
Arrhythmia analysis classifications	Asystole, V-Fib/V-Tach, PNP, PNC
Tall T-wave rejection capability	When the test is performed based on Clause 201.12.1.101.17 of IEC 60601-2-27, the heart rate meter will reject all 100 ms QRS complexes with less than 1.2 mV of amplitude, and T waves with T-wave interval of 180 ms and those with Q-T interval of 350 ms.
Response to irregular rhythm	In compliance with the requirements in Clause 201.7.9.2.9.101 b) 4) of IEC 60601-2-27, the heart rate after 20 seconds of stabilization is displayed as follows: Ventricular bigeminy (3a): 80±1 bpm Slow alternating ventricular bigeminy (3b): 60±1 bpm Rapid alternating ventricular bigeminy (3c): 120±1 bpm Bidirectional systoles (3d): 90±2 bpm

A.8.3 Re S ecifica i

Lead	Options are lead I, II and Auto.

A.8.4 S O_2 S ecifica i

Mi d a S O_2 M d. le

Ra e	
Display range	20 to 300 cpm
Accuracy range	40 to 160 cpm
Accuracy	±3 cpm
Resolution	1 cpm

Ma i8 S O_2 M d. le

Standard	Meet standards of ISO 80601-2-61
Measurement range	1% to 100%
Resolution	1%
Response time	20 s (normal perfusion, no disturbance, SpO_2 value sudden changes from 70% to 100%)
Accuracy[1]	70% to 100%: ±2%ABS (measured without motion in adult/pediatric mode) 70% to 100%: ±3%ABS (measured without motion in neonate mode) 70% to 100%: ±3%ABS (measured with motion) 1% to 69%: not specified
Refreshing rate	1 s
SpO_2 averaging time	2-4 s, 4-6 s, 8 s, 10 s, 12 s, 14 s, 16 s
Low perfusion conditions	Pulse amplitude: >0.02% Light penetration: >5%
Low perfusion SpO_2 accuracy[2]	±2%
PI measurement range	0.02 to 20%

[1] The Masimo pulse oximeter with sensors have been validated for no motion accuracy in human blood studies on healthy adult volunteers in induced hypoxia studies in the range of 70% to 100% SpO2 against a laboratory co-oximeter and ECG monitor. This variation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population. One percent was added to the accuracies for neonatal sensors to account for accuracy variation due to properties of fetal hemoglobin.

The Masimo pulse oximeter with sensors has been validated for motion accuracy in human blood studies on healthy adult volunteers in induced hypoxia studies while performing rubbing

Nellc S O_2 M d. le

A.8.5 PR Specifications

PR from Mindray SpO_2 module

Measurement range	20 to 300 bpm
Resolution	1 bpm
Response time	<30 s (normal perfusion, no disturbance, PR value sudden changes from 25 to 220bpm)
Accuracy	±3 bpm
Refreshing rate	1 s

PR from Masimo SpO_2 module

Measurement range	25 to 240 bpm
Resolution	1 bpm
Response time	20 s (with normal perfusion, no disturbance, and a PR value transition from 25 to 220 bpm)
Accuracy	±3 bpm (measured without motion) ±5 bpm (measured with motion)
Refreshing rate	1 s

PR from Nellcor SpO_2 module

Measurement range	20 to 300 bpm
Resolution	1 bpm
Response time	30 s (normal perfusion, no disturbance, PR value sudden change from 25 to 250 bpm)
Accuracy	20 to 250 bpm: ±3 bpm 251 to 300 bpm: not specified
Refreshing rate	1 s

PR from IBP module

Measurement range	25 to 350 bpm
Resolution	1 bpm
Accuracy	±1 bpm or ±1%, whichever is greater

A.8.6 NIBP Specifications

Standards	Meet standard of IEC 80601-2-30
Technique	Oscillometry
Mode of operation	Manual, Auto, STAT, Sequence
Auto mode repetition intervals	1 min, 2 min, 2.5 min, 3 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 h, 1.5 h, 2 h, 3 h, 4 h, 8 h
STAT mode cycle time	5 min
Maximum measurement time	Adult, pediatric: 180s Neonate: 90s

Measurement range	Measurement Item	Adult	Pediatric	Neonate
	Systolic (mmHg)	25 to 290	25 to 240	25 to 140
	Diastolic (mmHg)	10 to 250	10 to 200	10 to 115
	Mean (mmHg)	15 to 260	15 to 215	15 to 125
Measurement accuracy*	Max mean error: ±5 mmHg Max standard deviation: 8 mmHg			
Static pressure measurement range	0mmHg to 300mmHg			
Static pressure measurement accuracy	±3mmHg			
Resolution	1 mmHg			
Software overpressure protection	Adult: Pediatric: Neonate:	297±3 mmHg 297±3 mmHg 147±3 mmHg		
Initial cuff inflation pressure range	Adult: Pediatric: Neonate:	80 to 280 mmHg 80 to 210 mmHg 60 to 140 mmHg		

*Measurement accuracy verification: In adult and pediatric modes, the blood pressure measurements measured with this device are in compliance with the Standard for Non-invasive sphygmomanometers (ISO 81060-2)in terms of mean error and stardard deviation by comparing with intra-arterial or auscultatory measurements (depending on the configuration) in a typical patient population. For auscultatory reference, the 5th Korotkoff sound was used to determine the diastolic pressure.

In neonatal mode, the blood pressure measurements measured with this device are in compliance with the American National Standard for Non-invasive sphygmomanometers (ISO 81060-2) in terms of mean error and standard deviation by comparing with intra-arterial measurements (depending on the configuration) in a typical patient population.

PR	
Measurement range	30 to300 bpm
Resolution	1 bpm
Accuracy	±3bpm or ±3%, whichever is greater

A.8.7 Temperature Specification

A.8.8 IBP Specification

Accuracy	±2% or ±1 mmHg, whichever is greater (excluding sensor error)
Refreshing rate	1 s
P e . e a d. ce	
Excitement voltage	5 VDC, ±2%
Sensitivity	5 V/V/mmHg
Zero adjustment range	±200 mmHg
Impedance range	300 to 3000
Volume displacement	<0.04 mm^3/100 mmHg

A.8.9 CO_2 S ecifica i

Measurement mode	Sidestream, mainstream
Technique	Infrared absorption
Apnea time	10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s

Side ea CO_2 M d. le

Standard	Meet the st.1(r)15.5(d)- BT (e st)4.5(.1(r)15.5(d)- BT (e st)4.5(.1(r)15.5(d)9.04 417.24 .4713

O_2	100%	±1 mmHg
N_2O	60%	
Hal	4%	
Sev	5%	
Iso	5%	
Enf	5%	
Des	15%	±2 mmHg
[1] Inaccuracy specifications are affected by the breath rate and I: E change. The accuracy is within specification for breath rate 60rpm and I/E ratio 1:1, or breath rate 30rpm and I/E ratio 2:1.		
[2] means an extra error should be added in case of gas interference when CO_2 measurements are performed between 0-40mmHg.		

Mainstream CO_2 Module

Standard	Meet the standard of ISO 80601-2-55
Measurement range	0 to 150 mmHg
Accuracy*	0 to 40 mmHg: ±2 mmHg 41 to 70 mmHg: ±5% of the reading 71 to 100 mmHg: ±8% of the reading 101 to 150 mmHg: ±10% of the reading
Accuracy drift	Meets the requirement for measurement accuracy within 6 hours.
Resolution	1mmHg
Rise time	<60 ms
Data sample rate	100 Hz
*The accuracy is tested at ambient temperature of 35 °C.	
awRR	
awRR measurement range	0 to 150 rpm
awRR accuracy	±1 rpm
awRR resolution	1 rpm

Thi age i e i all lef bla k.

B EMC and Radio Regulatory Compliance

B.1 EMC

The equipment meets the requirements of IEC 60601-1-2: 2014.

WARNING

- Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this device could result in increased electromagnetic emissions or decreased electromagnetic immunity of this device and result in improper operation.
- The -ME EQUIPMENT (e.g. ITE) should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the -ME EQUIPMENT should be observed to verify normal operation in the configuration in which it will be used.
- Use of this device adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this device and the other equipment should be observed to verify that they are operating normally.
- 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 this device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this device could result.
- Other devices may affect this equipment even though they meet the requirements of CISPR.
- When there is a conflict between this manufacturer's statements in this document and applicable technical specifications, the more stringent ones should apply.

NOTE

- These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. However, because of the proliferation of radio frequency emitting equipment and other sources of electrical noise in healthcare and other environments, it is possible that high levels of such interference due to proximity or strength of a source might disrupt the performance of this device.
- Portable and mobile RF communications equipment can affect medical electrical equipment.
- This equipment is intended for use by healthcare professionals only. This equipment may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as re-orienting or relocating the equipment or shielding the location or restricting use to certain locations.

Guidance and Declaration - Electromagnetic Emissions		
The equipment is suitable for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The equipment 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 equipment is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 60601-1-2 EN 61000-3-2	Class A	
Voltage fluctuations/flicker emissions IEC 60601-1-2 EN 61000-3-3	Complies	

If the device is operated within the electromagnetic environment listed in Table **Guidance and Declaration - Electromagnetic Immunity**, the equipment will remain safe and provide the following essential performance: HR accuracy, Resp accuracy, SpO_2 accuracy, PR accuracy, NIBP accuracy, Temp accuracy, IBP accuracy, CO_2 accuracy, Pacing rate accuracy, Pacing output accuracy, ECG accuracy, CPR function, alarm, data stored, user's interface function.

Guidance and Declaration - Electromagnetic Immunity			
The equipment is suitable for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15kV air	±8 kV contact ±15kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines (length greater than 3 m)	±2 kV for power supply lines ±1 kV for input/output lines (length greater than 3 m)	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	
Voltage dips and Voltage interruptions IEC 61000-4-11	0% U_T for 0,5 cycle 0% U_T for 1 cycle and 70% U_T for 25/30 cycles 0% U_T for 250/300 cycle	0% U_T for 0,5 cycle 0% U_T for 1 cycle and 70% U_T for 25/30 cycles 0% U_T for 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of our product requires continued operation during power mains interruptions, it is recommended that our product be powered from an uninterruptible power supply or a battery.
RATED power frequency magnetic fields IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
U_T is the A.C. mains voltage prior to application of the test level.			

Guidance and Declaration - Electromagnetic Emissions

The equipment is suitable for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.

Emissions test	IEC 60601 Test level	Compliance level	Electromagnetic environment - guidance
Conduced RF IEC 61000-4-6	3 Vrms 150k to 80 MHz	3 Vrms (V1)	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:
	6 Vrms in ISM bands and amateur radio bands[a] between 0.15 MHz and 80 MHz	6 Vrms (V2)	
Radiated RF EM fields IEC 61000-4-3	3V/m 80 MHz to 2.7 GHz (IEC60601-2-27, IEC60601-2-25, IEC60601-2-49, IEC60601-2-34)	3 V/m (E1)	150k to 80 MHz
	10V/m 80 MHz to 2.7 GHz (IEC60601-2-4)	10 V/m	80 MHz to 800 MHz
	20V/m 80 MHz to 2.7GHz (IEC60601-2-4, EC80601-2-30, ISO 80601-2-55, ISO 80601-2-56, ISO 80601-2-61)	20 V/m	800 MHz to 2.7 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m)[b]
Proximity fields from RF wireless communications equipment IEC61000-4-3	27 V/m 380 to 390 MHz	27 V/m	Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[c], should be less than the compliance level in each frequency range[d] Interference may occur in the vicinity of equipment marked with the following symbol:
	28 V/m 430 to 470 MHz, 800 to 960 MHz, 1700 to 1990 MHz, 2400 to 2570 MHz	28 V/m	
	9 V/m 704 to 787 MHz, 5100 to 5800 MHz	9 V/m	

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and

Rec ded Se a i Di a ce be ee P able a d M bile RF, C . ica i E . i e a d Thi E . i e
The equipment is intended for use in an electromagnetic environment in which radiated RF disturbance are controlled. The customer or the user of the equipment can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobi RF communications equipment (transmitters) and the equipment as recommended below, according to the maximum output power of the communication equipment.

Ra ed Ma i . O . . e f Ta i e Wa (W)	Se a i Di a ce Acc di g F e . e c f Ta i e ()		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.7 GHz
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.20	1.20	2.30
10	3.80	3.80	7.30
100	12.00	12.00	23.00

For transmitters at a maximum output power not listed above, the recommended separation distanced in meters (m) can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

B.2 Radi Reg. la C lia ce

The device comply with the essential requirements and other relevant provisions of Directive 2014/53/EU.

WARNING

€ Kee a di a ce f a lea 20 c a a f hee . i e he iele f. c i i i . e.