

## Anexa 2 Ecograf staționar de înaltă performanță

Specificatia solicitata	Specificatia ofertata, model <b>Voluson E10 (GE Healthcare)</b>
<p>Ecograf staționar de înaltă performanță dedicat examinărilor de sănătate a femeilor atât 2D, 3D cât și 4D</p> <p>Echipament conceput atât pentru examinări obstetrice - ginecologice, abdominale, vasculare, pediatrie, cardiologice, cord fetal, musculoscheletale si parti moi</p> <p><b>CARACTERISTICI CONSTRUCTIVE, STRUCTURALE SI DIMENSIONALE</b></p> <p>Dimensiuni maxime (inaltime x latime x adancime): 1525 x 580 x 940 mm</p> <p>Echipamentul nu cântărește mai mult de 148 de kg</p> <p>Deplasarea consolei în plan vertical realizabilă prin acționare electromecanică pentru un interval minim 1330 - 1660 mm</p> <p>Consolă prevăzută cu sistem de asigurare al cablurilor</p> <p>Consola cu porturi integrate pentru instalarea perifericelor situate in partea frontala a echipamentului – 2 periferice</p> <p><b>DESCRIEREA CONSOLEI</b></p> <p>Monitor cu tehnologie de tip OLED</p> <p>Diagonala monitorului nu mai mic de 22"</p> <p>Rezoluția monitorului: 1920 x 1080 pixeli</p> <p>Braț articulată al monitorului cu posibilitate de înclinare a acestuia minim: +30°/-75° și rotații minim: +/-90°</p> <p>Ecograf cu 4 porturi active pentru traductori și un port pentru traductorul tip non-imagine</p> <p>Echipament cu iluminator integrat pentru porturile de traductori</p> <p><b>INTERFATA CU UTILIZATORUL</b></p> <p>Ecran de comanda tactil LCD color cu diagonala de 12.1 inch</p> <p>Interfața software cu posibilitatea de a fi editabilă pentru crearea unor profiluri individuale de utilizator</p> <p>Ecograf prevăzută cu tastatură alfanumerică și cu taste iluminate</p> <p>Ecograf cu taste de control configurabile pentru activarea funcțiilor a cel puțin 6 dispozitive periferice externe (imprimante, comunicare DICOM, memorie de lungă durată, etc.)</p> <p>Soft ce permite comunicare DICOM</p> <p><b>MODURI DE OPERARE (Fundamentale si derivate din cele fundamentale)</b></p> <p>Moduri de funcționare fundamentale:</p> <ul style="list-style-type: none"> <li>- mod de tip M</li> <li>- mod de tip 2D</li> <li>- mod Doppler (Color, Power, Spectral)</li> </ul> <p>Moduri de funcționare derivate și/sau combinate din cele fundamentale:</p> <ul style="list-style-type: none"> <li>- Posibilitate de upgradare cu mod M Anatomic</li> <li>- mod Doppler Spectral Pulsat</li> <li>- Mod Doppler Continuu integrat</li> <li>- mod Doppler Power de înaltă definiție</li> <li>- Mod Doppler Tisular</li> </ul> <p>Dispune de posibilitate de upgradare cu mod 3D în timp real (4D)</p> <p>Are capacitatea de a funcționa cu 3 moduri de lucru active în același timp (triplex)</p> <p><b>TIPURI DE TRADUCTORI COMPATIBILI CU ECOGRAFUL</b></p>	<p>Ecograf staționar de înaltă performanță dedicat examinărilor de sănătate a femeilor atât 2D, 3D cât și 4D</p> <p>Echipament conceput atât pentru examinări obstetrice - ginecologice, abdominale, vasculare, pediatrie, cardiologice, cord fetal, musculoscheletale si parti moi</p> <p><b>CARACTERISTICI CONSTRUCTIVE, STRUCTURALE SI DIMENSIONALE</b></p> <p>Dimensiuni maxime (inaltime x latime x adancime): 1670 x 580 x 940 mm</p> <p>Echipamentul cântărește 147 de kg.</p> <p>Deplasarea consolei în plan vertical realizabilă prin acționare electromecanică pentru un interval 1330 - 1660 mm</p> <p>Consolă prevăzută cu sistem de asigurare al cablurilor</p> <p>Consola cu porturi integrate pentru instalarea perifericelor situate in partea frontala a echipamentului – 2 periferice</p> <p><b>DESCRIEREA CONSOLEI</b></p> <p>Monitor cu tehnologie de tip OLED</p> <p>Diagonala monitorului de 22"</p> <p>Rezoluția monitorului: 1920 x 1080 pixeli</p> <p>Braț articulată al monitorului cu posibilitate de înclinare a acestuia: +30°/-75° și rotații: +/-90°</p> <p>Ecograf cu 4 porturi active pentru traductori și un port pentru traductorul tip non-imagine.</p> <p>Echipament cu iluminator integrat pentru porturile de traductori</p> <p><b>INTERFATA CU UTILIZATORUL</b></p> <p>Ecran de comanda tactil LCD color cu diagonala de 12.1 inch</p> <p>Interfața software cu posibilitatea de a fi editabilă pentru crearea unor profiluri individuale de utilizator</p> <p>Ecograf prevăzută cu tastatură alfanumerică și cu taste iluminate</p> <p>Ecograf cu taste de control configurabile pentru activarea funcțiilor a cel puțin 6 dispozitive periferice externe (imprimante, comunicare DICOM, memorie de lungă durată, etc.)</p> <p>Soft ce permite comunicare DICOM</p> <p><b>MODURI DE OPERARE (Fundamentale si derivate din cele fundamentale)</b></p> <p>Windows 10.</p> <p>Moduri de funcționare fundamentale:</p> <ul style="list-style-type: none"> <li>- mod de tip M</li> <li>- mod de tip 2D</li> <li>- mod Doppler (Color, Power, Spectral)</li> </ul> <p>Moduri de funcționare derivate și/sau combinate din cele fundamentale:</p> <ul style="list-style-type: none"> <li>- Posibilitate de upgradare cu mod M Anatomic</li> <li>- mod Doppler Spectral Pulsat</li> <li>- Mod Doppler Continuu integrat</li> <li>- mod Doppler Power de înaltă definiție</li> <li>- Mod Doppler Tisular</li> </ul> <p>Dispune de posibilitate de upgradare cu mod 3D în timp real (4D)</p> <p>Are capacitatea de a funcționa cu 3 moduri de lucru active în același timp (triplex)</p> <p><b>TIPURI DE TRADUCTORI COMPATIBILI CU ECOGRAFUL</b></p>

<p>Sondele disponibile prezintă în componență materiale piezoelectrice împreună cu tehnologie de amplificare acustică</p> <p>Echipamentul permite conectare și lucru cu traductori tip matriceal volumetric electronic cu peste 7.000 cristale</p> <p>Adâncimea minimă de scanare echipamentului &lt; 0.5 cm</p> <p>Adâncimea maximă de scanare a echipamentului &gt; 41 cm</p> <p>Compatibilitate cu următoarele tipuri de traductori:</p> <p>Traductori de tip convex, micro-convex și micro-convex endocavitar 2D ce acopera în întregime domeniul 2 - 9 MHz</p> <p>Traductori de tip micro-convex endocavitar 4D ce acopera în întregime domeniul 4 - 13 MHz</p> <p>Traductori de tip convex volumetric ce acopera în întregime domeniul 2 - 8 MHz</p> <p>Traductori de tip convex volumetric realizați în tehnologie matriceala ce acopera în întregime domeniul 1 - 7 MHz</p> <p>Traductori de tip convex volumetric electronic realizați în tehnologie matriceala ce acopera în întregime domeniul 2 - 7 MHz</p> <p>Traductori de tip liniar ce acopera în întregime domeniul 3 - 13 MHz</p> <p>Traductori de tip liniar volumetric ce acopera în întregime domeniul 6 - 18 MHz</p> <p>Traductori de tip sectorial arie fazată ce acopera în întregime domeniul 1.5 - 9 MHz</p> <p><b>PROCESAREA IMAGINII</b></p> <p>Formator de unde digital</p> <p>Peste 740.000.000 de canale efective digitale de procesare</p> <p>Gama dinamică: aproximativ 278 dB</p> <p>Posibilitate de focalizare selectivă disponibilă în transmisie reglabilă între 1 și 10 zone</p> <p>Peste 16 milioane de culori</p> <p>Optimizare automată a imaginii la nivel de pixel, pentru reducerea interacțiunii operatorului cu echipamentul</p> <p>În vederea îmbunătățirii calității imaginii, echipamentul dispune de o tehnică de procesare a imaginii prin analiză comparativă a tuturor pixelilor ce formează imaginile efective, în relație cu pixelii din imediata vecinătate</p> <p>Echipament ce permite în timp real compunerea spațială a mai multor imagini obținute din unghiuri diferite ale aceleiași zone scanate într-o singură imagine</p> <p>Prezintă posibilitatea lărgirii câmpului vizual la funcționarea cu traductori liniari în scopul afișării pe ecran a unor zone suplimentare de țesut – imagine trapezoidală</p> <p>Echipament care permite formarea imaginii 2D prin emisia succesivă cu două frecvențe diferite (înalță și joasă) și combinarea într-o singură imagine a ecourilor rezultate</p> <p>Posibilitate de upgradat cu tehnologia ce permite diferențierea țesuturilor și definirea mai bună a marginilor structurilor prin creșterea rezoluției laterale și axiale</p> <p><b>BAZĂ DE DATE DE PACIENȚI</b></p> <p>Echipamentul înglobează o bază de date pacienți capabilă să stocheze datele demografice ale acestora, imagini statice și în mișcare, rapoarte</p> <p>Formatul de stocare a imaginilor asociate pacienților este unul brut și permite la accesarea ulterioară a pacienților modificarea:</p> <ul style="list-style-type: none"> <li>- amplificării în modul 2D</li> <li>- corecției de unghi pentru imaginile Doppler Spectral</li> </ul>	<p>Sondele disponibile prezintă în componență materiale piezoelectrice împreună cu tehnologie de amplificare acustică</p> <p>Echipamentul permite conectare și lucru cu traductori tip matriceal volumetric electronic cu peste 7.000 cristale</p> <p>Adâncimea minimă de scanare echipamentului 0 cm</p> <p>Adâncimea maximă de scanare a echipamentului 50 cm</p> <p>Compatibilitate cu următoarele tipuri de traductori:</p> <p>Traductori de tip convex, micro-convex și micro-convex endocavitar 2D ce acopera în întregime domeniul 2 - 9 MHz</p> <p>Traductori de tip micro-convex endocavitar 4D ce acopera în întregime domeniul 4 - 13 MHz</p> <p>Traductori de tip convex volumetric ce acopera în întregime domeniul 2 - 8 MHz</p> <p>Traductori de tip convex volumetric realizați în tehnologie matriceala ce acopera în întregime domeniul 1 - 7 MHz</p> <p>Traductori de tip convex volumetric electronic realizați în tehnologie matriceala ce acopera în întregime domeniul 2 - 7 MHz</p> <p>Traductori de tip liniar ce acopera în întregime domeniul 3 - 13 MHz</p> <p>Traductori de tip liniar volumetric ce acopera în întregime domeniul 6 - 18 MHz</p> <p>Traductori de tip sectorial arie fazată ce acopera în întregime domeniul 1.5 - 9 MHz</p> <p><b>PROCESAREA IMAGINII</b></p> <p>Formator de unde digital</p> <p>743.265.431 de canale efective digitale de procesare</p> <p>Gama dinamică: 280 dB</p> <p>Posibilitate de focalizare selectivă disponibilă în transmisie reglabilă între 1 și 10 zone</p> <p>16,8 milioane de culori</p> <p>Optimizare automată a imaginii la nivel de pixel, pentru reducerea interacțiunii operatorului cu echipamentul</p> <p>În vederea îmbunătățirii calității imaginii, echipamentul dispune de o tehnică de procesare a imaginii prin analiză comparativă a tuturor pixelilor ce formează imaginile efective, în relație cu pixelii din imediata vecinătate</p> <p>Echipament ce permite în timp real compunerea spațială a mai multor imagini obținute din unghiuri diferite ale aceleiași zone scanate într-o singură imagine</p> <p>Prezintă posibilitatea lărgirii câmpului vizual la funcționarea cu traductori liniari în scopul afișării pe ecran a unor zone suplimentare de țesut – imagine trapezoidală</p> <p>Echipament care permite formarea imaginii 2D prin emisia succesivă cu două frecvențe diferite (înalță și joasă) și combinarea într-o singură imagine a ecourilor rezultate</p> <p>Posibilitate de upgradat cu tehnologia ce permite diferențierea țesuturilor și definirea mai bună a marginilor structurilor prin creșterea rezoluției laterale și axiale</p> <p><b>BAZĂ DE DATE DE PACIENȚI</b></p> <p>Echipamentul înglobează o bază de date pacienți capabilă să stocheze datele demografice ale acestora, imagini statice și în mișcare, rapoarte</p> <p>Formatul de stocare a imaginilor asociate pacienților este unul brut și permite la accesarea ulterioară a pacienților modificarea:</p> <ul style="list-style-type: none"> <li>- amplificării în modul 2D</li> <li>- corecției de unghi pentru imaginile Doppler Spectral</li> </ul>
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<p>- pozitiei liniei de baza pentru imaginilor Doppler Spectral Informatiile stocate in baza de date prezinta posibilitatea de fi exportate cel putin in urmatoarele formate:</p> <ul style="list-style-type: none"> <li>- format tip DICOM</li> <li>- tip BMP, tip TIFF si/sau tip JPEG</li> <li>- tip AVI</li> </ul> <p>Permite exportul informatiilor prin urmatoarele dispozitive: USB CD-R DVD-R E-mail</p> <p>Dispune de posibilitate de upgradare cu modul ce permite inregistrare video digitala (DVR)</p> <p><b>TEHNOLOGII SI PROGRAME DE EXAMINARE SPECIALE</b></p> <p>Dispune de posibilitate de upgradare cu mod de analiza ce ofera evaluarea proprietatilor elasticitatii tesuturilor prin aplicarea unei presiuni mecanice de catre utilizator</p> <p>Dispune de posibilitate de upgradare cu instrument de analiza a elastografiei atat pe sondele liniare cat si pe sondele endocavitare 2D si 4D</p> <p>Dispune de posibilitate de upgradare cu modul de analiza a elasticitatii tesuturilor, echipamentul permite urmatoarele:</p> <ul style="list-style-type: none"> <li>- evaluarea colului uterin in timpul sarcinii</li> <li>- o vizualizare mai buna a fibromului uterin</li> <li>- investigarea tumorilor maligne cervicale</li> </ul> <p>Dispune de posibilitate de upgradare elastografie si va prezinta urmatoarele caracteristici:</p> <ul style="list-style-type: none"> <li>- imagine singulara</li> <li>- imaginile se pot vizualiza in mod dual</li> <li>- vizualizarea a 4 imagini simultan</li> </ul> <p>Posibilitate de evaluare a elasticitatii tesuturilor prin analiza cantitativa</p> <p>Echipamentul dispune de posibilitate de upgradare cu mod pentru ecografie de contrast hibrid ce ii ofera utilizatorului capacitatea de a detecta si caracteriza mai usor leziunile tesutului</p> <p>Echipamentul dispune de posibilitate de upgradare cu Soft pentru evaluare 3D a trompelor uterine cu ajutorul substantei de contrast pentru inlocuirea histerosalpingosonografiei clasice</p> <p>Mod de lucru ce pune in evidenta fluxurile sangvine fara utilizarea tehnologiei Doppler in modul B. Tehnica digitala prezinta urmatoarele caracteristici:</p> <ul style="list-style-type: none"> <li>- evidentiaza cu intensitati diferite vasele de sange pentru o mai buna vizualizare si o rezolutie spatiala superioara</li> <li>- poate afisa imagine in mod dual sau mod unic</li> <li>- se pot vizualiza 4 imagini simultan</li> </ul> <p>Din punct de vedere al afisajului, acest mod de lucru furnizeaza in timp real o expunere ce seamana cu o angiograma</p> <p>Echipamentul dispune de posibilitate de upgradare cu tehnologia ce permite vizualizarea rapida a celor mai mici vase sangvine intr-un afisaj 3D</p> <p>Dispune de posibilitate de upgradare cu modul de calcul semiautomat si asistat al volumelor din zone de interes ce prezinta forma excentrica sau a unor structuri anatomice bazate pe achizitie de 3D. Acest mod de lucru prezinta rmatoarele caracteristici:</p> <ul style="list-style-type: none"> <li>- utilizatorului i se ofera posibilitatea de a regla masuratorile</li> </ul>	<p>- pozitiei liniei de baza pentru imaginilor Doppler Spectral Informatiile stocate in baza de date prezinta posibilitatea de fi exportate cel putin in urmatoarele formate:</p> <ul style="list-style-type: none"> <li>- format tip DICOM</li> <li>- tip BMP, tip TIFF si/sau tip JPEG</li> <li>- tip AVI</li> </ul> <p>Permite exportul informatiilor prin urmatoarele dispozitive: USB CD-R DVD-R E-mail</p> <p>Dispune de posibilitate de upgradare cu modul ce permite inregistrare video digitala (DVR)</p> <p><b>TEHNOLOGII SI PROGRAME DE EXAMINARE SPECIALE</b></p> <p>Dispune de posibilitate de upgradare cu mod de analiza ce ofera evaluarea proprietatilor elasticitatii tesuturilor prin aplicarea unei presiuni mecanice de catre utilizator</p> <p>Dispune de posibilitate de upgradare cu instrument de analiza a elastografiei atat pe sondele liniare cat si pe sondele endocavitare 2D si 4D</p> <p>Dispune de posibilitate de upgradare cu modul de analiza a elasticitatii tesuturilor, echipamentul permite urmatoarele:</p> <ul style="list-style-type: none"> <li>- evaluarea colului uterin in timpul sarcinii</li> <li>- o vizualizare mai buna a fibromului uterin</li> <li>- investigarea tumorilor maligne cervicale</li> </ul> <p>Dispune de posibilitate de upgradare elastografie si va prezinta urmatoarele caracteristici:</p> <ul style="list-style-type: none"> <li>- imagine singulara</li> <li>- imaginile se pot vizualiza in mod dual</li> <li>- vizualizarea a 4 imagini simultan</li> </ul> <p>Posibilitate de evaluare a elasticitatii tesuturilor prin analiza cantitativa</p> <p>Echipamentul dispune de posibilitate de upgradare cu mod pentru ecografie de contrast hibrid ce ii ofera utilizatorului capacitatea de a detecta si caracteriza mai usor leziunile tesutului</p> <p>Echipamentul dispune de posibilitate de upgradare cu Soft pentru evaluare 3D a trompelor uterine cu ajutorul substantei de contrast pentru inlocuirea histerosalpingosonografiei clasice</p> <p>Mod de lucru ce pune in evidenta fluxurile sangvine fara utilizarea tehnologiei Doppler in modul B. Tehnica digitala prezinta urmatoarele caracteristici:</p> <ul style="list-style-type: none"> <li>- evidentiaza cu intensitati diferite vasele de sange pentru o mai buna vizualizare si o rezolutie spatiala superioara</li> <li>- poate afisa imagine in mod dual sau mod unic</li> <li>- se pot vizualiza 4 imagini simultan</li> </ul> <p>Din punct de vedere al afisajului, acest mod de lucru furnizeaza in timp real o expunere ce seamana cu o angiograma</p> <p>Echipamentul dispune de posibilitate de upgradare cu tehnologia ce permite vizualizarea rapida a celor mai mici vase sangvine intr-un afisaj 3D</p> <p>Dispune de posibilitate de upgradare cu modul de calcul semiautomat si asistat al volumelor din zone de interes ce prezinta forma excentrica sau a unor structuri anatomice bazate pe achizitie de 3D. Acest mod de lucru prezinta rmatoarele caracteristici:</p> <ul style="list-style-type: none"> <li>- utilizatorului i se ofera posibilitatea de a regla masuratorile</li> </ul>
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- acest mod de calcul poate fi utilizat atat in oncologie cat si in perinatologie  
- poate fi utilizat cu Power Doppler in vederea obtinerii de histograme de volum  
Acest mod de lucru permite calcularea urmatoarelor volume:  
- calcularea semiautomata a volumului dilatarii ventriculare laterale  
- calcularea semiautomata a volumelor la nivelul plamanilor  
- calcularea semiautomata a volumului vezicii urinare  
Modul de asistare a ecografiei in vederea imbunatatirii fluxului de lucru permitand crearea de protocoale standardizate  
Dispune de posibilitate de upgradare cu tehnologie de achizitie in volum ce ii permite utilizatorului sa obtina si sa vizualizeze cu claritate zona anatomica de interes, indiferent de planul de afisare al imaginii, oferind utilizatorului posibilitatea de a vizualiza planuri non-ortogonale prin plasarea unei linii, unei curbe, unei urme, sau a unei polilinie pe volum  
Dispune de posibilitate de upgradare cu tehnologie de achizitie in volum ce ofera un contrast de calitate superioara prin diferentierea excelenta a tesuturilor moi  
Dispune de posibilitate de upgradare cu tehnologie de vizualizare simultana si in timp real a doua planuri de scanare. Astfel permite utilizatorului sa directioneze planul ortogonal in vederea vizualizarii structurilor ce nu pot fi observate in planul perpendicular  
Dispune de posibilitate de upgradare cu tehnologie de achizitie a volumelor cordului fetal, inclusiv ale volumelor obtinute impreuna cu modul Doppler Color  
Achizitia cordului fetal se face in maxim 4 secunde cu obtinerea a peste 39 de subvolumuri ale unui singur ciclu cardiac fetal  
Echipamentul sa aiba posibilitate de upgradare ulterioara cu modul de obtinere a imaginilor tridimensionale ale cordului fetal in modul standard, fara artefacte de miscare, cu ajutorul unui program specializat (STIC = spatio temporal image correlation)  
Aceasta tehnica de achizitie permite capturarea datelor anatomice intr-un afisaj multiplanar atat a structurilor dorite cat si a structurilor patologice si fiziologice ale inimii aflate in miscare  
Echipamentul prezinta tehnologie ce permite masurarea structurilor dorite in timpul captarii unui ciclu cardiac fetal complet  
Modul STIC functioneaza impreuna cu urmatoarele moduri de operare:  
- STIC  
- STIC + power Doppler  
- STIC + Doppler color  
- STIC + power Doppler directional  
- STIC + modul non Doppler de vizualizare a fluxurilor  
Dispune de posibilitate de upgradare cu tehnologie automata ce ajuta la standardizarea orientarii imaginii cordului fetal prin furnizarea de examinari obtinute dintr-un singur volum de achizitie  
Aceasta tehnologie genereaza automat diferite sectiuni la nivelul inimii fetale pentru a face diagnosticul mai ușor si anume:  
-sectiune la nivelul tractului de ejectie drept  
-sectiune la nivelul tractului de ejectie stang

- acest mod de calcul poate fi utilizat atat in oncologie cat si in perinatologie  
- poate fi utilizat cu Power Doppler in vederea obtinerii de histograme de volum  
Acest mod de lucru permite calcularea urmatoarelor volume:  
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Modul de asistare a ecografiei in vederea imbunatatirii fluxului de lucru permitand crearea de protocoale standardizate  
Dispune de posibilitate de upgradare cu tehnologie de achizitie in volum ce ii permite utilizatorului sa obtina si sa vizualizeze cu claritate zona anatomica de interes, indiferent de planul de afisare al imaginii, oferind utilizatorului posibilitatea de a vizualiza planuri non-ortogonale prin plasarea unei linii, unei curbe, unei urme, sau a unei polilinie pe volum  
Dispune de posibilitate de upgradare cu tehnologie de achizitie in volum ce ofera un contrast de calitate superioara prin diferentierea excelenta a tesuturilor moi  
Dispune de posibilitate de upgradare cu tehnologie de vizualizare simultana si in timp real a doua planuri de scanare. Astfel permite utilizatorului sa directioneze planul ortogonal in vederea vizualizarii structurilor ce nu pot fi observate in planul perpendicular  
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Echipamentul prezinta tehnologie ce permite masurarea structurilor dorite in timpul captarii unui ciclu cardiac fetal complet  
Modul STIC functioneaza impreuna cu urmatoarele moduri de operare:  
- STIC  
- STIC + power Doppler  
- STIC + Doppler color  
- STIC + power Doppler directional  
- STIC + modul non Doppler de vizualizare a fluxurilor  
Dispune de posibilitate de upgradare cu tehnologie automata ce ajuta la standardizarea orientarii imaginii cordului fetal prin furnizarea de examinari obtinute dintr-un singur volum de achizitie  
Aceasta tehnologie genereaza automat diferite sectiuni la nivelul inimii fetale pentru a face diagnosticul mai ușor si anume:  
-sectiune la nivelul tractului de ejectie drept  
-sectiune la nivelul tractului de ejectie stang

<p>-sectiune la nivelul abdomenului pentru vizualizarea stomacului si aortei abdominale</p> <p>-sectiune la nivelul arcului aortic</p> <p>-sectiune la nivelul ductului arterial</p> <p>Dispune de posibilitate de upgradare cu soft ce detecteaza si calculeaza structurile cu ecogenitate scazuta. De asemenea, permite atat analiza formei si volumului structurii respective prin modificarea pozitiei sursei de lumina cat si masurarea diametrului structurilor manual/ semi-automat/ automat</p> <p>Dispune de posibilitate de upgradare cu instrument 3D ce detecteaza in mod automat si poate masura urmatoarele structuri hipoechoice prezente in volumul achizionat: ventriculi cerebrali, rinichi, stomac, vezica urinara etc.</p> <p>Dispune de posibilitate de upgradare cu tehnologie ce ofera informatii despre monitorizarea, documentarea si progresul fatului in al doilea stadiul de travaliu. Preconizeaza pozitia capului, directia si rotatia pentru momentul nasterii.</p> <p>Arhitectura de noua generatie prezinta tehnologie ce permite recunoastere automata a feței fetusului indiferent de miscarile continue ale acestuia</p> <p>Echipamentul permite standard masuratori semi-automata a datelor biometrice atat a diametrului biparietal, circumferinta abdominala, circumferinta craniana cat si a lungimii osului femural al fetusului</p> <p>Tehnologie de calcul semi-automat al translucentei nucale</p> <p>Tehnologie de calcul semi-automat al translucentei intracraniene</p> <p>Tehnologie de vizualizare a fluxurilor sangvine ce ofera un aspect natural si realist al structurilor vasculare atat in mod directionat cat si in culori monocrome pentru afisare angiografica</p> <p>Tehnologie ce permite afisarea vaselor sangvine dintr-o suprafata sau a unei vizualizari transparente, oferind astfel o perspectiva mai buna asupra anatomiei vasculare si a structurilor din jur</p> <p>Tehnologie de afisare si randare a volumelor pentru vizualizarea prin transparenta a structurilor interne hipo-ecogene, a fetusilor gemelari, imbunatatirea marginilor si afisare cat mai realistica a fetusului</p> <p>Tehnica ce ilumineaza structurile anatomice fetale prin minim 3 surse diferite de lumini avand intensitate variabila, cu posibilitate de concentrare asupra structurilor cele mai mici</p> <p>In vederea imbunatatirii calitatii imaginii de volum pe sondele endocavitare 4D si abdominale 4D, echipamentul dispune de o tehnica de procesare a imaginii prin analiza comparativa a tuturor voxelilor ce formeaza volumele efective, in relatie cu voxelii din imediata vecinatate</p> <p>Tehnologie de achizitie a unei imagini panoramice permitand medicului utilizator efectuarea de masuratori a structurilor anatomice ce nu pot fi vizualizata dintr-o achizitie clasica (unitara).</p> <p>Pentru un confort crescut al pacientei in timpul scanarii, in special in cazul examenarilor endocavitare post-menopauza, echipamentul dispune de tehnologie ce-i permite medicului modificarea din comezile tastaturii, a axei/planului de scanare pe sondele volumetrice. Astfel sunt efectuate cat mai putine miscari ale sondei si aduce beneficii in minim urmatoarele situatii:</p>	<p>-sectiune la nivelul abdomenului pentru vizualizarea stomacului si aortei abdominale</p> <p>-sectiune la nivelul arcului aortic</p> <p>-sectiune la nivelul ductului arterial</p> <p>Dispune de posibilitate de upgradare cu soft ce detecteaza si calculeaza structurile cu ecogenitate scazuta. De asemenea, permite atat analiza formei si volumului structurii respective prin modificarea pozitiei sursei de lumina cat si masurarea diametrului structurilor manual/ semi-automat/ automat</p> <p>Dispune de posibilitate de upgradare cu instrument 3D ce detecteaza in mod automat si poate masura urmatoarele structuri hipoechoice prezente in volumul achizionat: ventriculi cerebrali, rinichi, stomac, vezica urinara etc.</p> <p>Dispune de posibilitate de upgradare cu tehnologie ce ofera informatii despre monitorizarea, documentarea si progresul fatului in al doilea stadiul de travaliu. Preconizeaza pozitia capului, directia si rotatia pentru momentul nasterii.</p> <p>Arhitectura de noua generatie prezinta tehnologie ce permite recunoastere automata a feței fetusului indiferent de miscarile continue ale acestuia</p> <p>Echipamentul permite standard masuratori semi-automata a datelor biometrice atat a diametrului biparietal, circumferinta abdominala, circumferinta craniana cat si a lungimii osului femural al fetusului</p> <p>Tehnologie de calcul semi-automat al translucentei nucale</p> <p>Tehnologie de calcul semi-automat al translucentei intracraniene</p> <p>Tehnologie de vizualizare a fluxurilor sangvine ce ofera un aspect natural si realist al structurilor vasculare atat in mod directionat cat si in culori monocrome pentru afisare angiografica</p> <p>Tehnologie ce permite afisarea vaselor sangvine dintr-o suprafata sau a unei vizualizari transparente, oferind astfel o perspectiva mai buna asupra anatomiei vasculare si a structurilor din jur</p> <p>Tehnologie de afisare si randare a volumelor pentru vizualizarea prin transparenta a structurilor interne hipo-ecogene, a fetusilor gemelari, imbunatatirea marginilor si afisare cat mai realistica a fetusului</p> <p>Tehnica ce ilumineaza structurile anatomice fetale prin minim 3 surse diferite de lumini avand intensitate variabila, cu posibilitate de concentrare asupra structurilor cele mai mici</p> <p>In vederea imbunatatirii calitatii imaginii de volum pe sondele endocavitare 4D si abdominale 4D, echipamentul dispune de o tehnica de procesare a imaginii prin analiza comparativa a tuturor voxelilor ce formeaza volumele efective, in relatie cu voxelii din imediata vecinatate</p> <p>Tehnologie de achizitie a unei imagini panoramice permitand medicului utilizator efectuarea de masuratori a structurilor anatomice ce nu pot fi vizualizata dintr-o achizitie clasica (unitara).</p> <p>Pentru un confort crescut al pacientei in timpul scanarii, in special in cazul examenarilor endocavitare post-menopauza, echipamentul dispune de tehnologie ce-i permite medicului modificarea din comezile tastaturii, a axei/planului de scanare pe sondele volumetrice. Astfel sunt efectuate cat mai putine miscari ale sondei si aduce beneficii in minim urmatoarele situatii:</p>
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• In cazul pacientelor cu ovare dificil de vizualizat/examinat datorita amplasarii

• In cazul pacientelor cu disconfort transvaginal crescut

• In cazul pacientelor cu chisturi complexe sau ectopice

Prin activarea modulului 3D/4D, echipamentul detine tehnologie pentru afisarea volumelor achizitionate in format tomoecografic (mai multe slice-uri paralele)

Distanta minima intre doua slice-uri succesive: 0,5 mm

**CONECTIVITATE SI TRANSFER DE DATE**

Ecograful permite conectarea la rețea prin cablu cu conector de tipul RJ45

Prezinta posibilitate de upgradare cu interfata wireless

Conexiune HDMI

Detine MPPS (ofera posibilitatea de efectuare a procedurii pas cu pas – masurare precisa a distantei, ariei si volumului)

Conexiune pentru transferul datelor USB atat 2.0 cat si 3.0

**B) CONFIGURATIE DE LIVRARE:**

B.1) Consola ecografică îndeplinește toate cerințele de la punctul A)

B.2) Traductori:

1 bucată traductor micro-convex endocavitar pentru aplicații obstetrice și ginecologice cu următoarele cerințe:

- banda de frecvențe de lucru acoperă minim intervalul: 4 - 8.8 MHz
- câmp vizual de peste 175°
- tehnologie cu peste 190 de cristale
- amprentă de peste 21x17 mm
- poate dispune de kit de biopsie

1 bucată traductor convex pentru aplicații abdominale, obstetrice, ginecologice și aplicații cardiace fetale cu următoarele caracteristici:

- banda de frecvențe de lucru acoperă minim intervalul: 2 - 4.8 MHz
- câmp vizual de peste 110°
- tehnologie cu peste 190 de cristale
- poate dispune de kit de biopsie multiangular

1 bucată traductor convex volumetric cu tehnologie matricială pentru aplicații abdominale, obstetrice, ginecologice, pediatrie și cardiace fetale cu următoarele caracteristici:

- banda de frecvențe de lucru acoperă minim intervalul: 1 - 6.8 MHz
- câmp vizual de peste 88° în modul 2D
- câmp vizual de peste 88° x 85° în modul de scanare volumetric
- tehnologie cu peste 955 de cristale
- amprentă de peste 64 x 40 mm
- poate dispune de kit de biopsie

1 bucată traductor liniar pentru aplicații pediatrie, musculoscheletale, obstetrice cat si pentru aplicatii ale partilor moi si ale sistemului vascular ce prezinta urmatoarele caracteristici:

- banda de frecvente de lucru acopera minim intervalul: 3 - 7.8 MHz
- camp vizual de peste 40 mm
- tehnologie cu peste 190 de cristale
- amprenta: minim 53 x 14 mm
- poate dispune de kit de biopsie multiangular

**B.3) PERIFERICE SI ALTE ACCESORII:**

Printer termic alb/negru

• In cazul pacientelor cu ovare dificil de vizualizat/examinat datorita amplasarii

• In cazul pacientelor cu disconfort transvaginal crescut

• In cazul pacientelor cu chisturi complexe sau ectopice

Prin activarea modulului 3D/4D, echipamentul detine tehnologie pentru afisarea volumelor achizitionate in format tomoecografic (mai multe slice-uri paralele)

Distanta minima intre doua slice-uri succesive: 0,5 mm

**CONECTIVITATE SI TRANSFER DE DATE**

Ecograful permite conectarea la rețea prin cablu cu conector de tipul RJ45

Prezinta posibilitate de upgradare cu interfata wireless

Conexiune HDMI

Detine MPPS (ofera posibilitatea de efectuare a procedurii pas cu pas – masurare precisa a distantei, ariei si volumului)

Conexiune pentru transferul datelor USB atat 2.0 cat si 3.0

**B) CONFIGURATIE DE LIVRARE:**

B.1) Consola ecografică îndeplinește toate cerințele de la punctul A)

B.2) Traductori:

**1 bucată traductor micro-convex endocavitar pentru aplicații obstetrice și ginecologice cu următoarele cerințe IC5-9-D:**

- banda de frecvențe de lucru acoperă intervalul: 4 - 9 MHz
- câmp vizual de 179°
- tehnologie cu 190 de cristale
- amprentă de 21,2x17,2 mm
- poate dispune de kit de biopsie

**1 bucată traductor convex pentru aplicații abdominale, obstetrice, ginecologice și aplicații cardiace fetale cu următoarele caracteristici C1-6-D:**

- banda de frecvențe de lucru acoperă intervalul: 2 - 5 MHz
- câmp vizual de 113°
- tehnologie cu 192 de cristale
- poate dispune de kit de biopsie multiangular

**1 bucată traductor convex volumetric cu tehnologie matricială pentru aplicații abdominale, obstetrice, ginecologice, pediatrie și cardiace fetale cu următoarele caracteristici RM7C:**

- banda de frecvențe de lucru acoperă intervalul: 1 – 7 MHz
- câmp vizual de 90° în modul 2D
- câmp vizual de 90° x 85° în modul de scanare volumetric
- tehnologie cu 955 de cristale
- amprentă de 64,1 x 40,1 mm
- poate dispune de kit de biopsie

**1 bucată traductor liniar pentru aplicații pediatrie, musculoscheletale, obstetrice cat si pentru aplicatii ale partilor moi si ale sistemului vascular ce prezinta urmatoarele caracteristici 9L-D:**

- banda de frecvente de lucru acopera intervalul: 3 - 8 MHz
- camp vizual de 43 mm
- tehnologie cu 192 de cristale
- amprenta: 53 x 14,1 mm
- poate dispune de kit de biopsie multiangular

**B.3) PERIFERICE SI ALTE ACCESORII:**

Printer termic alb/negru

Dispune de posibilitate de upgradare cu printer termic color

<p>Dispune de posibilitate de upgradare cu printer termic color Dispune de posibilitate de upgradare cu pedala de control - 3 pedale C) CONFORMANTA DE SIGURANTA Echipamentul respecta urmatoarele standarde de siguranta: - ISO 9001 - CE certificat</p>	<p>Dispune de posibilitate de upgradare cu pedala de control - 3 pedale C) CONFORMANTA DE SIGURANTA Echipamentul respecta urmatoarele standarde de siguranta: - ISO 13485 - CE certificat</p>
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Benannt durch/Designated by  
Zentralstelle der Länder  
für Gesundheitsschutz  
bei Arzneimitteln und  
Medizinprodukten  
www.zlg.de  
ZLG-BS-244.10.08



Product Service

# EC Certificate

Full Quality Assurance System  
Directive 93/42/EEC on Medical Devices (MDD), Annex II excluding (4)  
(Devices in Class IIa, IIb or III)

No. G1 075707 0030 Rev. 01

**Manufacturer:** **GE Healthcare Austria GmbH & Co OG**  
Tiefenbach 15  
4871 Zipf  
AUSTRIA

**Facility(ies):** GE Healthcare Austria GmbH & Co OG  
Tiefenbach 15, 4871 Zipf, AUSTRIA

**Product Category(ies):** **Diagnostic Ultrasound Systems,  
related Probes and Standalone Software  
for Ultrasound-Image Processing**

The Certification Body of TÜV SÜD Product Service GmbH declares that the aforementioned manufacturer has implemented a quality assurance system for design, manufacture and final inspection of the respective devices / device categories in accordance with MDD Annex II. This quality assurance system conforms to the requirements of this Directive and is subject to periodical surveillance. For marketing of class III devices an additional Annex II (4) certificate is mandatory. See also notes overleaf.

**Report No.:** 713142159

**Valid from:** 2019-04-01

**Valid until:** 2024-03-31

**Date,** 2019-01-02

Stefan Preiß

TÜV SÜD  
 ZERTIFIKAT ◆ CERTIFICATE ◆ 認證書 ◆ CERTIFICADO ◆ CERTIFICAT









## Certificate of Completion

*This certifies that*

**Ion Negru**

*has successfully completed*

**Proficient\_UL Service Training (DL)**

Completed on 3/26/2021  
(date format: mm/dd/yyyy )

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## Certificate of Completion

*This certifies that*

**Ion Negru**

*has successfully completed*

**Proficient\_UL Exam (DL)**

Completed on 4/1/2021  
(date format: mm/dd/yyyy )

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# Certificate

No. Q5 075707 0058 Rev. 01

**Holder of Certificate:** **GE Healthcare Austria GmbH & Co OG**  
Tiefenbach 15  
4871 Zipf  
AUSTRIA

**Facility(ies):** GE Healthcare Austria GmbH & Co OG  
Tiefenbach 15, 4871 Zipf, AUSTRIA  
  
Design and Development, Production  
and Distribution of Diagnostic Ultrasound  
Systems, Probes and Standalone Software  
for Ultrasound-Image Processing

**Certification Mark:**



**Scope of Certificate:** **Design and Development, Production  
and Distribution of Diagnostic Ultrasound  
Systems, Probes and Standalone Software  
for Ultrasound-Image Processing**

**Applied Standard(s):** EN ISO 13485:2016  
Medical devices - Quality management systems -  
Requirements for regulatory purposes  
(ISO 13485:2016)  
DIN EN ISO 13485:2016

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a quality management system, which meets the requirements of the listed standard(s). All applicable requirements of the testing and certification regulation of TÜV SÜD Group have to be complied with. For details and certificate validity see: [www.tuvsud.com/ps-cert?q=cert:Q5 075707 0058 Rev. 01](http://www.tuvsud.com/ps-cert?q=cert:Q5 075707 0058 Rev. 01)

**Report No.:** 713202497

**Valid from:** 2021-05-19

**Valid until:** 2021-11-19

**Date,** 2021-05-19



Christoph Dicks  
Head of Certification/Notified Body

GE Healthcare

# Voluson™ E10 BT21

## Data Sheet

### Product description

The Voluson\* E10 BT21 is an advanced imaging platform that combines extraordinary image quality with our superb volume ultrasound technology.

### Highlights

- High Resolution 23" LCD LED or 22" OLED Monitor
- Radiance System Architecture
- Radiantflow
- SlowflowHD and Slowflow3D
- HDlive\* Technology
- Advanced VCI with OmniView
- Uterine Trace
- Advanced STIC & eSTIC
- Advanced Fetal Echo
- fetalHQ
- Scan Assistant
- Automation Technology with SonoCNS, SonoBiometry, SonoNT, SonoIT
- XDclear Probes
- Volume Matrix Technology
- High Frequency Transvaginal Imaging
- Electronic 4D Technology
- 3D Printing Capabilities



## General Specifications

Dimensions and weight	
Height (minimum)	1330 mm (52.4 in)
Height (maximum)	1670 mm (65.7 in)
Adjustable	with electrical motor
Width	580 mm (22.8 in)
Depth	940 mm (37.0 in)
Weight (no Peripherals)	147 kg (324.1 lbs.)

Power supply	
Voltage	100 – 240 VAC
Frequency	50/60 Hz (+/-1%)
Power	Max. 800 VA Including all options typical power consumption ~350VA without peripherals
Thermal Output	max. 2730 BTU/h

Console design	
4 Active Universal Pinless Imaging Probe Ports	
Integrated HDD	2 TB (optional 1TB SSD)
Integrated SSD	64 GB
Operating System: Windows** 10 IoT Enterprise 2019 LTSC	
Integrated DVD+R(W)/CD-R(W) drive	
On-board storage for Peripherals	
Wheels	Wheel diameter 150 mm
Integrated cable management	
Front and rear handles	
Probe port illumination	

## User Interface

Operator keyboard	
Floating Keyboard:	
• Rotation: adjustable +/- 38° from center	
• Height adjustable + 195 mm (7.9")	
Full-sized, backlit alphanumeric keyboard	
Ergonomic hard key layout	
Interactive backlighting	
Integrated recording keys for remote control of up to 6 peripherals or DICOM® devices, one dedicated DVD recording key	

Touch screen	
12.1" high resolution color LCD screen	
Multi touch interactive dynamic software menu	
Brightness adjustable	
xTouch capable, supporting Volume rotation, MagiCut, HD <i>live</i> light source manipulation and OmniView	
Capable to display 2D/3D/4D Ultrasound Images in real time	

Monitor	
23" high resolution LCD LED Display with DVI interface	
Optional 22" OLED Display	
Resolution Full HD 1920 x 1080 pixel	
Display brightness up to 300 cd/m <sup>2</sup> (OLED: 205 cd/m <sup>2</sup> )	
Tilt/Rotate Adjustable Monitor	
Tilt angle: min. +30°/-75°	
Horizontal rotate angle: +/- 90°	
Digital brightness and contrast adjustment. Five default settings available: Extra Dark, Dark-, Semi Dark-, Light-, Extra Light Room, each for higher and lower color temperature	

## System Overview

Exam types	
Abdominal	
Obstetrical and Fetal Echo	
Gynecological	
Small Parts and Breast	
Vascular	
Pediatrics	
Transrectal	
Cardiology	
Cephalic	
Musculoskeletal (MSK)	

Operating modes	
Brightness Mode (B-Mode) (2D)	
Bi-Plane Mode, including steering of orthogonal plane	
Motion Mode – M-Mode (conventional M-Mode)	
Anatomical M-Mode (AMM)	
Pulsed Wave Doppler (PW) with automatic HPRF	
Continuous Wave Doppler imaging (CW)	
Color Flow Doppler mode (CFM)	
Power Doppler Mode (PD)	
High Definition Power Doppler (HD-Flow*)	
SlowflowHD & Slowflow3D	
Tissue Doppler Mode (TD) and PW-Tissue Doppler Mode B-Flow* (BF)	
Compression & Shear Wave Elastography (not available in all countries)	
Contrast Imaging Mode†, including Quantification Capabilities	
Combination modes: M/CFM, M/HD-Flow, M/TD, PW/CFM, PW/HD-Flow, PW/PD, PW/TD	
Extended View (XTD View)	
Volume Mode (3D/4D):	
• 3D Static	
• 4D Real Time	
• VCI-A	
• VCI-OmniView	
• Spatio-Temporal Image Correlation (STIC) & eSTIC	
• 4D Biopsy	

Scanning methods	
Electronic Sector/Convex/Linear	
Mechanic/Electronic Volume Sweep	

User Management and Logging Functionality	
Multiple Users with individual log on credentials	
Different and adjustable access levels	
LDAP Interface	
Enhanced Audit Trail and Usage Log	

Privacy and Security Functionality	
Hard disc AES Encryption with 256-bit length	
Whitelisting	
Encrypted DICOM Communication Capability (TLS)	
Encryption and Data Anonymization Export Capability	
All ports, services and shared resources that are not required for the intended use are disabled	
Operating System Access disabled	
Deactivation of USB ports possible	



Transducer types	
Convex Array	
Microconvex Array	
Linear Array	
Active Matrix Phased Array (1.5D)	
Active Matrix Linear Array (1.5D)	
Volume probes 4D:	
• Convex Array	
• Microconvex Array	
• Linear Array	
• Active Matrix Convex Array (1.5, 2D)	
System standard features	
Innovative user interface with high resolution 12.1" LCD touch panel	
B-Mode	
M-Mode	
PW-Doppler	
CFM (Color Flow Doppler Mode)	
Automatic Optimization (B-Mode, PW Doppler)	
Auto TGC	
AutoScale (PW Doppler and Color Doppler PRF)	
Coded Harmonic Imaging with Pulse Inversion Technology, operating on multiple frequencies, with user selectable on/off button	
Coded Excitation (CE)	
HD-Flow & Power Doppler Mode	
Radiant <i>flow</i> & Slow <i>flow</i> HD & Slow <i>flow</i> 3D	
B-Flow	
Tissue Doppler and PW-Tissue Doppler	
XTD	
SRI II (Speckle Reduction Imaging)	
HD <i>live</i> Silhouette, HD <i>live</i> Studio	
HD <i>live</i> Flow, HD <i>live</i> Flow Silhouette	
CrossXBeamCRI* (Compound Resolution Imaging)	
SonoBiometry (HC, BPD, AC, FL, HL, SonoNT & SonoIT)	
SonoCNS	
SonoRender <i>live</i>	
Scan Assistant:	
• Includes measurements, annotations and fetal anatomy and gynecology worksheet entries	
• Performs predefined mode changes, preset selection and screen layout changes	
• Supports display of user selected reference images	
• Standardize image sequence upon DICOM transfer	
DICOM 3.0 Connectivity	
Static 3D Mode:	
• B Mode only	• B + CRI
• B + Power Doppler Mode	• B + CRI + CFM
• B + CFM Doppler Mode	• B + CRI + PD
• B + HD-Flow Mode	• B + CRI + HD-Flow
• B + Slow <i>flow</i> HD Mode	• B + CRI + Slow <i>flow</i> HD Mode
• B + B-Flow	
Focus and Frequency Composite (FFC)	
HD Zoom & Pan Zoom	
Steering	
Virtual Convex (Trapezoid Image, also with CrossXBeam (CRI)	
Wide Sector	
Beta-View	
Histogram Analysis with up to 3 user adjustable ROIs with comparative analysis on complex curves	

Patient information database	
Image Archive on hard drive	
3D/4D data compression (lossy/lossless)	
Inversion Mode	
Real-time automatic Doppler calculations	
Measurement, Calculations and Worksheets/Report for:	
• OB	• Small Parts
• GYN	• Transrectal
• Vascular	• Pediatrics
• Cardio	• Cephalic
• Abdominal	• Musculoskeletal (MSK)
Multigestational Calculations	
Integrated uplink for Cloud-based data storage (Tricefy™) (not available in all countries)	
GYN IOTA LR2, Simple Rules and ADNEX Model (not available in all countries)	
GYN IETA Protocol & Report (not available in all countries)	
GYN IDEA Protocol & Scan Assistant Guideline	

System options	
Advanced 4D	
VOCAL II	
Advanced VCI (Volume Contrast Imaging), including VCI-A, OmniView and Uterine Trace	
SonoVCAD <i>labor</i>	
Compression Elastography	
Shear Wave Elastography (not available in all countries)	
Advanced STIC:	
• Basic STIC	• STIC-Flow
• STIC M-Mode	• SonoVCAD <i>heart</i>
SonoAVC, including SonoAVC <i>follicle</i> , <i>antral</i> and <i>general</i>	
E4D advanced features (for G2 & G2 activation only)	
• 2D Modes, Bi-Plane, Bi-Plane CRI, Bi-Plane Steering	
• Real Time 4D Mode: B Mode and B + CFM/PD/HD-Flow Mode	
• VCI-A and VCI-A + CFM/PD/HD-Flow Mode	
• eSTIC	
V-SRI	
Steerable CW Mode	
Anatomical M-Mode (AMM) with up to 2 cursors	
Coded Contrast Imaging + 3D HyCoSy†	
Integrated Software DVR	
• Digital recording	
• One drive for data export and recording	
• DVD Formats: DVD+R, -R, +RW, -RW for recording, DVD and CD support for data export	
• USB support: FAT32 compatibility	
Advanced Security Features	
Premium Security Features (meeting USA DoD requirements; not available in all countries)	
<i>fetal</i> HQ (including speckle tracking capabilities)	
<i>fetal</i> HQ2: adding Quiver & Auto-Flip to <i>fetal</i> HQ (not available in all countries)	
Voluson Remote Update (not available in all countries)	



## Peripheral options

Integrated printers: B&W, Color Thermal Printer

External Color desktop printer with network printing capabilities & connection kits for printing reports and images on connected printers (windows compatible)

ECG Digital Module

Foot Switch, with programmable functionality

Barcode Scanner

Magnetic Card reader (not available in all countries)

UPS – Uninterruptible Power Supply to prevent data/image loss in case of power failure assuring autonomy up to 15 minutes in scanning (may vary depending on battery age)

Power Filter

External Patient Monitor Set

Isolation Transformer

WLAN Adapter

USB Microphone

## Display modes

Simultaneous capability in combination with SRI and/or CRI:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• B+PW</li> <li>• B+CFM, B+PD, B+TD</li> <li>• B+HD-Flow</li> <li>• B+M, B+AMM</li> <li>• B+3D, B+4D</li> <li>• B+CRI</li> <li>• B+SRI</li> <li>• B+CRI+SRI</li> <li>• Contrast<sup>†</sup>+SRI</li> <li>• B+CRI/3D+CRI</li> <li>• B+SRI/3D+SRI</li> <li>• B+CRI+SRI/3D+CRI+SRI</li> <li>• B+CRI/4D+CRI</li> <li>• B+SRI/4D+SRI</li> <li>• B+CRI/STIC+CRI</li> <li>• B+SRI/STIC+SRI</li> </ul> | <ul style="list-style-type: none"> <li>• B+CRI+SRI/STIC+CRI+SRI</li> <li>• B/B+CRI</li> <li>• B/B+SRI</li> <li>• B/B+SRI+CRI</li> <li>• B/CFM+CRI</li> <li>• B/CFM+SRI</li> <li>• B/CFM+CRI+SRI</li> <li>• B/PD+CRI</li> <li>• B/PD+SRI</li> <li>• B/PD+CRI+SRI</li> <li>• B/HD-Flow +CRI</li> <li>• B/HD-Flow +SRI</li> <li>• B/HD-Flow +CRI+SRI</li> <li>• B/SlowflowHD +CRI</li> <li>• B/SlowflowHD +SRI</li> <li>• B/SlowflowHD +CRI+SRI</li> </ul> |
|---|---|

Real-time Triplex Mode:  
(available on all probes)

- B/CFM/PW

Selectable alternating modes:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• B+PW or CW</li> <li>• B/CFM+PW or CW</li> <li>• B/PD+PW or CW</li> </ul> | <ul style="list-style-type: none"> <li>• B/TD+PW or CW</li> <li>• B/HD-Flow+PW or CW</li> </ul> |
|---|---|

Multi-image (split, quad):

- Live and/or frozen
- Live Bi-Plane
- Split: B+B, B/CFM+B/CFM or B/PD+B/PD or B/TD+B/TD or B/HD-Flow + B/HD-Flow or B/SlowflowHD + B/SlowflowHD or BF+BF, Contrast<sup>†</sup>+Contrast<sup>†</sup>
- Split simultan: B+B/CFM or B+B/PD or B+B/HD-Flow or B+B/SlowflowHD
- Split: B+PW or M or CW
- Split: Frame Review/XTD-View
- Quad: B+B+B+B or BF or Contrast<sup>†</sup>, B/CFM+B/CFM+B/CFM+B/CFM or B/PD or B/TD or B/HD-Flow or B/SlowflowHD
- Independent Cine playback
- Quad: A+B+C+3D or 4D
- TUI: 1x1, 1x2, 2x2, 3x2, 3x3, 3x4, 4x4
- Segmentation: quad (A/B/C/Segm. Object), single (Segm. Object)
- Split: TUI Overview+1 slice

- Zoom Read/Write (with or without overview image)

Image Size: Standard & XL Format

Colorized Image: available in B/M/PW/3D

Time line display:

- Independent Dual B/PW Display
- Display Formats: Top/Bottom selectable format (Size 1/2:1/2; 1/3:2/3; 2/3:1/3)

## Display annotation

Patient name: First/Middle/Last Name, max. 62 characters

ID: max 32 characters

Secondary patient ID (Citizen Service Number)

Accession #: max 16 characters

Hospital Name: max 30 Characters

Sonographer

Gestational age (OB) or LMP (GYN)

Birth date

Date:

- MM/DD/YYYY
- DD/MM/YYYY
- YYYY/MM/DD

Time display selectable: 12/24 hours

Probe name

Application name

Gray Scale bar

Depth Scale

Focal Zone Marker

Frame Rate

Zoom Start/Depth

B-Mode:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• User Preset</li> <li>• Receiver Frequency</li> <li>• Gain</li> <li>• Dynamic Control</li> <li>• Gray Map</li> </ul> | <ul style="list-style-type: none"> <li>• Edge Enhance</li> <li>• Persistence</li> <li>• SRI, CRI</li> <li>• Probe Orientation</li> </ul> |
|--|--|

M-Mode/AMM –Mode:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Gain</li> <li>• Dynamic control</li> <li>• Edge Enhance</li> </ul> | <ul style="list-style-type: none"> <li>• Reject</li> <li>• M-Cursor, AMM-Cursor</li> <li>• Time Scale</li> </ul> |
|---|--|

PW Doppler Mode:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Gain</li> <li>• Angle</li> <li>• Sample Volume Depth and Width</li> <li>• Wall Motion Filter</li> <li>• Doppler Frequency</li> </ul> | <ul style="list-style-type: none"> <li>• Velocity or Frequency Scale</li> <li>• Spectrum Inversion</li> <li>• Time Scale</li> <li>• PRF</li> <li>• HPRF</li> </ul> |
|---|--|

Color Flow Imaging modes

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Color Gain</li> <li>• Color Balance</li> <li>• Color Balance Marker</li> <li>• Quality</li> <li>• Wall Motion Filter</li> <li>• PRF</li> </ul> | <ul style="list-style-type: none"> <li>• Color Map</li> <li>• Color Scale: kHz, cm/s, m/s</li> <li>• Power and Symmetrical Velocity Imaging</li> <li>• Color Velocity Range</li> <li>• Spectrum Inversion</li> <li>• Orientation Markers</li> </ul> |
|---|---|

3D/4D Mode:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• 3D/4D Sub Program</li> <li>• Threshold</li> <li>• Quality</li> <li>• Volume Box Angle</li> <li>• Mix</li> <li>• Acquisition Mode</li> <li>• Compression</li> <li>• VCI: slice thickness</li> </ul> | <ul style="list-style-type: none"> <li>• TUI: slice distance</li> <li>• TUI: slice position in overview image</li> <li>• STIC acquisition time</li> <li>• Calculated heart rate for STIC and eSTIC</li> </ul> |
|---|---|

Compression Elastography

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Tx Frequency</li> <li>• Transparency</li> <li>• Velocity Range</li> </ul> | <ul style="list-style-type: none"> <li>• Elasto Map</li> <li>• Persistence</li> <li>• Line Density</li> </ul> |
|--|---|

## TGC Curve

Cine Frame Number

Recorder Status

Body Pattern: 124 types organized in 10 anatomical groups

Measurement results

Displayed Acoustic Output:

- TIS: Thermal Index Soft Tissue
- TIC: Thermal Index Cranial (Bone)
- TIB: Thermal Index Bone
- MI: Mechanical Index

Predefined Biopsy Guide Line

ECG Line

Trackball function (Trackball and Trackball buttons)

Zoom overview image (zoom box position)

## System Parameters

### System setup

User Programmable Preset Capability, User program etc.

Display Languages: English, French, German, Spanish, Portuguese, Italian, Danish, Dutch, Finnish, Norwegian, Swedish, Russian, Japanese, Simplified Chinese

Keyboard Languages (Keycap Kits): English, French, German, Spanish, Italian, Danish, Finnish, Norwegian, Swedish, Russian, Swiss, South Slavic Latin

elFu (electronic Instructions for Use) Languages: Bulgarian, Croatian, Czech, Chinese Simplified, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Indonesian, Italian, Japanese, Kazakh, Korean, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbian, Slovakian, Slovenian, Spanish, Swedish, Turkish, Ukrainian, Vietnamese

Free programmable Scan assistant lists including Add, Delete, Edit and Reorder of checklist items

Up to 800 Programmable Annotations organized in 10 anatomical groups, including a library function and auto-complete

6 programmable Px buttons for documentation preferences like Save, DICOM Send, Print, Check, Cine length, jpeg, etc.

Several user configurable functions:

- Clinic Name
- Display (TGC curve, Screen Lock, Screensaver, Auto Scan Stop, Beeper, 3D/4D Screen Controls)
- Trackball speed
- Zoom Overview window
- Dim function
- Patient Info display
- Title bar settings
- Start Exam and End Exam configuration

### Measure setup

M&A Setup including Add, Delete, Edit and Reorder of measure items

Application Setup including several parameters of Measurement, Doppler Trace and Calculation presets

Global Setup including several parameters of Measurement, Cursor and Result window presets

Post assign measurements

Auto Sequence measurements

### Biopsy setup

User programmable needle guidelines

### Pre-processing

Write Zoom up to 8x Magnification

B/M-Mode:

- Gain
- TGC
- Dynamic Range
- Acoustic Output
- Transmission Focus Position
- Transmission Focus Number
- Transmission Frequency
- Persistence Control
- Line Density Control
- Reject
- Sweep Speed
- M-Cursor position

PW-Mode:

- Gain
- Dynamic Range
- Acoustic Output
- Transmission Frequency
- PRF
- Wall Motion Filter
- Sample Volume Gate
- Length, Depth, Pos
- Velocity Scale
- Sweep Speed

Color Flow Imaging Modes

- Gain
- Acoustic Output
- PRF
- Wall Motion Filter
- Line density
- Ensemble
- Dynamic
- Smooth (Rise and Fall)
- Frequency
- Balance
- Line Filter
- Quality
- Artifact Suppression

### Post-processing

Read Zoom: 0.8x – 3.4x Zoom (with HD-Zoom functionality up to 22x Zoom)

B-Mode:

- 2D Gain
- Dynamic Contrast
- Gray Map
- Edge Enhance
- Colorized B
- SRI II (Speckle Reduction Imaging)

M-Mode:

- Gray Map
- Colorized M
- Edge Enhance
- Display Format
- Sweep Speed

PW Mode:

- Gray Map
- Baseline Shift
- Angle Correction
- Colorized D
- Scale (kHz, m/s, cm/s)
- Trace
- Invert
- Sweep Speed

Color Flow Imaging Modes

- Display Threshold
- Display Mode (V,V-T,T,P,P-T) (CFM only)
- Color Map
- Scale (CFM and HD-Flow)
- Baseline

B-Flow

- Gray map
- Colorized B-Flow
- Advanced SRI (Speckle Reduction Imaging)
- Dynamic Contrast

### Image processing and presentation

Digital Beamformer

743.265.431 system processing channel technology

Minimum Depth of Field: 0 – 1 cm (Zoom, probe dependent)

Maximum Depth of Field: 0 – 50 cm (probe dependent)

Depth Steps: up to 29 (probe dependent)

Transmission Focus: 1-5 Focus Points selectable (probe and application dependent)

Focal Zone position, up to 10 positions selectable

Continuous Dynamic Receive Focus/ Continuous Dynamic Receive Aperture for all probes

256 gray levels

16.8 million Colors 24 bit

Up to 280 dB Dynamic Range

Image reverse: Right/Left

Rotation: 0°, 180°

## Cine features

- Prospective or Retrospective Cine Mode
- Dual/Quad image CINE Display
- CINE Gauge and CINE image number display
- CINE Review Loop
- Selectable CINE Sequence for CINE Review (by Start Frame and End Frame)
- Side Change in dual CINE Mode
- Measurements /Calculations & Annotations on CINE

### Length:

- 2D: 512MB: up to 10 min (depending on B-image size and FPS); typical: about 3 min/4000 images (with curved array: 15cm depth, angle 81°, 22 FPS)
- M-Mode: 32MB: up to 1 min motion time (depending on sweep and depth)
- PW/CW-Mode: 32MB: up to 1 min motion time (depending on sweep speed)

### Cine operation:

- Manual: image by image
- Auto run: speed: 25 to 200% of real-time rate, play repeat mode: forward-forward, forward-backward-forward

## Image/volume storage (archive)

Standard and fully anonymized archive available

### Images stored as:

- Raw Data file (proprietary format)
- DICOM file (Single-or Multi-Frame)

### Volume file stored as:

- Raw Data file (proprietary format)
- DICOM file

Size: typically: 0.8 – 5MB (depending on probe and adjusted volume size)

### Compression:

- 2D: JPEG, lossless, high, mid low
- 3D/4D: Lossy and lossless compression available. Typical compression rates are 50% with lossless compression, 15% with lossy compression but maximum quality and 5% with lossy compression and reduced quality (approximate values).

Review of current exam and archived data sets (Single Images and Cine Clips). View format: Raw data, DICOM data. Display Formats: 1x1, 2x2, 3x3

Reload of current/ archived data sets: 2D Raw Data (incl. Color Doppler, Spectral Doppler and M-Mode). 3D Raw Data (single Volume incl. Calc. Cines). 4D Raw Data (Volume Cine).

### Export as:

- Bitmap files: BMP, TIFF, JPEG;
- Raw files: RAW (2D), VOL (Volume data), 4DV
- (RAW, VOL incl. Patient data – password protected)
- Video File Format: AVI, MP4
- DICOM Files: DCM, DICOM Files with DICOMDIR
- 3D Raw Data: export Cartesian format possible
- Surface formats: STL, OBJ, PLY, 3MF, XYZ (with projected and full 3D export capabilities)

AVI Codec: MS Video 1, FullFrames

Export to: DVD+R(W), CD-R(W), Network, USB devices, email, Printer, DICOM<sup>®</sup>, Tricefy<sup>™</sup>

Export Anonymous function: available for following image types: AVI, BMP, TIFF, JPEG, MP4

Backup function to: DVD+R(W)/CD-R(W), Network, USB devices

Repro function: Settings recall (e.g. Geometry, Gain, Color map, etc.) from a stored or reloaded picture

Exam history: Direct access to images from previous exams; direct access to Measure Reports images from previous exams; Image compare window on screen to compare images from previous exams with current exam image

Hard Drive Data Storage space: approx. 900 GB

## Connectivity

Ethernet network connection

6 USB 3.0 ports for USB devices

### DICOM support:

- Verify
- Print
- Store
- Modality Worklist
- Structured Reporting
- Storage Commitment
- MPPS (Modality performed procedure step)
- Media Exchange
- Off network / mobile storage queue
- Query/Retrieve
- TLS

### Tricefy<sup>™</sup> features:

- Store
- Patient Share
- .pdf Report storage
- Query Retrieve

## Scanning Parameters

B-Mode		
B-Mode for all probes		
B Acoustic Power	1-100	
Scan Angle	Probe dependent	
Gain range	+15 (100%) to -25 dB (0%)	
Gray scale values	8 bit	
SRI	5 steps (1-5)	
CRI	8 steps (1-8)	
CRI filter	4 steps: off, low, mid, high	
CE	On/Off (Probe dependent)	
FFC	On/Off (Probe dependent)	
Shadow Reduction	On/Off (Probe dependent)	
Persistence filter	8 steps (pre)	
Line filter	3 steps (pre) off, low (12.5/75/12.5%), high (25/50/25%)	
Line Density	3 steps (pre) low, norm, high	
Reject	51 steps (pre) from 0 to 255	
Enhance	6 steps 0, 1, 2, 3, 4, 5	
Gray maps	21 (18 basic maps and 3 User-defined maps)	
Tint maps	10	
Dynamic	12 different dynamic curves C1 – C12	
Display Modes	B, XTD	
Max. B-Mode Frame Rate	> 3000 frames/sec	
Frequency Range	1 to 18 MHz depending on the probe, adjustable in 3 fundamental steps (penetration, normal, resolution) and up to 5 Harmonic steps (HI Pen, low, mid, high, HDRes)	
Screen Formats:		
<ul style="list-style-type: none"> <li>2D Imaging: Single (B), Dual (B+B), Quad (B+B+B+B)</li> <li>XTD View: Single (XTD), Dual (B+XTD)</li> </ul>		
Coded Excitation (CE):	<ul style="list-style-type: none"> <li>ML6-15-D</li> <li>RM7C</li> <li>eM6C G2</li> <li>11L-D</li> </ul>	<ul style="list-style-type: none"> <li>RAB6-D</li> <li>C2-9-D</li> </ul>
Coded Harmonic Imaging available on all probes		
Focus Frequency Composite (FFC):	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>RIC6-12-D</li> <li>9L-D</li> <li>RAB6-D</li> </ul>	<ul style="list-style-type: none"> <li>C1-6-D</li> <li>RM7C</li> <li>eM6C G2</li> </ul>
Compound Resolution Imaging (CrossXBeam CRI) available on all (curved and linear) probes, except: M5Sc-D and S4-10-D		
Speckle Reduction Imaging (SRI II) available on all probes		
Virtual Convex: * also with CrossXBeam CRI	<ul style="list-style-type: none"> <li>RSP6-16-D*</li> <li>9L-D*</li> <li>S4-10-D</li> </ul>	<ul style="list-style-type: none"> <li>11L-D*</li> <li>M5Sc-D</li> <li>ML6-15-D*</li> </ul>
Wide Sector:	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>RAB6-D</li> <li>IC5-9-D</li> </ul>	<ul style="list-style-type: none"> <li>C1-6-D</li> <li>eM6C G2</li> <li>C2-9-D</li> </ul>
HDRes:	<ul style="list-style-type: none"> <li>eM6C G2</li> <li>RAB6-D</li> <li>C2-9-D</li> </ul>	<ul style="list-style-type: none"> <li>IC5-9-D</li> <li>RIC5-9-D</li> <li>C1-6-D</li> </ul>
HI Pen:	<ul style="list-style-type: none"> <li>RM7C</li> <li>RAB6-D</li> </ul>	<ul style="list-style-type: none"> <li>eM6C G2</li> <li>RIC5-9-D</li> <li>C2-9-D</li> <li>C1-6-D</li> <li>IC5-9-D</li> </ul>

Shadow Reduction:	<ul style="list-style-type: none"> <li>RAB6-D</li> <li>RM7C</li> <li>eM6C G2</li> </ul>	<ul style="list-style-type: none"> <li>C1-6-D</li> <li>C2-9-D</li> <li>ML6-15</li> </ul>	<ul style="list-style-type: none"> <li>RIC6-12-D</li> <li>RIC5-9-D</li> <li>IC5-9-D</li> </ul>
Confocal Imaging (Continuous focalization in transmit without physical focus)	<ul style="list-style-type: none"> <li>C2-9-D</li> <li>M5Sc-D</li> <li>eM6C G2</li> </ul>		

M-Mode	
M-Mode for all probes	
Working Modes	M (conventional M- Mode) AMM (Anatomical M-Mode)
Power control range	1-100
Gain range	+15 (100%) to -25 dB (0%)
M-Mode sweep speeds:	
<ul style="list-style-type: none"> <li>900/450/300/225/150/100 pixels/sec;</li> <li>26.44/13.22/8.81/6.61/4.40/2.94 cm/s in relation to system monitor</li> </ul>	
Review (memory times)	>60 s (32MB)
Signal processing M-Mode:	<ul style="list-style-type: none"> <li>Dynamic range: 1 to 12</li> <li>Reject: 0 to 255</li> <li>Enhance: 0 to 5</li> </ul>
Display Modes:	<ul style="list-style-type: none"> <li>Gray maps: 18</li> <li>Tint maps: 10</li> </ul>
<ul style="list-style-type: none"> <li>M: 2D+M, 2D+M/CFM, 2D+M/HD-Flow, 2D+M/SlowflowHD, 2D+M/PD, 2D+M/TD</li> <li>AMM: 2D+AMM, 2D/CFM+AMM/CFM, 2D/HD-Flow +AMM/HD-Flow, 2D/SlowflowHD +AMM/SlowflowHD, 2D/TD+AMM/TD</li> </ul>	
Screen Formats: (window arrangement)	
<ul style="list-style-type: none"> <li>2D+M and 2D+AMM: up/down (horizontal): three different sub formats 30/70, 50/50, 70/30% left/right (vertical): 50/50%</li> <li>2D+AMM+AMM: left/right-up/down: 50/25/25%</li> </ul>	

M-Color Flow Mode		
Probes:	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>RM7C</li> <li>S4-10-D</li> <li>C1-6-D</li> <li>M5Sc-D</li> </ul>	<ul style="list-style-type: none"> <li>RIC6-12-D</li> <li>eM6C G2</li> <li>C2-9-D</li> </ul>
Acoustic MCFM Power	1-100	
MCFM Color Maps	8 maps	
CFM Gain	+/-15 dB range, 0.1 dB steps	
CFM Velocity Scale Range	PRF: 150Hz to 20.5kHz	
Wall Motion Filter	8 – 3000 Hz	
Ensemble (color shots per line)	8-16, step size 1	
Gentle color filter		
Smooth filter:	Rise: 12 steps Fall: 12 steps	
CFM Spectrum Inversion		
CFM Baseline Shift	17 steps	
Pre-settable and independently adjustable B-, M and MCFM Gain		
CFM Threshold	1 – 255 steps	
Balance	25 – 225, step size 5	
Artifact suppression	On/Off	
Color Display Mode:	<ul style="list-style-type: none"> <li>T (Turbulence)</li> <li>P-T (Power + Turbulence)</li> </ul>	
<ul style="list-style-type: none"> <li>V (Velocity)</li> <li>V-T (Velocity + Turbulence)</li> <li>V-P (Velocity + Power)</li> </ul>		
Real -time Triplex Mode	B + M + MCFM in any depth	

## Spectral Doppler Mode (PW, CW)

Spectral Doppler Mode for all probes

Operating Modes	PW (Pulsed Wave Doppler, Single Gate), Steerable CW (Continuous Wave Doppler)
Transmit Frequencies	PW-Doppler: 1.75-18 MHz CW-Doppler: 1.75-16 MHz
Pulse Repetition Frequency (PRF)	PW-Doppler: 0.9-22 kHz CW-Doppler: 1.3-40.0 kHz
Sample Volume (Doppler Gate)	Length: 0.7,1,2,3,4,5,6, 7,8,9,10,15 mm Position: 5 mm to B-scan end, Angle correction: -85°...0°...+85°
Power control range	1-100
Gain range	+15 to -25 dB (PW) +15 to -15 dB (CW)
WMF (wall motion filter)	PW: 30...500 Hz, CW: 30...1000 Hz
Baseline shift	± PRF/2, ± 8 steps
Spectrum Analyzer	FFT (Fast Fourier Transformation), max. 256 channels, 256 amplitude levels
PW sweep speeds	Simplex (26.44/13.22/8.81/6.61/4.40/2.94 cm/s), Duplex/ Triplex (26.44/13.22/8.81/6.61/4.40/2.94 cm/s)
Review (memory times)	>60 s(32MB)

Measurable flow velocities:

- PW: 1cm/s – 8m/s ( $\alpha=0^\circ$ , 2.0MHz, max. Baseline shift) 1cm/s – 16m/s ( $\alpha=60^\circ$ , 2.0MHz, max. Baseline shift)
- CW: 1cm/s – 11.6m/s ( $\alpha=0^\circ$ , 2.0MHz, max. Baseline shift) 1cm/s-23.20m/s ( $\alpha=60^\circ$ , 2.0MHz, max. Baseline shift)

Signal processing: Dynamic range: 15 steps (10 to 40), Gray maps: 18 basic curves and 3 User-defined (pre, post) Tint maps: 11

Scale display	Vert.: kHz, cm/s, m/s (selectable), Hor.: 1s marker (big), ½ s marker (small)
Screen Formats	2D/D: up/down (horizontal): three different sub formats 30/70, 50/50, 70/30% left/right (vertical): 50/50%
Display Formats	2D/D (duplex update, simultaneous); 2D+CFM/D, 2D+HD-Flow/D, 2D+PD/D, 2D+TD/D (triplex update, CW or PW). 2D+SlowflowHD/D (duplex update). 2D+CFM/PW, 2D+PD/PW, 2D+HD-Flow/PW, 2D+TD/PW, (triplex simultaneous, PW only)
Audio Modes	Stereo (both directions separately in both channels)
Audio Volume	Adjustable, control digipots
CW Doppler, steerable	<ul style="list-style-type: none"> <li>• S4-10-D</li> <li>• M5Sc</li> <li>• C2-9-D</li> <li>• C1-6-D</li> </ul>
CW Doppler, non-steerable: RAB6-D	

## Color Doppler Mode

Color Doppler Mode for all Probes

Screen Formats	2D+CFM (Single, Dual, Quad)
Display Modes:	<ul style="list-style-type: none"> <li>• Simultaneous dual mode: 2D/2D+CFM</li> <li>• Triplex mode: 2D+CFM/PW, 2D/M+MCFM</li> <li>• Volume Mode: 3D+CFM</li> </ul>
Color coding:	<ul style="list-style-type: none"> <li>• Steps: 65536 color steps</li> <li>• Display modes: V-T (velocity + turbulence), V (velocity), V-P (velocity + power), T (turbulence), P-T (power + turbulence)</li> </ul>
Depth range	Axial: 0 to B scan range

Baseline shift	Lateral: 0 to B scan range 17 steps (independent from spectral Doppler)
Inversion of color direction	Yes
Wall Motion Filter	7 steps (low1, low2, mid1, mid2, high1, high2, max)
Smoothing Filter	12 steps rising time, 12 steps falling time
Gain Control	+15 dB to -15 dB, 0.2 dB steps
Line Density (color line density)	10 steps
Ensemble (color shots per line)	CFM: 7 to 31; MCFM: 8 to 16
Flow Resolution	4 steps (low, mid1, mid2, high)
Pulse repetition frequency	CFM: 150 Hz to 20.5 kHz MCFM: 150 Hz to 20.5 kHz
Color Map	Up to 8 different color codes for each probe
Frequency range	1 to 18 MHz depending on the probe, adjustable in 3 steps (low, mid, high)
Balance	From 25 to 225
Max. meas. velocity	4.23 m/sec
Min. meas. velocity	0.3 cm/sec
Scale	kHz, cm/s, m/s
Automatic moving tissue suppression	Yes
Max. Color Doppler Frame Rate	> 450 frames/sec

## Power Doppler Mode (PD)

Power Doppler Mode for all Probes

Screen Formats	2D+PD (Single, Dual, Quad)
Display Modes:	<ul style="list-style-type: none"> <li>• Simultaneous dual mode: 2D/2D+PD</li> <li>• Triplex mode: 2D+PD/PW</li> <li>• Volume Mode: 3D+PD</li> </ul>
PD coding	256 color steps
PD window size	Lateral: maximum to minimum B mode scan angle Axial: B-scan range
Display mode	P (power)
Wall motion Filter	7 steps (low1, low2, mid1, mid2, high1, high2, max)
Smoothing Filter	Rising edge: 12 steps Falling edge: 12 steps
Gain Control	+15 dB to -15 dB, 0.2 dB steps
PD Ensemble	7 to 31
PD Line Density	10 steps
Pulse repetition frequency	150 Hz to 20.5 kHz
PD Map	8 different color codes for each probe
Frequency range	1 to 18 MHz depending on the probe, adjustable in 3 steps (low, mid, high)
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225 in 41 steps
Artifact suppression	Yes



HD-Flow	
HD-Flow Mode for all Probes	
Screen Formats	Single, Dual, Quad, 2D+HDF
Display Modes:	
<ul style="list-style-type: none"> <li>• Simultaneous dual mode: 2D/2D+HDF</li> <li>• Triplex mode: 2D+HDF/PW; 2D/M+MHDF</li> <li>• Volume mode: 3D+HDF</li> </ul>	
HD-Flow Coding Steps	256 color steps
HD-Flow window size lateral	Maximal to minimal B mode scan angle; axial: B-scan range
Wall Motion Filter	8 steps (low1, low2, mid1, mid2, high1, high2, max1, max2)
Smoothing Filter	12 steps rising edge 12 steps falling edge
Gain Control	+15 dB to -15 dB, 0.2 dB steps
HD-Flow Ensemble	7 to 31
HD-Flow Line Density	10 steps
Pulse repetition frequency	150 Hz to 20.5 kHz
HD-Flow Map	8 different color codes for each probe
Frequency Range	1 to 18 MHz depending on the probe adjustable in three steps (low, mid, high)
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225
Line Filter	8 steps (off, 1 to 7)
Artifact suppression	Yes

Radiantflow		
<ul style="list-style-type: none"> <li>• RIC5-9-D</li> <li>• IC5-9-D</li> <li>• RIC6-12-D</li> <li>• ML6-15-D</li> </ul>	<ul style="list-style-type: none"> <li>• 9L-D</li> <li>• RM7C</li> <li>• RAB6-D</li> <li>• eM6C G2</li> </ul>	<ul style="list-style-type: none"> <li>• C2-9-D</li> <li>• C1-6-D</li> <li>• M5Sc-D</li> </ul>
Steps	low/mid/high	

SlowflowHD	
Probes:	<ul style="list-style-type: none"> <li>• ML6-15-D</li> <li>• RM7C</li> <li>• C1-6-D</li> <li>• eM6C G2</li> <li>• RAB6-D</li> <li>• C2-9-D</li> </ul>
Screen Formats	Single, Dual, Quad, 2D+ SlowflowHD
Display Modes:	
<ul style="list-style-type: none"> <li>• Simultaneous dual mode: 2D/2D+ SlowflowHD</li> <li>Triplex mode: 2D+ SlowflowHD /PW (triplex update); 2D+ SlowflowHD /M, 2D+ SlowflowHD /AMM</li> </ul>	
SlowflowHD Coding Steps	256 color steps
SlowflowHD window size lateral	Maximal to minimal B mode scan angle; axial: B-scan range
Wall Motion Filter	8 steps (low1, low2, mid1, mid2, high1, high2, max1, max2)
Smoothing Filter	12 steps
Gain Control	+15 dB to -15 dB, 0.2 dB steps
Line Density	10 steps
Pulse repetition frequency	auto adjusting
Map	8 different color codes for each probe
Frequency Range	1 to 18 MHz depending on the probe adjustable in three steps (low, mid, high)
Flow Resolution	4 steps (low, mid1, mid2, high)

Balance	From 25 to 225
Line Filter	8 steps (off, 1 to 7)
Artifact suppression	4 steps (off, low, mid, high)

Tissue Doppler Mode (TD)		
Probes:	<ul style="list-style-type: none"> <li>• eM6C G2</li> <li>• RAB6-D</li> <li>• S4-10-D</li> </ul>	<ul style="list-style-type: none"> <li>• C2-9-D</li> <li>• C1-6-D</li> <li>• M5Sc-D</li> </ul>
Screen Formats	Single, Dual, Quad, 2D+TD	
Display Modes	Simultaneous dual mode: 2D/2D+TD; Triplex mode: 2D+TD/PW, 2D/M+MTD;	
TD coding steps	65536 color steps	
Depth range	Axial: 0 to B-scan range Lateral: 0 to B-scan-range	
Baseline shift	17 steps	
Inversion of color direction	Yes	
Smoothing Filter	12 steps rising time, 12 steps falling time	
Gain Control	+15 dB to -15 dB, 0.2 dB steps	
Line Density (color line density)	10 steps	
Ensemble (Color shots per line)	3 to 31	
Flow Resolution	4 steps (low, mid1, mid2, high)	
Pulse repetition frequency	150 Hz to 20.5 kHz	
TD Map	4 different color codes for each probe	
Frequency range	1 to 18 MHz depending on the probe, adjustable in 3 steps (low, mid, high)	
Balance	From 25 to 225	
Max. meas. velocity	4.23 m/sec	
Min. meas. velocity	0.3 cm/sec	
Display Mode	V (velocity)	
Scale	kHz, cm/s, m/s	

PW-Tissue Doppler Mode (PW-TD)		
Probes:	<ul style="list-style-type: none"> <li>• eM6C G2</li> <li>• RAB6-D</li> <li>• S4-10-D</li> <li>• RM7C</li> </ul>	<ul style="list-style-type: none"> <li>• C2-9-D</li> <li>• C1-6-D</li> <li>• M5Sc-D</li> </ul>
Operating Modes	2D+TD/PW (Tissue Doppler + Pulsed Wave Doppler, Single Gate)	
Transmit Frequencies	1.75..18 MHz	
Pulse Repetition Frequency (PRF)	0.9..7.0 kHz	
Sample Volume (Doppler Gate)	Length: 0.7,1,2,3,4,5,6, 7,8,9,10,15 mm Position: 5 mm to B-scan end, Angle correction: -85°...0°...+85°	
Power control range	1-100	
Gain range	B-Mode: +15 to -25 dB TD: +15 to -15 dB PW: +15 to -25 dB	
WMF (Wall Motion Filter)	PW: 30...500 Hz,	
Baseline shift	± PRF/2, ± 8 steps	
Spectrum Analyzer	max. 128 frequencies, 256 amplitude levels	
PW sweep speeds	Duplex/Triplex (26.44 / 13.22 / 8.81 / 6.61 / 4.40 / 2.94 cm/s)	
Review (memory time)	>60 s (32MB)	
Measurable velocities	1cm/s – 1.3m/s (α = 0°, 2.0MHz, max. zero shift)	

	1cm/s – 2.5m/s ( $\alpha = 60^\circ$ , 2.0MHz, max. zero shift)
Signal processing	Dynamic range: 15 steps (10 to 40) Gray maps: 18 basic curves and 3 User-defined (pre, post) Tint maps: 11
Scale display	Vert.: kHz, cm/s, m/s (selectable) Hor.: 1s marker (big), ½ s marker (small)
Screen Formats	2D+TD/PW: horizontal: three different sub formats 30/70, 50/50, 70/30% vertical: 50/50%
Display Formats	2D+TD/PW (duplex/triplex update/simultaneous);
Audio-Modes	Stereo (both directions separately in both channels)
Audio Volume	Adjustable

### Volume Scan Module

Vol. scan size: max. 64 MB for gray volumes, max. 90 MB for color volumes; The required memory space depends on scan parameters (VOL-box size and quality (low, mid1, mid2, high1, high2, max). Typical: 0.8-5 MB

Lines/2D-image: max. 1024 (typ. 80 to 350)

2D-images/volume: Up to 4096 (Acquisition mode dependent)

Max. Volumes/sec.: >1200 (typ. 10-20), depending on probe and scanning parameters

4D Volume Cine: up to 400 volumes, up to 512 MB

Display of sectional plane images: synchronous with control seeing, arbitrary movement in volume, monitored position in volume

Rotation: 360°, 1° or 3° increments (X-, Y- and Z-axis)

Magnification. Adjustable from 0.3 to a factor of 4.00

Acquisition Modes:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• 3D Static: <ul style="list-style-type: none"> <li>- 3D (2D incl. CRI)</li> <li>- 3D/PD (incl. CRI)</li> <li>- 3D/CFM (incl. CRI)</li> <li>- 3D/Slowflow3D</li> <li>- 3D B-Flow</li> <li>- 3D/HD-Flow incl. CRI</li> <li>- 3D Contrast† (Coded PI, CCIS)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• 4D: <ul style="list-style-type: none"> <li>- 4D Real Time</li> <li>- 4D Biopsy</li> <li>- VCI-A</li> <li>- VCI-OmniView</li> <li>- STIC</li> <li>- eSTIC</li> </ul> </li> </ul> |
|---|--|

- STIC:
  - Fetal Cardio
  - STIC Angio: B/Power Doppler (incl. CRI)
  - STIC CFM: B/Color Doppler (incl. CRI)
  - STIC HD-Flow: B/HD-Flow (incl. CRI)
  - STIC B-Flow
  - STIC TD
  - STIC with Contrast†

- eSTIC (eM6C G2 probe only):
  - STIC B (Fetal Cardio)
  - STIC CFM (B/Color Doppler)
  - STIC PD (B/Power Doppler)
  - STIC B/HD-Flow
  - STIC B/TD (B/Tissue Doppler)

Visualization Modes:

- Render
  - 3D/4D Rendering (diverse surface and intensity projection modes)
  - SonoRender*live*
- Sectional Planes
  - Multiplanar
  - OmniView, actual and projected view
  - Niche

- SonoVCAD*labor*
- TUI (Tomographic Ultrasound Imaging) (overview image+parallel slices)
  - TUI Standard
  - SonoVCAD*heart*

Visualization Modes:

- Volume Analysis
  - VOCAL: semi-auto/ manual segmentation tool (segmentation using touch screen), (3D Static only) + Threshold Volume: measure volume below and above a threshold
  - SonoAVC*follicle* (Sono Automated Volume Count)
  - SonoAVC*central*
  - SonoAVC*general*
- VCI (Volume Contrast Imaging)
- HD*live* Studio: 3 free moveable light sources and types

Render Modes:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• HD<i>live</i> Silhouette</li> <li>• HD<i>live</i> Flow</li> <li>• Surface Enhanced</li> <li>• Color</li> <li>• Mix Mode of two render modes</li> <li>• Surface Texture</li> <li>• Surface Smooth</li> </ul> | <ul style="list-style-type: none"> <li>• HD<i>live</i> Studio</li> <li>• HD<i>live</i> Flow Silhouette</li> <li>• Transparency modes: max-min- and X-ray</li> <li>• Gradient Light</li> <li>• Inversion</li> <li>• Glass Body</li> <li>• Light</li> </ul> |
|--|---|

Display graphics:

- Rotation axis, center point
- ROI box, 3D Frame
- Temporary display of onscreen controls (rotation, translation)

Gray maps: Slices: 21 (18 basic curves and 3 User-defined (pre, post) 3D Image: one general map adjustable with bright (-50 to +50) & contrast (-50 to +50))

Tint maps: Slices: 10; 3D image: 10

Depth render maps: 3

- |            |             |           |
|------------|-------------|-----------|
| V-SRI:     | • RIC6-12-D | • RM7C    |
| • RIC5-9-D | • RAB6-D    | • eM6C G2 |

### BF (B-Flow)

B-Flow for all probes except: S4-10-D and M5Sc

Screen Formats	Single (BF), Dual (BF+BF), Quad (BF+BF+BF+BF)
Display Modes	BF, Update: BF/PW
Acc. Power range	1 – 100
Scan angle	Taken from 2D
Gain range	+15 to -25 dB
Gray scale values	8 bit
SRI	Taken from 2D
Persistence filter	8 steps (pre)
S./PRI	1.00, 1.50, 2.00, 3.00, 4.00, 5.00
Quality	3 steps (pre) low, norm, high
Enhance	6 steps (pre) 0, 1, 2, 3, 4, 5
Gray maps	21 (18 basic maps and 3 User-defined maps)
Tint maps	10
Dynamic	12 different dynamic curves C1 – C12
Accumulation	Off, 0.20, 0.35, 0.50, 0.75, 1.00, 1.50, Infinite
Background	0, 1, 2

Contrast Imaging†		
Probes:	<ul style="list-style-type: none"> <li>ML6-15-D</li> <li>M5Sc-D</li> </ul>	<ul style="list-style-type: none"> <li>9L-D</li> <li>RIC5-9-D</li> </ul>
Low MI Contrast Capabilities		
Acc. Power range	1 – 100	
Scan angle	Taken from 2D	
Gain range	+15 to -25 dB	
Gray scale values	32 bit	
SRI	Taken from 2D	
Persistence filter	8 steps (pre)	
S./PRI	1.00, 1.50, 2.00, 3.00, 4.00, 5.00	
Quality	3 steps low, norm, high	
Enhance	6 steps (pre) 0, 1, 2, 3, 4, 5	
Gray maps	21 (18 basic maps and 3 User-defined maps)	
Tint maps	10	
Dynamic	12 different dynamic curves C1 – C12	
Accumulation	Off, 0.20, 0.35, 0.50, 0.75, 1.00, 1.50, Infinite	
Background	0, 1, 2	
Time Delay	0, 0.5, 1, 2, 3, ...10	
Display Modes:	<ul style="list-style-type: none"> <li>Coded PI: CIS</li> </ul>	<ul style="list-style-type: none"> <li>Coded PI: CCIS</li> </ul>
Screen Formats:	<ul style="list-style-type: none"> <li>Code PI: Single (B), Dual (B+B), Quad (B+B+B+B)</li> <li>CIS: Dual simultan (2D+Coded PI)</li> <li>CCIS: Single (B), Dual (B+B), Quad (B+B+B+B)</li> </ul>	
Contrast Analysis Capabilities: up to 3 user adjustable ROIs with comparative analysis on complex curves		

Compression Elastography		
Probes:	<ul style="list-style-type: none"> <li>RIC5-9D</li> <li>11L-D</li> </ul>	<ul style="list-style-type: none"> <li>IC5-9-D</li> <li>ML6-15D</li> </ul>
Acoustic Power range: 1 – 100		
Tx Frequency: 3 (penet/norm/resol)		
Transparency: 51 steps (0,5, 10, ...255)		
Soft Compress:	<ul style="list-style-type: none"> <li>Range: 0-9</li> </ul>	<ul style="list-style-type: none"> <li>Step Size: 1</li> </ul>
Hard Compress	<ul style="list-style-type: none"> <li>Range: 0-9</li> </ul>	<ul style="list-style-type: none"> <li>Step Size: 1</li> </ul>
PRF: 10, 15, 25, 40, 60, 85 Hz		
Elasto Maps: 8		
Persistence:	<ul style="list-style-type: none"> <li>Range: 1-9</li> </ul>	<ul style="list-style-type: none"> <li>Step Size: 1</li> </ul>
Line Dens.:	Range: 1-2	
Filter Axial:	<ul style="list-style-type: none"> <li>Range: 1-9</li> </ul>	<ul style="list-style-type: none"> <li>Step Size: 1</li> </ul>
Filter Lateral:	<ul style="list-style-type: none"> <li>Range: 1-21</li> </ul>	<ul style="list-style-type: none"> <li>Step Size: 2</li> </ul>
Window Length:	<ul style="list-style-type: none"> <li>Range: 8-25</li> </ul>	<ul style="list-style-type: none"> <li>Step Size: 1</li> </ul>
Screen Formats:	<ul style="list-style-type: none"> <li>Single (2D/Elasto)</li> <li>Dual (2D/Elasto+2D/Elasto)</li> <li>Quad (2D/Elasto+2D/Elasto+2D/Elasto+2D/Elasto)</li> </ul>	
Elastography Analysis up to 4 user adjustable ROIs with comparative analysis on complex curves		
Elastography Ratio Measurement		

Shear Wave Elastography (not available in all countries)	
Probes:	<ul style="list-style-type: none"> <li>C1-6-D</li> </ul>
Acoustic Power range: 1 – 100	
Gain: 0 - 100	
Frequency: 50 – 400 Hz	
Transparency: 51 steps (0,5, 10, ...255)	
Elasto Maps: 8	
Velocity Scale: 2,0 – 10,0 m/s (22 steps)	

Bi-Plane Mode (available on eM6C G2 only)	
Acc. Power range	1 – 100
Scan angle	B-Mode angle: 85° Bi-Plane angle: 90°
Gain range	+15 to -25 dB
Gray scale values	8 bit
SRI	5 steps (1-5)
CRI	8 steps (1-8)
CE	On/Off
FFC	On/Off
Persistence filter	8 steps (pre)
Line filter:	3 steps (pre) off, low (12,5/75/12,5%), high (25/50/25%)
Line Density:	3 steps (pre) low, norm, high
Reject:	51 steps (pre) from 0 to 255
Enhance:	6 steps 0, 1, 2, 3, 4, 5
Gray maps:	21 (18 basic & 3 User-defined maps)
Tint maps:	10
Dynamic:	12 different dynamic curves C1-C12
Steering:	Max 20° (+/- 10°)



## Measurements

Generic measurements		
Distance:	<ul style="list-style-type: none"> <li>Distance (Point to Point)</li> <li>Distance (Line to Line)</li> <li>2D Trace (Trace Length)</li> </ul>	<ul style="list-style-type: none"> <li>2D Trace (Point Length)</li> <li>Stenosis (% Dist.)</li> <li>Ratio D1/D2</li> </ul>
Area/Circumference:	<ul style="list-style-type: none"> <li>Ellipse</li> <li>Trace (Line)</li> <li>Trace (Point)</li> </ul>	<ul style="list-style-type: none"> <li>Stenosis (%Area)</li> <li>Area (2 Dist.)</li> <li>Ratio A1/A2</li> </ul>
Volume: following Methods:	<ul style="list-style-type: none"> <li>1 Distance</li> <li>1 Ellipse</li> <li>1 Dist. + Ellipse</li> </ul>	<ul style="list-style-type: none"> <li>3 Distance</li> <li>Multiplane-Planimetric Volume (3D only)</li> </ul>
Angle:	<ul style="list-style-type: none"> <li>Angle (3 Point)</li> </ul>	<ul style="list-style-type: none"> <li>Angle (2 Line)</li> </ul>
M-Mode:	<ul style="list-style-type: none"> <li>Distance (Point to Point)</li> <li>Time</li> <li>Slope</li> <li>Vessel Diam.</li> <li>Ratio D1/D2</li> </ul>	<ul style="list-style-type: none"> <li>HR</li> <li>Stenosis (% Dist.)</li> <li>IMT</li> <li>Stenosis Diam.</li> </ul>
PW Doppler Mode:	<ul style="list-style-type: none"> <li>Auto &amp; Manual Trace: <ul style="list-style-type: none"> <li>PS (Peak Systole)</li> <li>ED (End Diastole)</li> <li>MD (Mid. Diastole)</li> <li>S/D (Ratio)</li> <li>TAmx</li> <li>HR</li> <li>PI (Pulsatility Index)</li> <li>RI (Resistance Index)</li> </ul> </li> <li>Vol. Flow</li> <li>PGmax, PGmean</li> <li>TAmx (Time avg. max. Velocity)</li> <li>TAmx (Time avg. mean Velocity)</li> <li>VTI (Velocity Time Integral)</li> </ul>	
Heart Rate		
Vessel:	<ul style="list-style-type: none"> <li>R/L Vessel area</li> <li>R/L Vessel diam.</li> <li>R/L IMT</li> </ul>	<ul style="list-style-type: none"> <li>R/L Stenosis area</li> <li>R/L Stenosis diam.</li> <li>R/L Flow diam.</li> </ul>
Single Measurements:	<ul style="list-style-type: none"> <li>PS/ED</li> <li>RI</li> <li>PI</li> <li>PS</li> </ul>	<ul style="list-style-type: none"> <li>Acceleration</li> <li>HR</li> <li>ED</li> </ul>

Abdomen calculations	
Liver	Gallbladder
Pancreas	Spleen
Kidney (right/left)	Renal Artery (right/left)
Aorta (Proximal, Mid, Distal)	Portal Vein
Vessel	Bladder Volume
Summary Reports	

Small part calculations
Thyroid (right/left)
Testicle (right/left)
Dorsal Penile Artery (right/left)
Vessel
Summary Reports

Small part breast calculations
Lesion 1-5 (right/left)

## Summary Reports

Obstetrics calculations
Fetal Biometry
Early Gestation
Fetal Long Bones
Fetal Cranium
NT Method: SonoNT/Manual
AFI
Uterus
Ovary right/left
Umbilical Vein
Placenta Volume
Ductus venosus: S, D, a, PI, PLI, PVIV
Doppler measurements: Ductus Art., Ductus Ven., Ao, Carotid, MCA, Celiac Artery, Superior Mesenteric Artery, Umbilical Art., Umbilical Vein, FHR, Uterine Art.
Gestational Age Calculation
Gestational Growth Calculation
Fractional limb Volume
Fetal Weight (FW) Estimation
Fetal Trend Graph
Multi-Gestational Calculation & Fetal Compare
Calculation and Ratios
Fetal Qualitative Description (Anatomical assessment)
Fetal Environmental Description (Biophysical profile)
Summary Reports

Obstetrics Fetal Echo
Chambers
Thorax
Aorta/LVOT
Pulmonary/RVOT
Venous
<i>fetal</i> HQ
FHR
Tricuspid valve
Mitral Valve
Aortic
Pulmonary
LPA
RPA
Ductus Art.
Cardiac Output
LT TEI
RT TEI
Ductus Ven.
Umbilical Vein
Pulmonary Veins
Summary Reports

Obstetrics Z-scores	
<ul style="list-style-type: none"> <li>Long Axis</li> <li>Aortic Arch</li> <li>Short Axis</li> <li>Thorax</li> </ul>	<ul style="list-style-type: none"> <li>Obl. Short axis</li> <li>4 Chambers</li> <li>Summary Reports</li> </ul>

## **fetalHQ & fetalHQ2**

- Global Heart Size: Length, Width, Area, Axis
- Global Heart Shape: Global Sphericity Index
- Ventricular Size (for RV & LV): Transverse Diameter (24 segment), BAL, Area
- Ventricular Shape (for RV & LV): Sphericity Index (24 segment)
- Ventricular Contractility (for RV & LV): Transverse Diameter Fractional Shortening (24 segment), Fractional Area Change, Global Strain, RV Free Wall Strain, MAPSE/TAPSE
- Ventricular Contractility (LV only): EDV, ESV, CO, CO/kg, SV, SV/kg, EF

## **Cardiology calculations**

2D Mode:

- LV Simpson (Single & Bi-Plane)
- Volume (Area Length)
- LV-Mass (Epi & Endo Area, LV Length)
- LV (RVD, IVS, LVD, LVPW)
- LVOT Diameter
- RVOT Diameter
- MV (Dist A, Dist B, Area)
- TV (Diameter)
- AV/LA (Aortic Valve/Left Atrium)
- PV (Diameter)

M-Mode:

- LV (IVS, LVD, LVPW, RVD)
- AV/LA (Ao Root Diam, LA Diam, AV Cusp Sep., Ao Root Ampl)
- MV(D-E, E-F Slope, A-C Interval, EPSS)
- HR (Heart Rate) Atrial HR

PW-Mode:

- MV (Mitral Valve)
- AV (Aortic Valve), TV (Tricuspid Valve)
- PV (Pulmonary Valve)
- LVOT & RVOT Doppler (Left & Right Ventricle Outflow Tract)
- Pulmonic Veins
- PAP (Pulmonary Artery Pressure measurement)
- HR (Heart Rate)
- TEI-Index

C-Mode:

- PISA

Others:

- |                              |                                       |
|------------------------------|---------------------------------------|
| • Diast. Vol. (Bi)           | • Mean Gradient                       |
| • Syst. Vol. (Bi)            | • Mean Gradient Acceleration          |
| • Stroke Volume              | • VTI                                 |
| • Volume Flow                | • TVA                                 |
| • Cardiac Output             | • PG                                  |
| • Ejection Fraction          | • PHT                                 |
| • Fractional Shortening      | • MVA                                 |
| • Myocardial Thickness       | • AVA                                 |
| • LA/Ao Ratio                | • ERO                                 |
| • E/A Peak                   | • CVP (Cardio Vascular Profile) Score |
| • Peak Gradient Acceleration |                                       |

Summary Reports

## **Transrectal calculations**

Prostate

Vessel

Summary Reports incl. PSAD, PPSA(1), PPSA(2) calculation

## **Vascular calculations**

Left/Right CCA (Common Carotid Artery)

Left/Right ICA (Internal Carotid Artery)

Left/Right ECA (External Carotid Artery)

Left/Right Vertebral Artery

Left/Right Subclav.

Left/Right Bulb

Vessels

Summary Reports

## **Gynecology calculations**

Uterus

Left/Right Ovary

Left/Right Follicle

Fibroid

Endometrial thickness (Dist, Double Dist.)

Cervix Length

Left/Right Ovarian Artery

Left/Right Uterine Artery

Vessels

Pelvic Floor

Left/Right Ovarian Cyst

Left/Right Ovarian Mass

Left/Right Adnexal Cyst

Generic Cyst

Left/Right Adnexal Mass

Generic Mass

Bladder (Length/Width/Height/Vol)

FHR

GYN IOTA LR2, Simple Rules and ADNEX Model. (not available in all countries)

IETA unenhanced ultrasound examination and enhanced ultrasound examination – Sonohysterography (not available in all countries)

IDEA Protocol

Uterus classification (ESHRE/ESGE and ASRM)

Summary Reports

## **Pediatric calculations**

Left/Right Hip Joint

Pericallosal Artery

Summary Report

## **Cephalic calculations**

Left/Right ACA (Anterior Cerebral Artery)

Left/Right MCA (Middle Cerebral Artery)

Left/Right PCA (Posterior Cerebral Artery)

Basilar Artery

A-Com. A (Anterior Com. Artery)

P-Com. A (Posterior Com. Artery)

Left/Right CCA (Common Carotid Artery)

Left/Right ICA (Internal Carotid Artery)

Left/Right Vertebral Artery

Vessels

Summary Reports

## OB Tables

### Age Tables

- AC: ASUM, CFEF, Hadlock\_82, Hadlock\_84, Hansmann, Hobbins, Jeanty, JSUM, Kurmanavicius, Merz, Nicolaides, Shinozuka, Siriraj, Tokyo
- AD: Persson
- APAD: Merz
- APTD: Hansmann
- APTDxTTD: Shinozuka, Tokyo
- BOD: Jeanty
- BPD: ASUM, ASUM (old), Campbell, CFEF, Chitty (outer-outer) (outer-inner), Eik-Nes, Hadlock\_82, Hadlock\_84, Hansmann, Hobbins, Jeanty, Johnsen, JSUM, Kurmanavicius, Kurtz, Leung, McLennanPersson, Merz, Nicolaides, OSAKA, Rempen, Sabbagha, Shinozuka, Siriraj, Tokyo, Verburg
- CEREB: Chitty, Goldstein, HILL, Hobbins, Nicolaides, Verburg
- CLAV: YARKONI
- CRL: ASUM, DAYA, Eik-Nes, Hadlock, Hansmann, Intergrowth, JSUM, McLennan, Persson, Pexters, Nelson, OSAKA, Rempen, Robinson, Robinson\_BMUS, Sahota, Shinozuka, Tokyo, Verburg
- FL: ASUM, CFEF, Chitty, Eik-Nes, Hadlock\_82, Hadlock\_84, Hansmann, Hobbins, Hohler, Jeanty, JSUM, Kurmanavicius, Leung, Persson, Merz, Nicolaides, O'Brien, OSAKA, Shinozuka, Siriraj, Tokyo, WARDA, Johnsen
- FTA: OSAKA
- FIB: Jeanty
- GS: Hansmann, Hellman, Holländer, Rempen, Tokyo, Nyberg
- HC: ASUM, CFEF, Chitty, Hadlock\_82, Hadlock\_84, Hansmann, Jeanty, Kurmanavicius, Leung, Merz, Nicolaides, Siriraj, Johnsen
- HL: ASUM, Hobbins, Jeanty, Merz, OSAKA
- LV: Tokyo
- MAD: Eik-Nes, eSnurra, Kurmanavicius
- OFD: ASUM, Chitty, Hansmann, Jeanty, Kurmanavicius, Merz, Nicolaides
- RAD: Jeanty, Merz
- TIB: Jeanty Merz
- TAD: CFEF, Merz
- TTD: Hansmann
- ULNA: Jeanty, Merz

### Growth Tables

- AC: ASUM, CFEF, Chitty, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Lai\_Yeo, Kurmanavicius, Lessoway, Leung, Merz, Nicolaides, Shinozuka, Siriraj, Tokyo, Verburg, Johnsen, Medvedev, Stork, Intergrowth, WHO
- AD: Persson
- AFI: Moore
- AOIST ED, PI, RI, PSV, TAMX: DelRio2006
- Aorta: Vmax: Rizzo
- APAD: Merz
- APTD: Hansmann
- APTDxTTD: Shinozuka\_SD
- AxT: Shinozuka, Tokyo
- BOD: Jeanty
- BPD: ASUM, Campbell, CFEF, Chitty, Eik-Nes, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Kurmanavicius, Lai\_Yeo, Lessoway, Leung, Persson, McLenna, Merz, Nicolaides, OSAKA, Paladini, Sabbagha, Shinozuka, Siriraj, Tokyo, Verburg, Medvedev, Stork, Intergrowth, WHO
- CLAV: YARKONI
- CM: Nicolaides
- CRL: ASUM, Hadlock, Hansmann, Intergrowth, JSUM, McLennan, Persson, OSAKA, Robinson, Robinson 1993, Shinozuka, Tokyo, Pexters, Medveev
- DV a/S: JSUM
- DV PI: Baschat, JSUM
- DV PLI: Baschat
- DV PVIV: Baschat

- DV S/a: Baschat
- FL: ASUM, CFEF, Chitty, Eik-Nes, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Kurmanavicius, Lessoway, Lai\_Yeo, Lessoway, Leung, Paladini, Persson, Merz, Nicolaides, O'Brien, OSAKA, Shinozuka, Siriraj, Tokyo, Verburg, WARDA, Johnsen, Medvedev, Stork, Intergrowth, WHO
- FTA: OSAKA
- FIB: Chitty, Jeanty, JFFSD, Siriraj
- FWg: Alexander
- Foot: Chitty
- GS: Hellman, Nyberg, Rempen, Tokyo
- HC: ASUM, CFEF, Chervernak, Chitty, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, Kurmanavicius, Lai\_Yeo, Lessoway, Leung, Merz, Nicolaides, Paladini, Siriraj, Verburg, Johnsen, Medvedev, Stork, Intergrowth, WHO
- HL: ASUM, Chitty, Jeanty, Lai\_Yeo, Merz, JFFSD, OSAKA, Paladini, Siriraj, Medvedev
- IFA: Rotten
- IVC PLI: JSUM
- Lt.Tei(ICT,IRT), Lt.Tei(a,b): Bhorat
- Lung Area Left/Right: Peralta
- LV: Tokyo
- MCA CP: Ebbing
- MCA PI: Ebbing
- MCA PS: Schaffer
- MCA PI, RI: JSUM, Bahlman
- MCA PV: Mari
- MCA TAMX: Schaffer
- MAD: Eik-Nes, eSnurra, Kurmanavicius
- MNM ANGLE: de Jong-Pleij
- MV E/A: HARADA
- NBL: BUNDUKI, SONEK, Medvedev, Orlandi
- NT: Nicolaides
- OFD: ASUM, Chitty, Hansmann, Jeanty, Kurmanavicius, Merz, Nicolaides, Medvedev, Intergrowth
- MainPA Vmax: Rizzo
- RAD: Chitty, Jeanty, JFFSD, Merz, Paladini, Siriraj
- SAG. AP: Malinger
- SAG. CC: Malinger
- TAD: CFEF, Jacot-Guillarmod, Merz
- TC: Chitkara
- TCD: Goldstein, Hill, Jacot-Guillarmod, Nicolaides, Verburg
- THYR CIRC: Ranzini
- TIB: Chitty, Jeanty, JFFSD, Merz, Siriraj
- TT: Karl
- TTD: Hansmann
- TV E/A: HARADA
- TYD: Pittyanont
- ULNA: Chitty, Jeanty, JFFSD, Merz, Siriraj
- UmbArt PI: Ebbing, JSUM, Merz, Schaffer
- UmbArt RI: JSUM, Merz, Kurmanavicius, Schaffer
- UtArtPI: Gomez, Merz, Schaffer
- UtArtRI: Merz, Schaffer
- Vermis A: Malinger
- Vermis C: Malinger
- Fractional Limb Avol/Tvol: Lee

### Fetal Weight Estimation (EFW)

- Campbell (AC)
- Hadlock (AC, BPD)
- Hadlock 1 (AC, FL)
- Hadlock 2 (BPD, AC, FL)
- Hadlock 3 (HC, AC, FL)
- Hadlock 4 (BPD, HC, AC, FL)
- Hansmann (BPD, TTD)
- Intergrowth (AC, HC)

- Lee (AVOL; AC, AVOL; AC, BDP, AVOL; TVOL; AC, TVOL; AC, BDP, TVOL)
- Merz (AC, BPD)
- Osaka (BPD, FTA, FL)
- Persson (BPD, MAD, FL)
- Persson 2, Schild (HC, AC, FL)
- Shepard (AC, BPD)
- Shinozuka 1 (BPD, ADTP, TTD, FL)
- Shinozuka 2 (BPD, FL, AC)
- Shinozuka 3 (BPD, APTD, TTD, LV)
- Tokyo (BPD, APTD, TTD, FL)

Gestational Age by EFW

- Hadlock, JSUM 2001, Osaka, Shinozuka, Tokyo

Fetal Weight Growth FWG

- Alexander, Ananth, Bourgogne, Brenner, Burgundy, CFEF, Doubilet, Duryea, Ego, Eik-Nes, Hadlock, Hansmann, Hansmann (86), Hobbins/Persutte, Intergrowth, Johnsen, Jsum 2001, Kramer, Persson, Osaka, Shinozuka, Tokyo, Williams, WHO, Yarkoni

**Fetal Ratios**

CI (BPD/OFD) (Hadlock)

FL/AC (Hadlock)

FL/BPD (Hohler)

FL/HC (Hadlock), (WHO)

HC/AC (Campbell)

Va/Hem (Nicolaidis)

Va/Hem (Hansmann)

Vp/Hem (Nicolaidis)

LHR (Peralta)

CVR (Peranteau)

## Probes

<b>C1-6-D</b>	
XDclear Wide Band Convex Probe	
Applications	Abdomen, OB, GYN, Fetal Cardio
Max. Bandwidth (-20dB) †††	2-5 MHz
Number of Elements	192
Convex Radius	55 mm
FOV	113°
Foot Print	67.2 x 11.5 mm
Depth	Max. 50 cm
Center Frequency	3.4 MHz
B-Mode Frequency	2.00 – 2.00 MHz
Doppler Frequency	2,50 – 3.85 MHz
Harmonic Frequency	2.00 – 2.56 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

<b>C2-9-D</b>	
XDclear Wide Band Convex Probe	
Applications	Abdomen, OB, GYN, Pediatrics
Max. Bandwidth (-20dB) †††	3-9 MHz
Number of Elements	192
Convex Radius	43 mm
FOV	94°
Foot Print	48.0 x 9.0 mm
Depth	Max. 26 cm
Center Frequency	5.0 MHz
B-Mode Frequency	4.00 – 7.14 MHz
Doppler Frequency	3.03 – 5.00 MHz
Harmonic Frequency	2.63 – 3.57 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

<b>IC5-9-D</b>	
Wide Band Convex Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB) †††	4-9 MHz
Number of Elements	192
Convex Radius	11 mm
FOV	185°
Foot Print	21.2 x 17.2 mm
Depth	Max. 16 cm
Center Frequency	5.8 MHz
B-Mode Frequency	5.00 – 9.09 MHz
Doppler Frequency	4.55 – 6.25 MHz
Harmonic Frequency	3.45 – 3.85 MHz
Biopsy Guide	Single-Angle, Reusable and disposable

<b>11L-D</b>	
Wide Band Linear Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, Breast
Max. Bandwidth (-20dB) †††	4-10 MHz
Number of Elements	192
FOV	38 mm
Foot Print	46.9 x 14.4 mm
Depth	Max. 11 cm
B-Mode Steering Angle	7°/14°/20°
Color Doppler Steering Angle	7°/14°/20°
Center Frequency	7.3 MHz
B-Mode Frequency	6.67 – 10.00 MHz
Doppler Frequency	5.26 – 7.14 MHz
Harmonic Frequency	4.55 – 5.00 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

<b>9L-D</b>	
Wide Band Linear Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, OB
Max. Bandwidth (-20dB) †††	3-8 MHz
Number of Elements	192
FOV	44 mm
Foot Print	53.0 x 14.1 mm
Depth	Max. 14 cm
B-Mode Steering Angle	7°/14°/20°
Color Doppler Steering Angle	7°/14°/20°
Center Frequency	5.5 MHz
B-Mode Frequency	4.55 – 10.00 MHz
Doppler Frequency	3.70 – 5.26 MHz
Harmonic Frequency	2.86 – 2.86 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

<b>ML6-15-D</b>	
Wide Band Matrix Linear Probe	
Applications	Small Parts, Peripheral Vascular, Pediatrics, MSK, Breast
Max. Bandwidth (-20dB) †††	4-13 MHz
Number of Elements	1008
FOV	50 mm
Foot Print	60.7 x 16 mm
Depth	Max. 16 cm
B-Mode Steering Angle	7°/14°/20°
Color Doppler Steering Angle	7°/14°/20°
Center Frequency	9.0 MHz
B-Mode Frequency	8.33 – 11.11 MHz
Doppler Frequency	6.25 – 9.09 MHz
Harmonic Frequency	5.00 – 6.25 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

## Probes (cont.)

<b>L8-18i</b>	
Wide Band Linear Probe	
Applications	Small Parts, MSK, Pediatric
Max. Bandwidth (-20dB) †††	5-14 MHz
Number of Elements	168
FOV	25 mm
Foot Print	34.8 x 11.1 mm
Depth	Max. 12 cm
B-Mode Steering Angle	7°/14°/25°
Color Doppler Steering Angle	7°/14°/25°
Center Frequency	9.5 MHz
B-Mode Frequency	7.14 – 12.50 MHz
Doppler Frequency	6.67 – 10.00 MHz
Harmonic Frequency	5.88 – 7.15 MHz

<b>M5Sc-D</b>	
XDclear Wide Band Phased Array Probe	
Applications	Abdominal, Cardiology, OB, Fetal Echo, Pediatrics, Cephalic
Max. Bandwidth (-20dB) †††	1-5MHz
Number of Elements	240
FOV	90°
Foot Print	27.5 x 18.1 mm
Depth	Max. 24 cm
Center Frequency	2.9 MHz
B-Mode Frequency	2.44 – 3.33 MHz
Doppler Frequency	1.85 – 2.50 MHz
Harmonic Frequency	1.61 – 2.17 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

<b>S4-10-D</b>	
Wide Band Phased Array Probe	
Applications	Small Parts, Cardiology, Pediatrics
Max. Bandwidth (-20dB) †††	4-9 MHz
Number of Elements	128
FOV	90°
Foot Print	20.0 x 15.0 mm
Depth	Max. 14 cm
Center Frequency	6.3 MHz
B-Mode Frequency	5.88 – 7.14 MHz
Doppler Frequency	3.85 – 6.25 MHz
Harmonic Frequency	4.00 – 4.35 MHz

<b>RAB6-D</b>	
Wide Band Convex Volume Probe	
Applications	Abdomen, OB, GYN, Pediatrics
Max. Bandwidth (-20dB) †††	2-8 MHz
Number of Elements	192
Convex Radius	47 mm
Volume Sweep Radius	24 mm
FOV	90° (B), 90° x 85° (Volume scan)
Foot Print	62.2 x 34.0 mm
Depth	Max. 26 cm
Center Frequency	4.7 MHz
B-Mode Frequency	3.23 – 6.67 MHz
Doppler Frequency	3.03 – 5.00 MHz
Harmonic Frequency	2.56 – 3.70 MHz

Biopsy Guide	Multi-Angle, disposable with reusable bracket
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<b>RM7C</b>	
XDclear Wide Band Convex Volume Probe with Active Matrix Array	
Applications	Abdomen, OB, GYN, Pediatrics, Fetal Cardio
Max. Bandwidth (-20dB) †††	2-8 MHz
Number of Elements	576
Convex Radius	50 mm
Volume Sweep Radius	22.7 mm
FOV	90° (B), 90° x 85° (Volume scan)
Foot Print	64.1 x 40.1 mm
Depth	Max. 26 cm
Center Frequency	4.9 MHz
B-Mode Frequency	4.00 – 7.14 MHz
Doppler Frequency	3.03 – 5.00 MHz
Harmonic Frequency	2.63 – 3.57 MHz

<b>RIC5-9-D</b>	
Wide Band Convex Volume Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB) †††	4-9 MHz
Number of Elements	192
Convex Radius	12 mm
Volume Sweep Radius	12 mm
FOV	185°(B), 185° x 120° (Volume scan)
Foot Print	22.4 x 22.6 mm
Depth	Max. 16 cm
Center Frequency	6.6 MHz
B-Mode Frequency	5.00 – 9.09 MHz
Doppler Frequency	4.55 – 6.25 MHz
Harmonic Frequency	3.45 – 3.85 MHz
Biopsy Guide	Single-Angle, Reusable, Disposable, disposable with latex cover

<b>RIC6-12-D</b>	
Wide Band Convex Volume Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB) †††	5-13 MHz
Number of Elements	256
Convex Radius	12 mm
Volume Sweep Radius	12 mm
FOV	187°(B), 187° x 120° (Volume scan)
Foot Print	22.4 (B) x 22.6 (V) mm
Depth	Max. 13 cm
Center Frequency	9.0 MHz
B-Mode Frequency	6.25 – 10.00 MHz
Doppler Frequency	6.67 – 8.33 MHz
Harmonic Frequency	5.26 – 5.56 MHz
Biopsy Guide	Single-Angle, Reusable, Disposable, disposable with latex cover

## Probes (cont.)

<b>RSP6-16-D</b>	
Wide Band Linear Volume Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, Breast
Max. Bandwidth (-20dB) †††	6-18 MHz
Number of Elements	192
Volume Sweep Radius	81 mm
FOV	38.4 mm (B), 38.4 mm x 29° (Volume scan)
Foot Print	48.6 x 55.9 mm
Depth	Max. 8 cm
B-Mode Steering Angle	7°/14°/20°
Color Doppler Steering Angle	7°/14°/20°
Center Frequency	11.5 MHz
B-Mode Frequency	8.33 – 12.50 MHz
Doppler Frequency	6.25 – 8.33 MHz
Harmonic Frequency	5.26 – 5.26 MHz

<b>eM6C G2</b>	
Wide Band Convex Volume Probe with Active 2D Electronic Matrix Array Technology	
Applications	Abdomen, OB, GYN, Fetal Cardio
Max. Bandwidth (-20dB) †††	2-7 MHz
Number of Elements	8192
Convex Radius	53 mm
Volume Angle	90°
FOV	85° (B), 85° x 90° (Volume Scan)
Foot Print	60.3 x 32.3 mm
Depth	Max. 26 cm
Center Frequency	4.0 MHz
B-Mode Frequency	3.85 – 5.56 MHz
Doppler Frequency	2.38 – 3.57 MHz
Harmonic Frequency	2.50 – 3.85 MHz
Biopsy Guide	Multi-Angle, disposable with reusable bracket

## Connectivity

<b>External Inputs and Outputs</b>
External Connectivity (direct access) <ul style="list-style-type: none"> <li>• VGA out</li> <li>• Network (RJ45)</li> <li>• Wireless Network interface (USB) (Option)</li> <li>• USB 3.0 (6x)</li> <li>• S-Video Out 1</li> <li>• HDMI</li> </ul>
Connectivity behind rear panel (access after opening): <ul style="list-style-type: none"> <li>• Audio in/Out               <ul style="list-style-type: none"> <li>- Left/right</li> </ul> </li> </ul>
Ext. Device/Remote Connections: <ul style="list-style-type: none"> <li>• BW Printer via USB</li> <li>• Color Printer/ via USB</li> <li>• DVR via USB</li> <li>• Footswitch via USB</li> <li>• Wireless Network interface (USB) (Option)</li> <li>• RS 232: via USB to RS 232 converter (Option)</li> <li>• ECG (Option)</li> </ul>
<b>Service Tools</b>
Data Export capabilities for Asset Performance Analytics
On-board probe quality assessment tool



## Safety Conformance

### The Voluson E10 is:

tested for EMC

compliant with EN55011 group 1 class A (CISPR 11 amendment 1)

compliant with IEC 60601-1-2

CE marked to Council Directive 93/42/EEC on Medical Devices

### The Voluson E10 conforms to the following safety standards

IEC<sup>††</sup> 60601-1 Electrical Medical Equipment

IEC<sup>††</sup> 60601-1-2 Electromagnetic compatibility

IEC<sup>††</sup> 60601-1-6 Usability

IEC<sup>††</sup> 62304 Software Life Cycle Processes

IEC<sup>††</sup> 62366 Application of usability engineering to medical devices

IEC<sup>††</sup> 60601-2-37 Particular requirements for the safety of ultrasound medical diagnostic and monitoring equipment

ISO 10993 Biological evaluation of medical devices

IEC 62359 Ultrasonic - Field characterization - Test methods for the determination of thermal and mechanical indices related to medical diagnostic ultrasonic fields

WEEE (Waste Electrical and Electronic Equipment)

ROHS according to 2011/65/EU

<sup>†</sup>Not for sale in the USA. Not approved or cleared by the U.S. FDA. Please contact your GE Sales Representative for information about availability in your area.

<sup>††</sup>Including national deviations

<sup>†††</sup>Used frequencies are dependent on probe settings and parameters and are displayed on the ultrasound screen

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