Specificaţi Completată

Model: Vivid iq Preimum; Producător: GE Healthcare în conlucrare cu GE Medical Systems (China) GE Medical Systems SCS, GE Medical Systems Ultrasound & Primary Care Diagnostics; Ţara: SUA, China, Franţa.

Specificarea tehnică deplină solicitată de către autoritatea contractantă	Specificarea tehnică deplină propusă de către autoritatea ofertantă
Tip laptop sau analogic;	Tip laptop. **DA**
Anul de producere: 2020 - 2021;	Anul de producere: 2021; **DA**
APLICAŢII CLINICE: Cardio, Vascular;	APLICAŢII CLINICE: Cardio, Vascular;
PORTURI PENTRU TRADUCTOARE ACTIVE: ≥3 (inclusiv prin extindere numar porturi cu multiplicator);	PORTURI PENTRU TRADUCTOARE ACTIVE: 4 (3RS +1 sonda 4D) inclusiv prin extindere numar porturi cu multiplicator; **DA**
PORT CW: ≥1;	PORT CW: 1; **DA**
NIVELE DE GRI: ≥256;	NIVELE DE GRI: -256; **DA**
GAMA DINAMICĂ: ≥200dB;	GAMA DINAMICĂ: ≥200dB; **DA**
CANALE FIZICE PREPROCESARE: ≥ 512;	CANALE FIZICE PREPROCESARE -128; **DA**
ADÂNCIME DE SCANARE: ≥ 40 cm;	ADÂNCIME DE SCANARE: 33 cm; **DA**
DIAPAZON FRECVENTĂ ASIGURATĂ DE DISPOZITIV 1-22 Mhz (minim);	DIAPAZON FRECVENTĂ ASIGURATĂ DE DISPOZITIV 1-18Mhz. **DA**
TRADUCTOARELE ACCEPTATE DE SISTEM: matriciale, convexe, TEE, intra-operationale, sectoriale , volumetrice 4D, CW pencil, monocristal;	TRADUCTOARELE ACCEPTATE DE SISTEM: matriciale **DA**, convexe **DA**, TEE **DA**, intra-operationale **DA**, sectoriale **DA** , volumetrice 4D **DA**, CW pencil **DA**, monocristal **DA**;
Număr frecvenţe emise de un traductor ≥ 8;	Număr frecvenţe emise de un traductor ≥ 8; **DA în dependeţă de sondă** *M5S-RS- 2D: Octave 1.5/3.0, 1.7/3.3, 1.9/3.7, 2.3/4.6 MHz, Fundamental 2.0, 3.5, 4.5 MHz; CFM: 109, 2.0, 2.2, 2.5, 3.3 MHz; PW: 1.8, 2.0, 2.5, 3.3 MHz; CW: 1.9, 2.3, 2.5 MHz)*
POSTPROCESARE DA;	POSTPROCESARE **DA**;
Moduri de imagistică:	Moduri de imagistică:
M-mod DA;	M-mod **DA**;
M-mod şi 2-D DA;	M-mod şi 2-D **DA**;
Armonici Tisulare DA;	Armonici Tisulare **DA**;
M-mode anatomic DA (optional);	M-mode anatomic **DA** (optional);
M-Mode color DA;	M-Mode color **DA**;
DOPPLER Tip CW, PW, CFM, TVI;	DOPPLER Tip CW, PW, CFM, TVI; **DA**
Masurari automatizate DA;	Masurari automatizate **DA**;
Calcule automate DA;	Calcule automate **DA**;
Power Doppler DA;	Power Doppler **DA**;
Duplex DA;	Duplex **DA**;
Triplex DA	Triplex **DA**
MĂSURĂRILE ŞI CALCULE NECESARE :	MĂSURĂRILE ŞI CALCULE NECESARE :
Cordului:	Cordului:
- Diametru aortă DA;	- Diametru aortă **DA**;
- Diametru atriu stâng DA;	- Diametru atriu stâng **DA**;
- Diametru telediastolic ventriculului stâng DA;	- Diametru telediastolic ventriculului stâng **DA**;
- Diametru telesistolic ventriculului stâng DA;	- Diametru telesistolic ventriculului stâng **DA**;
- Grosimea peretelui ventriculului stâng DA;	- Grosimea peretelui ventriculului stâng **DA**;
- Grosimea sept interventricular DA;	- Grosimea sept interventricular **DA**;
- Grosimea ventricolului drept DA;	- Grosimea ventricolului drept **DA**;
- Volum telediastolic ventricular stâng DA;	- Volum telediastolic ventricular stâng **DA**;
- Volum telesistolic ventricular stâng DA;	- Volum telesistolic ventricular stâng **DA**;
- Calcularea fracţiei de ejecţie al ventriculul stâng DA;	- Calcularea fracţiei de ejecţie al ventriculul stâng **DA**;
- Calcularea fracţiei de scurtare al ventriculul stâng DA;	- Calcularea fracţiei de scurtare al ventriculul stâng **DA**;
- Calcularea debitului cardiac DA;	- Calcularea debitului cardiac **DA**;
Vaselor:	Vaselor:
- Carotida DA;	- Carotida **DA**;
- Vertebrale DA;	- Vertebrale **DA**;
- Arterial membrelor infirioare şi superioare DA;	- Arterial membrelor infirioare şi superioare **DA**;
- Venos membrelor infirioare şi superioare DA;	- Venos membrelor infirioare şi superioare **DA**;
FUNCŢIONALITĂŢI:	FUNCŢIONALITĂŢI:
Ajustare frecventa DA;	Ajustare frecventa **DA**;
Diapazon dinamic reglabil DA;	Diapazon dinamic reglabil **DA**;
Numar focusuri ≥ 4, ajustabil;	Numar focusuri ≥ 4, ajustabil;**DA în depndeţă de sondă si adîncime**
Pozitii de focalizare ≥15 puncte;	Pozitii de focalizare ≥15 puncte; **DA în depndeţă de sondă si**

	adîncime
Ajustare mape de culori ≥ 8;	Ajustare mape de culori ≥ 8; **DA**
Selectare automata a sondei la aplicarea presetului DA;	Selectare automata a sondei la aplicarea presetului **DA poate fi modificată in dependenţă de necesitatele utilizatorului.**;
Reglare GAIN DA;	Reglare GAIN **DA**;
TGC – cel putin 8 segmente DA;	TGC – cel putin 8 segmente **DA**;
Funcţie de optimizare automată a imaginii DA;	Funcţie de optimizare automată a imaginii **DA**;
Funcţie de imbunatatire a imaginii prin compunere spatiala DA;	Funcţie de imbunatatire a imaginii prin compunere spatiala **DA**;
Vizualizare simultană duală a imaginii DA;	Vizualizare simultană duală a imaginii D**DA**;
Compunerea imaginii pe baza de mai multe fascicule DA;	Compunerea imaginii pe baza de mai multe fascicule **DA**;
Reglarea semnalului acustic DA;	Reglarea semnalului acustic **DA**;
Măsurători in timp real si in freeze DA;	Măsurători in timp real si in freeze **DA**;
Pachet IMT (Intima Media Thickness) cu masurare automata;	Pachet IMT (Intima Media Thickness) cu masurare automata; **DA**
PAN/ZOOM imagine în timp real DA;	PAN/ZOOM imagine în timp real **DA**;
Zoom de înaltă definiţie şi zoom pe arii preselectate DA;	Zoom de înaltă definiţie şi zoom pe arii preselectate **DA**;
Imagine îngheţată DA;	Imagine îngheţată **DA**;
Spaţiul de stocare ≥ 250 GB SSD;	Spaţiul de stocare ≥ 250 GB SSD; **DA**
Memorie CINE ≥ 150sec DA;	Memorie CINE ≥ 150sec **DA**; **2 TB cine memory**
CD/DVD DA;	CD/DVD **DA**;
Porturi extensie:USB 3.0 ≥2 DA;	Porturi extensie:USB 3.0 ≥2 **DA**;
Video/Audio DA;	Video/Audio **DA**;
DICOM 3.0 DA;	DICOM 3.0 **DA**;
TRADUCTOARE NECESARE MĂSURĂRILOR ENUMERATE CU DIAPAZONUL MINIM:	TRADUCTOARE NECESARE MĂSURĂRILOR ENUMERATE CU DIAPAZONUL MINIM:
Sectorial 1.5~6MHz - 1 unitate;	Sectorial 1.5-4.6MHz - 1 unitate; **DA M5sc-RS**
Liniar 3.5~10MHz - 1unitate;	Liniar 3.0-10MHz - 1unitate; **DA 9L-RS**
Convex 2~6MHz - 1 unitate;	Convex 1,5~5MHz - 1 unitate; **DA C1-5-RS**
Ultrasonograful livrat să fie setat pentru lucru cu traductoarele livrate;	Ultrasonograful livrat să fie setat pentru lucru cu traductoarele livrate; **DA**
MONITOR FULL HD ≥ 15.6"	MONITOR FULL HD- 15.6" **DA**
Rezolutie ≥1920x1080;	Rezolutie - 1920x1080; **DA**
BUTOANE CONSOLA Configurabile DA,	BUTOANE CONSOLA Configurabile **DA**,
Posibilitatea efectuării Upgrade DA;	Posibilitatea efectuării Upgrade **DA**;
Baterie incorporata, cu durata de lucru ≥ 1.5h	Baterie incorporata, cu durata de lucru – 1 h **DA în dependeţă de modul de lucru (fără troleu) poate sa lucreze si pina la 1h**
Imprimanta termica alb/negru – 1buc;	Imprimanta termica alb/negru – 1buc; **DA**
DVD/CD RW incroporat DA;	DVD/CD RW incroporat **DA**;
TROLIU: 4 roti blocabile DA;	TROLIU: 4 roti blocabile **DA**;
Fixare securizata a ultrasonografului DA;	Fixare securizata a ultrasonografului **DA**;
Reglarea pe verticala cel putin ≥ 85-100 cm;	Reglarea pe verticala cel putin ≥ 85-100 cm; **DA**
Multiplicator pentru conectarea traductoarelor - cel putin 3 porturi;	Multiplicator pentru conectarea traductoarelor - **4 porturi; 3 tip RS + 1 tip 4D DA**
Suport pentru imprimanta DA;	Suport pentru imprimanta **DA**
Sursa de alimentare incorporată DA;	Sursa de alimentare incorporată **DA**
Alimentare curent alternativ 220V, 50Hz.	Alimentare curent alternativ 220V, 50Hz. **DA**
Să fie prezinte mostre video cu traductorul propus în vizualizarea Cordului : determinarea cavităţilor cordului; evaluarea cordului în M-mod cu determinarea fracţiei de ejecţie şi de scurtare; evaluarea valvelor cardiace,atât în regim de dopler continuu cât şi dopler color; evaluarea pericardului;	Să fie prezinte mostre video cu traductorul propus în vizualizarea Cordului : determinarea cavităţilor cordului; evaluarea cordului în M-mod cu determinarea fracţiei de ejecţie şi de scurtare; evaluarea valvelor cardiace,atât în regim de dopler continuu cât şi dopler color; evaluarea pericardului; **Vor fi prezetnate la cererea utilizatorului final sau video sau cofentia life de la producator.**
Să fie prezinte mostre video cu traductoaele propuse în vizualizarea Vaselor (aorta, artere, vaselor periferice) utilizînd în regim B-mod, dopler continuu cât şi dopler color;	Să fie prezinte mostre video cu traductoaele propuse în vizualizarea Vaselor (aorta, artere, vaselor periferice) utilizînd în regim B-mod, dopler continuu (*este valabil doar pentru sonda cardio*) cât şi dopler color; **Vor fi prezetnate la cererea utilizatorului final sau video sau cofentia life de la producator.**
CERINŢE DE CERTIFICARE:	CERINŢE DE CERTIFICARE:

Certificat CE sau declarație de conformitate CE cu anexele corespunzătoare pentru pentru produsele oferite, valabil, copie confirmată prin semnatura și ștampila Participantului.	Certificat CE sau declarație de conformitate CE cu anexele corespunzătoare pentru pentru produsele oferite, valabil, copie confirmată prin semnatura și ștampila Participantului. **DA**
Declarație de la Ofertant – confirmată prin semnatura și ștampila, în care să certifice termenul de garanție pentru echipament și accesorii nu mai mic de 24 luni din momentul instalării/darii în exploatare a bunului.	Declarație de la Ofertant – confirmată prin semnatura și ștampila, în care să certifice termenul de garanție pentru echipament și accesorii nu mai mic de 24 luni din momentul instalării/darii în exploatare a bunului. **DA**
Instalare de către participantul câștigător	Instalare de către participantul câștigător **DA**
Training pentru utilizatori la instalare și la solicitare – obligatoriu.Documente confirmative:	Training pentru utilizatori la instalare și la solicitare – obligatoriu.Documente confirmative:
Manual de service în una din limbile de circulație internațională (rusa/engleza).	Manual de service în una din limbile de circulație internațională (rusa/engleza). **DA**
Manual de utilizare cu prezentarea traducerii la momentul livrării în limba română.	Manual de utilizare cu prezentarea traducerii la momentul livrării în limba română. **DA**
Ghid rapid al utilizatorului în limba română.	Ghid rapid al utilizatorului în limba română. **DA**

DECLARATION OF CONFORMITY

Following the provisions of the medical devices directive 93/42/EEC, Annex II
and of the directive 2011/65/EU and of the directive 2014/53/EU

We

Manufacturer	EU Authorized Representative
GE Medical Systems (China) Co., Ltd.	**GE Medical Systems SCS**
No. 19, Changjiang Road Wuxi National Hi-Tech	283 rue de la Minière
Dev. Zone 214028 Jiangsu China	78530 BUC, France
Manufacturing site	Manufacturing site
GE Medical Systems (China) Co., Ltd.	**GE Medical Systems Ultrasound &**
No. 19, Changjiang Road Wuxi National Hi-Tech	**Primary Care Diagnostics, LLC**
Dev. Zone 214028 Jiangsu China	9900 Innovation Drive RP2138,
	Wauwatosa, WI 53226, USA

Declare under our sole responsibility that the class IIa device:

Vivid iq

Software version: 203

Ref: see addendum

GMDN Code: **40763**

UMDNS-Code: **15-976**

Classification rule (93/42/EEC Annex IX): 10

To which this declaration relates, is in conformity with the requirements of the medical devices directive 93/42/EEC, which apply to it and with the requirements of the directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and Directive 2014/53/EU for radio equipment (RED).

Wuxi, 11-Oct-2018

Yu Wen
Regulatory Affairs

This EC declaration of conformity is the first declaration for full production of Vivid iq version v203.

This conformity is based on the following elements:

    Reference of the Declaration: DOC1818295

- For the directive 93/42/EEC (MDD)
  - o Technical documentation, ref Technical File **DOC1818296**, of the product to which this declaration relates
  - o EC certificate: approval of full quality assurance system (Annex II of the directive 93/42/EEC) delivered by **TÜV Rheinland LGA Products GmbH** (Notified Body 0197) / Certificate N HD 60116081 0001.
  - o harmonized standards applied on the product to which this declaration relates:
    - ▪ EN 60601-1:2006/A1:2013 Medical electrical equipment –Part 1: General requirement for basic safety and essential performance
    - ▪ EN 60601-1-2: 2015 Medical electrical equipment –Part 1-2: General requirements for basic safety and essential performance –Collateral standard: Electromagnetic disturbances – Requirements and tests.
    - ▪ EN 60601-2-37:2008 Medical electrical equipment - Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment.
    - ▪ EN 62366-1:2015 Medical devices — Application of usability engineering to medical devices
    - ▪ EN62304:2006 + AC:2008 Medical device software — Software life-cycle processes
    - ▪ EN 1041:2008 + A1:2013 Information supplied by the manufacturer of medical devices
    - ▪ EN ISO 15223-1:2016 Medical devices - Symbols to be used with medical device labels /labelling
- For the directive 2011/65/EU (RoHS)
  - o Technical documentation, ref Technical File **DOC1818296**, of the product to which this declaration relates
- For the directive 2014/53/EU (Radio Equipment Directive)
  - o Technical documentation, ref Technical File **DOC1818296**, of the product to which this declaration relates
  - o harmonized standards applied on the product to which this declaration relates:
    - ▪ Health & Safety (Directive 2014/53/EU Art. 3(1)(a)): EN 60601-1-2: 2015; Directive 93/42/EEC; Directive 2014/30/EU; EN 60601-1: 2006 +A1:2013
    - ▪ EMC (Directive 2014/53/EU Art.3(1)(b)): EN 60601-1-2: 2007 +AC: 2010 Section 6; Directive 93/42/EEC; Directive 2014/35/EU
    - ▪ Radio Spectrum (Directive 2014/53/EU Art.3(2)): EN 300 328 v2.1.1 (2016-11); EN301 893 v1.8.1 (2015-03) + EN 301 893 v2.1.1 (clause 4.2.8 only) -as declared in DOC2007709.

Wuxi, 11-Oct-2018

Yu Wen
Regulatory Affairs

Yu Wen

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ADDENDUM TO THE DECLARATION OF CONFORMITY DOC1818295

Vivid iq – Accessories and Components

CONSOLE Name / with description	GE Part	REF # [1]	Hcat# [2]
Vivid iq R3 PoC	5764878-2 +H48012BZ	Vivid iq v203	H48032BD
Vivid iq R3	5780697-2 +H48012BZ	Vivid iq v203	H48032BA
Vivid iq Premium	5780707-2 +H48012BZ	Vivid iq v203	H48032BB
Vivid iq 4D	5780717-2 +H48012BZ	Vivid iq v203	H48032BC
`Vivid iq R3 Generic console	5795073 + 5732275 +5727355+ 5750135-2 +5746109+ 5262365	Vivid iq v203	H48012BZ

OPTIONS	GEMS Cat # [2]
6VT Biplane or Triplane	H48912AD
4DAutoAVQ	H48912AL
4DAutoLVQ	H48912AM
4DAutoMVQ	H45591AD
4D marker	H45601GK
DicomConnectivityPackage	H48912AN
DICOMMediaViewer	H48912AP
AdvQScan	H48912AS
Qanalysis	H48912AT
LVOContrast	H48912AY
AFI 2.0	H45601GL
Smart stress	H48922AB
Auto2DEF 2.0	H45601GH
ICEProbeInterfaceModule	H48942AP
CartoSound interface	H48942AR
Tricefy uplink	H45601GW
View-X	H45591AK
Qpath connectivity	H48062BZ

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Power Cord	GEMS Cat # [2]
Power Cord Europe	H48482AF
Power Cord China	H48482AK
Power Cord India	H48482AH
Power Cord Argentina	H48482AC
Power Cord UK	H48482AG
Power Cord Denmark	H48482AM
Power Cord Switzerland	H48482AD
Power Cord Australia	H48482AE
Power Cord USA	H48482AL
Power Cable Brazil	H48482AN
Power Cord Israel	H48482AJ
Power Cord Japan	H48482AB
ECG Cable[3]	GEMS Cat # [2]
Viq External ECG Cable	H48972AG
ECG cable Kits EU	H48952AB
ECG cable Kits US	H48952AC
Lead electr neo AHA 600	H45571RJ
Lead electr neo IEC 600	H45571RK
Ped ECG Adapter	H48952AS
Hard Copy Manual	GEMS Cat # [2]
AIUM booklet	H48542LD
Vivid iq R3 ARM EN	H48062BS
Vivid iq R3 Basic Service Manual	H48062BW
Vivid iq UM + RN EN	H48032BJ
Vivid iq e-manual kit	H48012BT
Vivid iq cart user instruction	H48952AA
Vivd iq Manual CD	H48922AP
Vivid iq Advanced Reference Manual English	H48922AR
Vivid iq Advanced Reference Manual French	H48922AS

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Vivid iq Basic Service Manual	H48922AT
Vivid iq User Manual English Version	H48922AW
Vivid iq User Guide English Version	H48922AY
Vivid iq User Manual + Release Notes English Version	H48922AZ
Vivid iq User Manual + Release Notes French Version	H48932AA
Vivid iq User Manual + Release Notes Spanish Version	H48932AB
Vivid iq User Manual + Release Notes German Version	H48932AC
Vivid iq User Manual + Release Notes Italian Version	H48932AD
Vivid iq User Manual + Release Notes Dutch Version	H48932AE
Vivid iq User Manual + Release Notes Brazilian Portuguese Version	H48932AF
Vivid iq User Manual + Release Notes Estonian Version	H48932AG
Vivid iq User Manual + Release Notes Slovenian Version	H48932AH
Vivid iq User Manual + Release Notes Japanese Version	H48932AJ
Vivid iq User Manual + Release Notes Simplified Chinese Version	H48932AK
Vivid iq User Manual + Release Notes Swedish Version	H48932AL
Vivid iq User Manual + Release Notes Korean Version	H48932AM
Vivid iq User Manual + Release Notes Russian Version	H48932AN
Vivid iq User Manual + Release Notes Polish Version	H48932AP
Vivid iq User Manual + Release Notes Greek Version	H48932AR
Vivid iq User Manual + Release Notes Hungarian Version	H48932AS
Vivid iq User Manual + Release Notes Slovakian Version	H48932AT
Vivid iq User Manual + Release Notes Czech Version	H48932AW
Vivid iq User Manual + Release Notes Turkish Version	H48932AY
Vivid iq User Manual + Release Notes Danish Version	H48932AZ
Vivid iq User Manual + Release Notes Norwegian Version	H48942AA
Vivid iq User Manual + Release Notes Finnish Version	H48942AB
Vivid iq User Manual + Release Notes Bulgarian Version	H48942AC
Vivid iq User Manual + Release Notes Romanian Version	H48942AD
Vivid iq User Manual + Release Notes Croatian Version	H48942AE
Vivid iq User Manual + Release Notes Lithuanian Version	H48942AF

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Yu Wen
Regulatory Affairs

Yu Wen

This EC declaration of conformity is the first declaration for full production of Vivid iq version v203.

Reference of the Declaration: DOC1818295

Vivid iq User Manual + Release Notes Latvian Version	H48942AG
Vivid iq User Manual + Release Notes Serbian Version	H48942AH
Vivid iq User Manual + Release Notes European Portuguese Version	H48942AJ
Vivid iq User Manual + Release Notes Ukrainian Version	H48942AK
Vivid iq User Manual + Release Notes Indonesian Version	H48942AL
Vivid iq User Manual + Release Notes Kazakh Version	H48942AM
TEE Probes User Manual Eng,Fre,Ger,Chi	H45531RA
TEE Probes User Manual Italian	H45531RD
TEE Probes User Manual Spanish	H45531RE
TEE Probes User Manual Port, Europe	H45581AN
TEE Probes User Manual Port, Brazil	H45531RF
TEE Probes User Manual Japanese	H45531RG
TEE Probes User Manual Swedish	H45531RJ
TEE Probes User Manual Norwegian	H45531RK
TEE Probes User Manual Danish	H45531RL
TEE Probes User Manual Polish	H45531RM
TEE Probes User Manual Finnish	H45531RN
TEE Probes User Manual Greek	H45531RP
TEE Probes User Manual Russian	H45531RQ
TEE Probes User Manual Dutch	H45531RR
TEE Probes User Manual Hungarian	H45541PL
TEE Probes User Manual Slovakian	H45541PM
TEE Probes User Manual Romanian	H45541PN
TEE Probes User Manual Czech	H45541PP
TEE Probes User Manual Latvian	H45541PQ
TEE Probes User Manual Lithuanian	H45541PR
TEE Probes User Manual Turkish	H45541PS
TEE Probes User Manual Estonian	H45541PT
TEE Probes User Manual Korean	H45541PW
TEE Probes User Manual Serbian	H45551ZQ

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This EC declaration of conformity is the first declaration for full production of Vivid iq version v203.

TEE Probes User Manual Bulgarian	H45551ZR
TEE probes User manual Croatian	H45561RH
TEE Probes User Manual Indonesian	H45571CG
TEE Probes User Manual Slovenian	H45581PT
TEE Probes User Manual Ukraine	H45581PL
Biopsy	**GEMS Cat # [2]**
9L BIO GUIDE STARTER KIT	H4906BK
12L-RS Biopsy Starter Kit	H40432LC
3SP MULTI-ANGLE BIOPSY	H46222LC
C1-5 Biopsy Starter Kit	H40432LE
4C BIOPSY BRACKET	E8385NA
E721 STARTER KIT	E8385MJ
ML6-15 Biopsy Starter Kit	H40432LJ
M5S BIOPSY KIT	H45561FC
HW Option	**GEMS Cat # [2]**
H48952AR	ICECord-RS W. Ferrite filter
H48722AM	Vivid iq generic cart
Vivid iq multi probe port box	H48722AN
Charge box w. 3 batteries	H48722AR
TEE CLEANING SYSTEM	H45551NK
TEE STORAGE RACK	H45551NM
ADULT TEE CLIP-ON BITE GUARD	H45511EE
ADULT TEE CLIP-ON BITE GUARD OPR	H45521CB
PEDIATRIC TEE CONVENTIONAL BITE GUARD	H45521JG
ADULT TEE CONVENTIONAL BITE GUARD	H45521JH
ADULT TEE SCANHEAD PROTECTION COVER	H45521CK
PEDIATRIC TEE SCANHEAD PROTECTION COVER	H45541RN
Bite Hole Indicator	H45531HS
View-X	H45591AK
TEE Bag	H48942AS

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Vivid iq Adapter	H48922AE
Vivid iq KBD Film	H48952AT
Vivid iq Vet kit	H48972AJ
Rolling bag	H48942AN
FOOT SWITCH -MED GP26	H41642LS
LITEON eBAU108 DVDRW Kit	H48532LJ
NETGEAR A6210 USB Adapter	H48392AW
B W Printer shelf	H48942AW
P2D holder	H48942AY
Cartosound interf. W. Video	H48942AZ
Vivid Compact Battery	H48942AT
I/O [3]	GEMS Cat # [2]
BW PRINTER UP-D898MD USA	H48492AF
BW PRINTER UP-D898MD EU	H48492AG
BW PRINTER UP-D898MD CHN	H48492AH
BW PRINTER UP-D898MD JPN	H48492AJ
BW PRINTER UP-D898MD BRA	H48492AK
USB MEMORY STICK	H48962LC
1TB mobile HDD	H48492AB
Isolated HDMI Splitter	H48982AN
HDMI to s-video adaptor	H48572AB
Upgrade kits: [2]	GEMS Cat # [2]
Viq Premium Upgrade	H48912AH
Viq 4D Upgrade	H48912AJ
LPC Up to PoC	H48982AJ
LPC Up to 4D	H48952AW
Veterinary options	GEMS Cat # [2]
Rodent SW option	H48922AD
Probe Vet Label	H48992LR
Vivid iq Vet kit (contain Veterinary User Manual Addendum)	H48972AJ

Wuxi, 11-Oct-2018   Yu Wen   *Yu Wen*
                                     Regulatory Affairs

This EC declaration of conformity is the first declaration for full production of Vivid iq version v203.

PROBES w. Accessories [3]	TYPE [4]	GEHC Cat # [2]
4C-RS	BF	H4000SR
3SC-RS	BF	H45041DL
8C-RS	BF	H40402LS
6S-RS	BF	H45021RP
P2D	BF	H45551CA
6Tc-RS	BF	H45551ZE
9L-RS	BF	H40442LL
12L-RS	BF	H40402LY
12S-RS	BF	H44901AB
9T-RS	BF	H45531YM
L8-18i-RS	BF	H40462LF
C1-5-RS	BF	H40462LA
E8Cs-RS	BF	H48062AF
M5Sc-RS	BF	H44901AG
ML6-15-RS	BF	H40462LM
6VT-D	BF	H45581BJ

Notes used in the table :
1. GE Part # identifies the device(s) in the manufacturer's design, manufacturing and service documentation. REF is usually affixed to the device(s) in the form of a product identification or model on the rating label.
2. GEHC Cat # identifies the device(s) in the manufacturer's catalog and is usually included on commercial documents like sale contract, order processing documents and shipping documents.
3. I/O-devices may carry the CE-mark and, when applicable, the Notified Body number corresponding to the EC Declaration under which the products are CE-marked by their manufacturer. **GE Medical Systems (China) Co., Ltd** has verified the mutual compatibility of the devices in combination with Vivid T8, and included relevant information to users with the Vivid T8 instructions for use. This activity was subject to appropriate methods of internal control and inspection.
4. Type identifies the degree of protection against electric shock for each probe, as labeled on the probe itself.

Wuxi, 11-Oct-2018   Yu Wen   *Yu Wen*
                                           Regulatory Affairs

This EC declaration of conformity is the first declaration for full production of Vivid iq version v203.

Benannt durch/Designated by
Zentralstelle der Länder
für Gesundheitsschutz
bei Arzneimitteln und
Medizinprodukten
BS-MDR-099

Product Service

EU Quality Management System Certificate (MDR)

Pursuant to Regulation (EU) 2017/745 on Medical Devices, Annex IX Chapters I and III
(Class IIa and Class IIb Devices)

No. G10 075707 0078 Rev. 00

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

The Certification Body of TÜV SÜD Product Service GmbH certifies that the manufacturer has established, documented and implemented a quality management system as described in Article 10 (9) of the Regulation (EU) 2017/745 on medical devices. Details on device categories covered by the quality management system are described on the following page(s).
The Report referenced below summarises the result of the assessment and includes reference to relevant CS, harmonized standards and test reports. The conformity assessment has been carried out according to Annex IX Chapter I and III of this regulation with a positive result.
The quality management system assessment was accompanied by the assessment of technical documentation for devices selected on a representative basis.
The certified quality management system is subject to periodical surveillance by TÜV SÜD Product Service GmbH. The surveillance assessment shall also include an assessment of the technical documentation for the device or devices concerned on the basis of further representative samples.

Report No.: 713175299

Preceding certificate No.: this certificate is issued for the first time

Valid from: 2020-05-14
Valid until: 2025-05-13

Date of initial issuance / Rev.00: 2020-05-13

Christoph Dicks
Head of Certification/Notified Body

Issue date: 2020-05-14

TÜV SÜD Product Service GmbH is Notified Body with identification no. 0123
TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

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Zentralstelle der Länder
für Gesundheitsschutz
bei Arzneimitteln und
Medizinprodukten
www.zlg.de
BS-MDR-099

Product Service

EU Quality Management System Certificate (MDR)

Pursuant to Regulation (EU) 2017/745 on Medical Devices, Annex IX Chapters I and III
(Class IIa and Class IIb Devices)

No. G10 075707 0078 Rev. 00

Device Group
Echographic Instruments

Risk Classification
IIa

**The validity of this certificate
depends on conditions and/or
is limited to the following:**   None

**Revision History including
Changes:**   00 / 2020-05-13 / 713175299

Page 2 of 2
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REGISTRUL DE STAT AL DISPOZITIVELOR MEDICALE

Tip	Denumire
I.2. Declarația de conformitate CE	Declaratie de conformitate CE
I.3. Certificatul CE	Certificat CE

Введите текст для поиска...

Nr	Denumire	Den.comerc.	Model	Nr. catalog	Tara	Producatorul	Reprezentant	Ordin	Data	Cod vamal
			vivid iq pre							
DM000193192	SISTEM DE IMAGISTICĂ CARDIOVASCULA CU ULTRASUNETE		Vivid iq Premium	5780707-2, H48012BZ	China	GE MEDICAL SYSTEMS (CHINA) CO., LTD.	INTERMED S.R.L.	A07.PS-01.Rg04-378	26-12-2018	
DM000122016	SISTEM DE IMAGISTICĂ CU ULTRASUNETE		VIVID IQ PREMIUM	H48912AB	China	GE MEDICAL SYSTEMS (CHINA) CO., LTD.	INTERMED S.R.L.	A07.PS-01.Rg04-149	11-06-2018	

✓ ♟ Содержит([Model], 'vivid iq pre')   Очистить

Certificate

**The Certification Body of
TÜV Rheinland LGA Products GmbH**

hereby certifies that the organization

GE ULTRASOUND KOREA, Ltd.
9, Sunhwan-ro 214beon-gil, Jungwon-gu
SEONGNAM-SI, GYEONGGI-DO
Republic of Korea

has established and applies a quality management system for medical devices
for the following scope:

(see attachment for scope and additional site included)

Proof has been furnished that the requirements specified in

EN ISO 13485:2016

are fulfilled. The quality management system is subject to yearly surveillance.

Effective Date:	2020-03-17
Certificate Registration No.:	SX 60146260 0001
An audit was performed. Report No.:	32090188 001
This Certificate is valid until:	2021-11-04

Certification Body

(DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-14169-01-02

Date 2020-03-17

Balazs Bozsik

TÜV Rheinland

LGA Products GmbH

Tillystraße 2, 90431 Nürnberg

Attachment to
Certificate
Registration No.:   SX 60146260 0001
Report No.:   32090188 001

Organization: **GE ULTRASOUND KOREA, Ltd.**
                     9, Sunhwan-ro 214beon-gil, Jungwon-gu
                     SEONGNAM-SI, GYEONGGI-DO
                     Republic of Korea

Scope: Design and Development, Manufacture and Final Test of
                Ultrasound Diagnostic Devices and Systems

                Site Included:
                GE Ultrasound Korea, Ltd.
                65-1,Sangdaewon-dong, Jungwon-gu
                Seongnami-si, Gyeonggi-do
                462-120 Republic of Korea

                Design and Development, Manufacture and Final Test of
                Ultrasound Diagnostic Devices and Systems

Certification Body

((DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-14169-01-02

Balazs Bozsik

Date: 2020-03-17

Vivid™ *iq*
Ultra Edition

Cardiovascualar Ultrasound
Probe guide

Comprehensive cardiovascular scanning.

Vivid™ *iq* Ultra Edition features a wide range of applications that help increase the system's versatility. The system's probes feature a miniaturized RS connector, that helps maximize ease of use and patient comfort. A lightweight probe cable helps minimize strain for the user, facilitating probe placement. There is also a D connector on the cart.

Vivid

gehealthcare.com/vivid

Cat #	Main Applications	Description	Footprint	Biopsy Guide	Scanner Frequency Range	Field of View	Depth of Field
Sector							
H45041DL	Cardiac, Pediatric, Abdominal, Fetal/Obstetrics, Adult Cephalic, Transcranial	Phased Array	18 x 24 mm	Multi-angle disposable, with a reusable bracket	1.3 - 4.0 MHz	120°	30 cm
H44901AG	Cardiac, Pediatric, Abdomeninal, Fetal/Obstetrics, Transcranial, Adult Cephalic	XDclear™ Active Matrix Single Crystal Phased Array	18 x 27 mm	Multi-angle disposable, with a reusable bracket	1.5 - 4.6 MHz	120°	30 cm
H45021RP	Pediatric, Neonatal Cephalic, Fetal/Obstetrics, Abdominal	Phased Array	17 x 24 mm		2.0 - 7.0 MHz	120°	30 cm
H44901AB	Pediatric, Abdominal, Neonatal Cephalic	Phased Array	13 x 18 mm		4.2 - 12.0 MHz	90°	14 cm

3Sc-RS

M5Sc-RS[1]

6S-RS

12S-RS

[1] Probe or Feature only available for Premium and 4D configurations

Cat #	Main Applications	Description	Footprint	Biopsy Guide	Scanner Frequency Range	Field of View	Depth of Field
Transesophageal							
H45551ZE	Cardiac, Transesophageal	TEE	12 x 14 mm with length of 45 mm		3.0 - 8.0 MHz	90°	30 cm
H45581BJ	Cardiac, Transesophageal	Active Matrix 4D Volume TEE	14 x 13 mm with length of 45 mm		3.0 - 8.0 MHz	90°	30 cm
H45531YM	Cardiac, Transesophageal	TEE	11 x 8 mm with length of 35 mm		3.6 - 10.0 MHz	90°	14 cm
Linear							
H40462LM	Small Organs, Peripheral Vascular, Pediatrics, Neonatal Cephalic, Abdominal, Musculoskeletal	Wide Band Linear Transducer with Active Matrix Array Technology	61 x 16 mm	Multi-angle, reusable bracket, disposable sleeve	5.0 - 15.0 MHz	50 mm	10 cm
H40442LL	Musculoskeletal, Small Organs, Peripheral Vascular, Abdominal, Pediatrics, Neonatal Cephalic	Linear Array	14 x 53 mm	Multi-angle, reusable bracket, disposable sleeve	2.0 - 10.0 MHz	44 mm	16 cm
H40402LY	Musculoskeletal, Small Organs, Peripheral Vascular, Abdominal, Pediatrics, Neonatal Cephalic	Linear Array	13 x 47 mm	Multi-angle and out-of-plane; reusable bracket, disposable sleeve	4.0 - 13.0 MHz	38 mm	12 cm

6Tc-RS

6VT-D[1]

9T-RS

ML6-15-RS[1]

9L-RS

12L-RS

[1] Probe or Feature only available for Premium and 4D configurations

Cat #	Main Applications	Description	Footprint	Biopsy Guide	Scanner Frequency Range	Field of View	Depth of Field
Convex							
H4000SR	Abdominal, Pediatric, Fetal/Obstetrics, Musculoskeletal	Curved Array	18 x 66 mm	Multi-angle disposable, with a reusable bracket	1.5 - 5.0 MHz	58°	33 cm
H40402LS	Cardiac, Abdominal, Pediatric, Transcranial, Neonatal Cephalic, Peripheral Vascular, Musculoskeletal, Small Organ	Curved Array	18 x 66 mm		3.5 - 10.0 MHz	131°	14 cm
H40462LA	Abdominal, Fetal/Obstetrics, Pediatrics, Musculoskeletal	Curved Array	17 x 69 mm	Multi-angle disposable, with a reusable bracket	1.5 - 5.0 MHz	70°	33 cm
Doppler							
H45551CA	Cardiac	Pencil Probe	16 mm		1.9 - 2.1 MHz		
Special							
H48062AF	Fetal/Obstetrics, Transrectal, Transvaginal, Abdominal	Endo Curved Array	19 x 24 mm	Fixed-angle, disposable	3.5 - 10.0 MHz	168°	14 cm
Intraoperative							
H40462LF	Peripheral Vascular, Small Organs, Musculoskeletal, Intraoperative	Linear IO Transducer	11 x 35 mm		4.5 - 18 MHz	25 mm	10 cm

4C-RS[2]

8C-RS

C1-5-RS[1]

P2D

E8Cs-RS

L8-18i-RS[1]

[1] Probe or Feature only available for Premium and 4D configurations
[2] Probe or Feature not available for Premium and 4D configurations

	Cat #	Main Applications	Description	Footprint	Biopsy Guide	Scanner Frequency Range	Field of View	Depth of Field
ICE								
Catheter Cable for ICE	H45021YE							
AcuNav 8F*	†	Intracardiac and Intraluminal	Catheter	8 Fr diameter		4.2 - 11.5 MHz	90°	16 cm
AcuNav 10F*	†	Intracardiac and Intraluminal	Catheter	10 Fr diameter		4.2 - 11.5 MHz	90°	16 cm
SOUNDSTAR 3D 10F G*	†	Intracardiac and Intraluminal	Catheter	10 Fr diameter		4.2 - 11.5 MHz	90°	16 cm
SOUNDSTAR eco 10F G*	†	Intracardiac and Intraluminal	Catheter	10 Fr diameter		4.2 - 11.5 MHz	90°	16 cm
SOUNDSTAR eco 8F G*	†	Intracardiac and Intraluminal	Catheter	8 Fr diameter		4.2 - 11.5 MHz	90°	16 cm

[1] Probe or Feature only available for Premium and 4D configurations
† Distributed by Biosense Webster Inc.
* Not available in all countries. Please contact Biosense Webster directly.

Transcducers

Legend: ■ = Supported on this probe □ = Not supported on this probe

Modes and Features	3Sc-RS	M5Sc-RS[1]	6S-RS	12S-RS	6Tc-RS	6VT-D[1]	9T-RS	9L-RS	12L-RS
2D	■	■	■	■	■	■	■	■	■
4D[5]	□	□	□	□	□	■	□	□	□
AdvQScan (Strain, SR, TSI)[1,3]	■	■	■	■	■	■	■	□	□
AdvVascular (B-Flow, BFI)[4]	■	■	■	■	□	□	□	■	■
AFI[1,3]	■	■	■	■	■	■	■	□	□
AMM	■	■	■	■	■	■	■	■	■
Angio[4]	■	■	■	■	□	□	□	■	■
Auto2DEF[3]	■	■	■	■	■	■	■	□	□
AFI RV	■	■	■	■	■	■	□	□	□
AFI LA	■	■	■	■	■	■	□	□	□
AI Auto Measure - 2D	■	■	■	■	■	■	□	□	□
AI Auto Measure - Spectrum Recognition	■	■	■	■	■	■	□	□	□
Biplane or Triplane[1]	■	■	■	■	■	□	■	□	□
Color	■	■	■	■	■	■	■	■	■
Curved AMM[1]	■	■	■	■	■	■	■	■	■
CW Doppler	■	■	■	■	■	■	■	□	□
Smart Stress[3]	■	■	■	■	■	■	■	□	□
Harmonics	■	■	■	■	■	■	■	■	■
IMT	□	□	□	□	□	□	□	■	■
LOGIQ View[1]	□	□	□	□	□	□	□	■	■
LVO Contrast[1,3]	■	■	□	□	■	■	□	□	□
M-Mode	■	■	■	■	■	■	■	■	■
PW Doppler	■	■	■	■	■	■	■	■	■
Q Analysis	■	■	■	■	■	■	■	■	■
Rodent	□	□	□	■	□	□	□	□	□
Tissue Tracking[3]	■	■	■	■	■	■	■	□	□
TVI[2]	■	■	■	■	■	■	■	□	□
Virtual Apex	■	■	■	■	■	■	■	□	□
Virtual Convex	□	□	□	□	□	□	□	■	■

■ Supported on this probe
□ Not supported on this probe

[1] Probe or Feature only available for Premium and 4D configurations
[2] Probe or Feature not available for Premium and 4D configurations
[3] Only for cardiac applications/presets
[4] Only for non-cardiac applications/presets
[5] Probe or Feature only available for 4D configuration

Transducers	ML6-15-RS[1]	L8-18i-RS[1]	4C-RS[2]	C1-5-RS[1]	8C-RS	E8Cs-RS	P2D	ICE[*]
2D	■	■	■	■	■	■		■
4D[4]								
AdvQScan (Strain, SR, TSI)[1,3]								■
AdvVascular(B-Flow, BFI)[4]	■	■	■	■	■	■		
AFI[1,3]								■
AMM	■	■	■	■	■	■		■
Angio[4]	■	■	■	■	■	■		
Auto2DEF[3]								■
AFI RV								
AFI LA								
AI Auto Measure - 2D								
AI Auto Measure - Spectrum Recognition								
Biplane or Triplane[1]								
Color	■	■	■	■	■	■		■
Curved AMM[1]	■	■	■	■	■	■		
CW Doppler							■	■
Smart Stress[3]								
Harmonics	■	■	■	■	■	■		■
IMT	■	■						
LOGIQ View[1]	■	■						
LVO Contrast[1,3]								
M-Mode	■	■	■	■	■	■		■
PW Doppler	■	■	■	■	■	■		■
Q Analysis	■	■	■	■	■	■		■
Rodent		■						
Tissue Tracking[3]								■
TVI[3]								■
Virtual Apex								■
Virtual Convex	■	■						

Modes and Features

■ Supported on this probe

☐ Not supported on this probe

[1] Probe or Feature only available for Premium and 4D configurations
[2] Probe or Feature not available for Premium and 4D configurations
[3] Only for cardiac applications/presets
[4] Only for non-cardiac applications/presets
[5] Probe or Feature only available for 4D configuration
[*] Not available in all countries. Please contact Biosense Webster directly.

About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter - great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

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JB80631XX

Vivid iq
Premium*

Product Description

The Vivid™iq combines the proven high performance of the Vivid product line with an ultra-modern and lightweight laptop. The Vivid iq is a comprehensive digital color flow Doppler ultrasound system. It is designed for cardiac and shared service imaging with support for the following applications: cardiac, pediatric, fetal/obstetrics, abdominal, transesophageal, intracardiac and Intraluminal, intraoperative, peripheral vascular, adult cephalic, neonatal cephalic, small organ, musculoskeletal conventional, musculoskeletal superficial, transcranial, transrectal, transvaginal, and interventional guidance.

System Architecture

GE's exclusive, patented, beamforming technology provides the power for this multi-purpose ultrasound system. Using both coherent and harmonic image processing, the system provides computational power, ease of imaging, workflow flexibility and product upgradeability.

The Vivid iq excels in the following areas:

Exceptional image quality on the Vivid iq is created through ultra-definition clarity filtering and virtual apex (larger field-of-view) for the FPA probes. **Coded Harmonics** – Produces excellent quality images from even difficult-to-image patients.

Ergonomic Design – The Vivid iq's new and improved ergonomic design is based on real users' feedback and extensive testing. A **new ergonomic user interface design** makes the Vivid iq an easy-to-learn and highly productive system for experienced and novice users, and similarly for right- and left-hand scanning users alike. The combination of the full touch screen control, **new trackpad swipe and click gestures**, and a conventional user control panel helps operators maintain their wrist on an **ergonomic wrist rest,** and focus on the patient and ultrasound images during the exam. Other ergonomic features include a touch LCD monitor with easily adjustable viewing and typing angles and a height-adjustable cart for comfortable standing and sitting positions.

Extreme productivity in 2D imaging is provided by the GE's exclusive technology delivering auto optimized excellent image quality with little manipulation, along with a host of **new automated quantification tools** such as the **new AI-based auto measurements for 2D and Doppler modes**, 2D Auto EF 3.0, AFI 3.0, AFI for LA, and AFI for RV.

Portability and Flexible Workflow – The Vivid iq's innovative compact design and touch user interface is ultra portable and lightweight. The battery option provides additional scanning time without a power supply and instant boot up from standby mode. Additionally, the Vivid iq uses the proven **raw data format technology** that allows for advanced processing on archived images by applying many of the same scan controls and advanced quantitative tools as are available during the original exam.

General Specifications

Dimensions and Weight

- Height: 64 mm (2.5")
  with feet: 73 mm (2.87'')
- Width: 390 mm (15.35")
- Depth: 362 mm (14.25")
- Weight with battery: 5.2 kg (11.5 lbs)

Electrical Power

- Voltage: 100-240 VAC
- Frequency: 50/60 Hz
- Power: max. 130 VA
- Scanning time from battery without power supply is approximately one hour[1]
- An extended battery is integrated within the Vivid iq cart and provides approximately three additional scanning hours[1]

Operating System

- Windows® 10

Vivid iq Premium is a configuration of the Vivid iq ultrasound system with software version v204.

1 *Depending on operation modes used and battery status.*

Console Design

- Laptop style
- ECG port
- Integrated solid state drive
- Multiple USB ports (front/back)
- Integrated speakers for premium sound
- CPU – Intel duo core
- DC power input
- USB interface (5)
- HDMI interface
- ECG
- LAN 10/100/1000 base

Cart Dimension

- Height: 835 - 1115 mm (32.9" - 43.9")
- Width: 524.9 mm (20.7")
- Depth: 552.3 mm (21.7")
- Weight: 41 kg (90 lbs.)

Cart Design

- Three USB ports including one isolated USB interface
- Six probe holders
- Four probe cable hooks
- Charge box (optional) – to charge up to three batteries and to scan more than 180 min with four fully charged batteries
- Multi-probe box (optional) – three RS, one DLP to support 6VT-D

User Interface

Operator Panel

- Innovative track pad design – a new track pad provides new ergonomic gestures, including two-finger swipe to control Depth and Gain and Click to Set, allowing the user's arm to stay rested for a significant time during the exam
- Ergonomic simplified hard key layout with ergonomic design around the track pad
- Interactive back-lighting of application-specific push buttons – adjustable back-light intensity

- Easy-to-learn user interface with intelligent touch keyboard
- Image manager on the touch screen for quick review of image clipboard contents and easy export of images and loops to remote archives or media

Touch Screen

- Full touch ability including tap, double-tap, swipe, and pinch gestures, for fast and highly responsive user experience
- 15.6" ultra-high-resolution, wide screen format, color, multi-touch LCD screen
- On-screen touch keyboard with support for characters in 14 languages
- Interactive user-configurable short-cut software menu
- Application-specific operator and sidebar touch menu controls operated by finger tapping and swiping
- Overall gain, depth and zoom control bar on the touch for easy adjustment
- Touch-screen control of TGC sliders

Display Monitor

- 15.6" wide screen full High-Definition (HD) flicker-free LCD display with full touch ability
- 16.7 million simultaneous colors available
- Ergonomic FlexFit design with adjustable typing angle and flexible view angle
- Resolution: 1920 x 1080 pixels, full HD
- Fold down and lock mechanism for transportation
- Screen can be adjusted in different angles for scanning mode, typing mode and closing, allowing to optimize the viewing angle in each position
- Backlight adjustable
- Selectable big image size to use more screen area for the ultrasound image for better visibility from a distance
- Adaptive video formats and resolution

System Overview

Applications (probe dependent)

- Cardiac
- Transesophageal
- Intracardiac and intraluminal
- Intraoperative
- Peripheral vascular
- Fetal/OB
- Abdominal adults
- Pediatric
- Small organ
- Neonatal cephalic
- Adult cephalic
- Musculoskeletal conventional
- Musculoskeletal superficial
- Transcranial
- Transrectal
- Transvaginal

Operating Modes

- 2D tissue
- 2D color flow
- 2D angio flow
- Color M-mode
- Tissue velocity M-mode
- Continuous wave Doppler
- Tissue M-mode
- Pulsed wave Doppler
- Anatomical M-mode
- Curved anatomical M-mode
- Tissue velocity imaging
- Tissue tracking
- Tissue synchronization imaging
- Strain imaging
- Strain rate imaging
- Tissue velocity Doppler
- Blood flow imaging
- B-flow
- 2D stress
- Automated Function Imaging (AFI) 3.0 (optional)
- AFI LA

- AFI RV
- Auto EF 3.0
- AI auto measure – 2D
- AI auto measure – spectrum recognition
- Virtual convex
- Virtual apex
- Bi-plane
- Tri-plane
- Coded phase inversion
- Compound imaging
- Extended field-of-view (LOGIQ™ View)
- 4D full-volume scanning – single-beat and multi-beat
- Scan coach

Scanning Methods
- Electronic sector
- Electronic volume
- Electronic convex
- Electronic linear
- CW pencil

Transducer Types
- Sector phased array
- Convex array
- Linear array
- Single crystal matrix array
- 2D matrix array

Peripheral Options
- DVDRW
- Color video printer
- B/W video printer with optional inverted background printing, allowing for environmentally sensitive ink saving
- USB memory stick
- One TB USB hard drive
- HDMI cable
- Video converter providing electrically isolated video signals for external monitors
  - digital Full HD 1920 x 1080
  - analogue VGA 800 x 600

- Three-pedal configurable footswitch
- Rolling bag
- Ergonomic wrist rest

Accessories (options)
- Interface cable for external ECG
- ECG adapter for DIN-type pediatrics electrode leads

Display Modes
- Live and stored display format: full size and split screen, both with thumbnails, for still and cine
- Instant-review screen displays 12 simultaneous loops/images for a quick study review
- Selectable display configuration of duplex and triplex modes: side-by-side or top-bottom during live, digital replay and clipboard image recall
- Single-, dual- and quad-screen view
- Simultaneous capability
  - 2D+PW
  - 2D+CW (with 6VT-D probe)
  - 2D + CFM/TVI + PW
  - 2D + CFM + CW (with 6VT-D probe)
  - 2D + CFM/Angio/TVI/SRI/TT/SI/TSI
  - 2D + M/AMM/CAMM
  - 2D + CFM/Angio/TVI/SRI/TT/SI/TSI + M/AMM/CAMM
  - Real-time duplex or triplex mode (with 6VT-D probe)
  - Compound + M/CFM/PW
  - 2D + bi-plane (with 6VT-D probe)
  - 2D + bi-plane + CFM/AMM/CAMM (with 6VT-D probe)
  - 2D + tri-plane (with 6VT-D probe)
  - 2D + tri-plane + CFM/AMM/CAMM (with 6VT-D probe)
  - 2D + color split screen (simultaneous mode)
- Selectable alternating modes
  - 2D or compound + PW
  - 2D + CW
  - 2D or compound + CFM/PW
  - 2D + CFM + CW
- Multi-image (split/quad screen)
  - Live and/or frozen
  - Independent cine playback

- Timeline display
  - Independent 2D (or compound) + PW/CW/M display
  - A choice of display formats with various sizes of 2D + PW/CW/M
- Top/bottom selectable format
- Side/side selectable format

Display Annotation
- Patient name
- Patient ID
- Age, sex and birth date
- Hospital name
- Date format: three types selectable – MM/DD/YYYY, DD/MM/YYYY, YYYY/MM/DD
- Time format: two types selectable – 24 hours, 12 hours
- Gestational age from LMP/EDD/GA
- Probe name
- Probe orientation
- Depth scale marker
- Focal zone markers
- Image depth
- Zoom depth
- B-mode
  - Gain
  - Imaging frequency
  - Frame averaging
  - Dynamic range
  - Gray map
- M-mode
  - Gain
  - Frequency
  - Time scale
  - Dynamic range
- Doppler mode
  - Gain
  - Angle
  - Sample volume size and position
  - Wall filter (low velocity reject)
  - Velocity and/or frequency scale
  - Spectrum inversion
- Time scale
  - PRF
  - Doppler frequency

- Color flow Doppler mode
  - Frame rate
  - Sample volume size
  - Color scale
  - Power
  - Color baseline
  - Color threshold marker
  - Color gain
  - Frame averaging
- Spectrum inversion
- Acoustic frame rate
- CINE gauge, image number/frame number
- Bodymarks: multiple human anatomical structures
- Application/preset name
- Measurement results
- Operator message
- Displayed acoustic output
  - TIS: Thermal Index Soft Tissue
  - TIC: Thermal Index Cranial (Bone)
  - TIB: Thermal Index Bone
- MI: Mechanical Index
- Power output in dB
- Biopsy guide line and zone
- Heart rate
- TrackPad-driven annotation arrows
- Active mode display
- Stress protocol parameters
- Parameter annotation follow ASE standard
- Free text with word library
- Scan plane position indicator and probe temperature are displayed with all TEE probes
- Image orientation marker

General System Parameters

System Setup

- Pre-programmable M&A and annotation categories
- Different user presets per probe/application may be stored for quick access
- User programmable preset capability with administrator preset protection

- Factory default preset data, protected against modification
- QuickApps: Factory and user programmable sub-preset feature that keeps 2D and geometry settings while allowing different color flow or contrast parameters
- User Interface languages: English, LA Spanish, French, German, Italian, Portuguese (European and Brazilian), Russian, Swedish, Norwegian, Danish, Dutch, Finnish
- User-defined annotations
- Body patterns
- Customized comment home position

Comprehensive User Manual Available on Board

User manual and service manual are included on USB media with each system and can be downloaded from the Internet. A printed user manual is provided.

Memory/Image Memory

- 500 MB of cine memory
- Selectable cine sequence for cine review
- Measurements/calculations and annotations on cine playback
- Scrolling timeline memory
- Dual-image cine display
- Quad-image cine display
- CINE indicator and cine image number display
- CINE review loop
- CINE review speed

Image Storage

- On-board database of patient information from past exams
- User-selectable ECG and time gated acquisition available on touch panel during live scanning
- User-selectable prospective or retrospective capture in config

- Storage formats:
  - DICOM®-compressed or uncompressed, single/multi-frame, with/without raw data, storage via clipboard and/or seamlessly directly to destination device
  - Transfer/"Save As" JPEG, MPEG, AVI formats
- Storage devices (optional):
  - USB memory stick: 32 GB
  - CD-RW storage: 700 MB (DVD option required)
  - DVD storage: -RW (4.7 GB)
  - Hard drive image storage: one TB
- Compare previous images with current exam
- Reload of archived data sets

Connectivity and DICOM (optional)

- Ethernet network connection
- Wireless network connection
- DICOM 3.0
- Verify
- Print
- Store
- Modality worklist
- Storage commitment
- Modality Performed Procedure Step (MPPS)
- Media exchange
- DICOM spooler
- DICOM query/retrieve
- Structured reporting – compatible with adult cardiac, pediatric, vascular and abdominal
- Media store of structured reporting
- InSite™ ExC capability for remote service/access
- Support of two patients' IDs in DICOM
- Separate DICOM SR and image storage destinations
- Adaptive DICOM SR supported for Cardiac
- Simultaneous transfer of DICOM to multiple destinations
- Streaming (option) sends the image information as digital video stream over Ethernet in real-time to clients

Patient Archive

EchoPAC™/Patient Archive

- Data format fully compatible with of-fline EchoPAC review/reporting stations of same or newer vintage

- Instant access to ultrasound raw data provided by the system

- Advanced post-processing analysis

- Three user levels help organizing data security requirements

- E-signoff compatibility, with clear indications in patient management screens and report screen that a report was signed off, and by whom and at what time. The signed off report and exam cannot be changed. The "Diagnosing Physician" field is automatically assigned to the user that did the sign-off

Image and Data Management

- Exceptional workflow with instant access data management

- DICOM 3.0 support – see DICOM conformance statement for details

- Support for transfer of the proprietary raw data files within the DICOM standard, configurable per mode

- 2D, CFM or TVI data at maximum frame rate may be reviewed by scrolling or by running cine loops (can contain more than 1000 images for imaging modes)

- Image clipboard for stamp-size storage and review of stored images and loops

- Built-in patient archive with images/loops, patient information, measurements and reports

- DICOM-SR Standard structured reporting mechanism

- Structured findings report tools support efficient text entries with direct editing of findings text, usability improvements, new configuration options and conclusion section

- User can enter normal values which are then compared to actual measurements

- Configurable HTML-based report function

- Report templates can be customized on board

- ASE-based default text modules (English), user-customizable

- Internal archive data can be exported to removable image storage through DICOM media

- Internal hard disk – for storing programs, application defaults, ultrasound images and patient archive

- All data storage is based on ultrasound raw data, allowing to change gain, baseline, color maps, sweep speeds, etc., for recalled images and loops

- DICOM media – read/write images on DICOM format

- DICOM viewer embedded on media (optional and selectable in Config)

- Alphanumeric data can be exported in XML format

- JPEG export ("Save As") for still frames

- AVI and MPEG export ("Save As") for cineloops

- Ability to transfer Systole Only for Stress echo loops to PACS

CartoSound® Interface (optional)

- The system can interface with the Carto®3 EP navigation system and the SOUNDSTAR® ultrasound catheters manufactured by Biosense Webster

- The interface allows the Vivid iq system to send images to the Carto 3 EP system

- The Vivid iq is able to send ultrasound scaling parameters to the Carto 3 EP system via a peer-to-peer LAN connection

Tricefy® Cloud Service

- Can serve as long-term archive

- Can be used to share examinations with colleagues for information or collaboration

- Can be used to share images with patients

Self-contained DICOM Viewer (optional)

- Exams can be transferred to CD/DVD or USB media with an integrated "EZ DICOM CD viewer™"

- Self-contained "EZ DICOM CD viewer™" allows review of exams from media on a standard PC without installing anything on the host

Insite™ Express Connection (ExC)
Enables Remote Service and Training

- Easy, flexible and secure connectivity configuration. The "Contact GE" on-screen button directly generates a real-time service request to the GE online engineering or application specialist. It takes a snapshot (e.g., error logs, setup files) of the system at the time of the service request to enable analysis of problem before customer contact

- Virtual Console Observation (VCO) enables the customer to allow desktop screens to be viewed and controlled remotely over the encrypted tunnel to enable real-time training, device configuration and clinical application support

- Operation of Insite Express Connection is dependent on the infrastructure being available – check with your local GE service representative

- File transfer via Secure File Transfer Protocol (SFTP) enables the customer (biomed or clinician) to directly transfer system information (e.g., system logs, images, parametric data) to GE product engineering teams (no patient data transferred)

- Software reload provides remote application reconstruction and recovery capabilities in the event of system corruption

Smart Service Interface (SSI) (optional)

- A suite of GE proprietary service tools, designed for expert healthcare technology management professionals who want to streamline troubleshooting and diagnostics on their GE Vivid systems

- Provides an intelligent visual dashboard with drill-down capability to rapidly assess equipment status and health
- Can drive productivity by quickly isolating specific issues and decreasing overall system downtime
- SSI is available for licensed qualified users; please contact your local sales representative for more information

Scanning Parameters

- Digital beamformer with up to 974,026 effective channels
- Minimum field-of-view range (depth): 1 cm (probe dependent)
- Maximum field-of-view range (depth): 33 cm (probe dependent)
- Width range: 10° – 168° (probe dependent)
- Continuous dynamic receive focus/continuous dynamic receive aperture
- Composite dynamic range up to 415 dB
- Adjustable dynamic range
- Image reverse: right/left
- Image rotation of 0°, 180°
- Touch user-interface inversion for right-hand scanning users

Tissue Imaging

General

- Variable transmit frequencies for resolution/penetration optimization
- Display zoom with zoom area control
- High-Resolution (HR) zoom – concentrates all image acquisition power into selected Region of Interest (ROI)
- Variable contour filtering – for edge enhancement
- Selectable grayscale parameters: gain, reject, DDP, clarity, dynamic range and compress – can be adjusted in live, digital replay and image clipboard recall (probe dependent)
- Automatically calculated TGC curves reduce operator interaction
- Automatically calculated lateral gain

2D Mode

- Sector tilt and width control
- Frame rate in excess of 1000 fps, depending on probe, settings and applications
- Coded octave imaging with coded phase inversion – 3rd generation harmonic tissue imaging providing improved lateral and contrast resolution over conventional fundamental imaging. Features help reduce noise, improve wall definition, and axial resolution, making it well suited for a wide variety of patient groups
- Automatic tissue optimization – single keystroke optimizes immediately automatically and dynamically different grayscale settings with the goal of signal independent uniform gain and contrast distribution
- UD clarity and UD speckle reduce imaging – an advanced image processing technique to remove speckle in real-time examining the relative difference between neighboring pixel values and determining whether the grayscale variations have a sharp difference, follow a trend, or are random in nature
- Multiple-angle compound imaging – multiple co-planar images from different angles combined into a single image in real-time to help enhance border definition and contrast resolution, as well as reduce angular dependence of border or edge as compared to no-compound imaging
- LOGIQ View: Provides the ability to construct and view a static 2D image with wider field-of-view of a given transducer. This allows viewing and measurements of anatomy that is larger than what would fit in a single image
- Virtual convex provides a wider field-of-view with linear probes, effective at certain imaging views where a wide far field may be preferred
- Virtual apex provides a wider field-of-view with phased array probes, effective at certain imaging views where a wide near field may be preferred

- L/R and up/down invert, in live, digital replay or image clipboard recall
- Digital replay for retrospective review or automatic looping of images, allowing for adjustment of parameters such as gain, reject, anatomical M-mode, persistence and replay speed
- Data dependent processing performs temporal processing which helps reduce random noise but leaves motion of significant tissue structures largely unaffected – can be adjusted even in digital replay
- 256 shades of gray
- Colorized 2D-mode, user-selectable in real-time, digital replay

Multi-dimensional Mode
(with 6VT-D probe)

- Bi-plane scanning: two independent simultaneous scan planes where one of them can be rotated and tilted freely
- Tri-plane: three independent simultaneous scan planes that can be rotated freely
- Both bi-plane and tri-plane scanning is possible in all color Doppler modes

M-mode

- TrackPad steers M-mode line available with all imaging probes – max steering angle is probe dependent
- Simultaneous real-time 2D- and M-mode
- M-mode PRF 1 kHz – image data acquired is combined to give high-quality recording regardless of display scroll speed
- Digital replay for retrospective review of spectral data
- Several top-bottom formats, side-by-side format and time-motion-only format – can be adjusted in live or digital replay
- Selectable horizontal scroll speed: 1, 2, 3, 4, 6, 8, 12, 16 seconds across display
- Horizontal scroll can be adjusted in live or digital replay

Anatomical M-mode

- M-mode cursor can be adjusted at any plane
- Curved anatomical M-mode – free (curved) drawing of M-mode generated from the cursor independent from the axial plane
- Can be activated from live, digital replay or image clipboard recall
- Anatomical color and tissue velocity M-mode
- M&A capability

Color Doppler Imaging

General

- Steerable color Doppler available with all imaging probes – max steering angle is probe dependent
- TrackPad-controlled ROI
- Touchscreen-controlled ROI
- Removal of color map from the tissue during digital replay
- Digital replay for retrospective review of color or color M-mode data allowing for adjustment of parameters such as encoding principle, color priority and color gain even on stored data
- PRF settings – user-selectable
- Advanced regression wall filter gives efficient suppression of wall clutter
- For each encoding principle, multiple color maps can be selected in live and digital replay – variance maps available
- More than 65,000 simultaneous colors processed, providing a smooth display two-dimensional color maps containing a multitude of color hues
- Simultaneous display of grayscale 2D and 2D with color flow
- Color invert – user-selectable in live and digital replay
- Variable color baseline – user-selectable in live and digital replay
- Multi-variate color priority function gives delineation of disturbed flows even across bright areas of the 2D-mode image

- Color Doppler frequency can be changed independently from 2D

Color Flow Imaging

- TruSpeed imaging allows either ultra-high frame rate or increased lateral resolution as compared to previous generation GE products
- Frame rate in excess of 700 (it is 400 on 12S-RS) fps, depending on probe and settings
- Variable ROI size in width and depth
- User-selectable radial and lateral averaging to help reduce statistical uncertainty in the color velocity and variance estimates
- Data Dependent Processing (DDP) performs temporal processing and display smoothing to help reduce loss of transient events of hemodynamic significance
- Digital replay for retrospective review or automatic looping of color images, allowing for adjustment of parameters such as DDP, encoding principle, baseline shift, color maps, color priority and color gain even on frozen/recalled data
- Application-dependent, multi-variate motion discriminator helps reduce flash artifacts
- Dedicated coronary flow application
- Multiple-angle compound imaging in 2D mode is maintained while in color Doppler mode

Multi-Dimensional Color Doppler Imaging
(with 6VT-D probe)

- Bi-plane and tri-plane scanning with all color Doppler and tissue velocity modes

Color Angio

- Angle-independent mode for visualization of small vessels with increased sensitivity compared to standard color flow of previous GE products

Color M-mode

- Variable ROI length and position – user-selectable

- User-selectable radial averaging to help reduce statistical uncertainty in the color velocity and variance estimates
- Selectable horizontal scroll speed: 1, 2, 3, 4, 6, 8, 12, 16 seconds across display – can be adjusted during live, digital replay or image clipboard recall
- Real-time 2D image while in color M-mode
- Same controls and functions available as in standard 2D color Doppler

Anatomical Color M-mode

- GE-patented, any plane color M-mode display derived from color Doppler cine loop
- Also applicable to tissue velocity Imaging
- M&A capability

B-flow

- B-flow is a digital imaging technique that provides real-time visualization of vascular hemodynamics by directly visualizing blood reflectors and presenting this information in a grayscale display
- Use of GE-patented techniques to boost blood echoes, and to help preferentially suppress non-moving tissue signals
- B-flow is available for most vascular and shared service applications

Blood Flow Imaging

- Combines color Doppler with grayscale speckle imaging
- Helps improve delineation of blood flow without bleeding into tissue or vessel wall

Blood Flow Angio Imaging

- Combines angio with grayscale speckle imaging

Tissue Velocity Imaging

Tissue Velocity Imaging Mode

- Myocardial Doppler imaging with color overlay on tissue image

- Tissue Doppler data can be acquired in background during regular 2D imaging
- The velocity of myocardial segments after entire heart cycle can be displayed in one single image
- Tissue color overlay can be removed to show just the 2D image, still retaining the tissue velocity information
- Quantitative profiles for TVI, tissue tracking, strain and strain rate can be derived
- Time markers for valve events derived from any TM mode help simplify understanding of signals in velocity traces or curved anatomical M-mode

Tissue Tracking Mode

- Real-time display of the time integral of TVI for quantitative display of myocardial systolic displacement
- Myocardial displacement is calculated and displayed as a color-coded overlay on the grayscale and M-mode image – different colors represent different displacement ranges

Tissue Synchronization Imaging Mode
(option, enabled by Advanced QScan)

- Parametric imaging which gives information about synchronicity of myocardial motion
- Myocardial segments colored according to time to peak velocity, green for early and red for late peak
- Waveform trace available to obtain quantitative time to peak measurement from TSI Image
- Available in live scanning, as well as an offline calculation derived from tissue Doppler data
- Additional features in combination with multi-dimensional imaging option
- Simultaneous acquisition of tri-plane TSI images covering all standard segments in apical views
(with 6VT-D probe)
- Efficient segment specific TSI time measurements
- Immediate bulls-eye report

- Automatic calculated TSI synchrony indexes
- TSI surface mapping
- LV synchronization report template
- CRT programming protocol

Strain/Strain Rate Mode
(option, enabled by Advanced QScan)

- Tissue deformation (strain) and rate of deformation (strain rate) are calculated and displayed as real-time, color-coded overlay on the 2D image
- Cine compound calculates and displays cineloops generated from a temporal averaging of multiple consecutive heart cycles
- Anatomical M-mode and curved anatomical M-mode displays (SI and SRI)

Spectral Doppler

General

- Operates in PW, HPRF and CW modes
- TrackPad steerable Doppler available with all imaging probes – max steering angle is probe dependent
- Selectable Doppler frequency for enhanced optimization
- High-quality, real-time duplex or triplex operation in all Doppler modes, CW and PW, and for all velocity settings
- Frame rate control for optimized use of acquisition power between spectrum, 2D and color Doppler modes in duplex or triplex modes
- Very fast and flexible spectrum analysis with an equivalent DFT rate of 0.2 ms
- Automatic Spectrum Optimization (ASO) provides a single press, automatic, real-time optimization of PW or CW spectrum scale, and baseline display
- Dynamic gain compensation for display of flows with varying signal strengths over the cardiac cycle to help improve ease of use
- Dynamic reject gives consistent suppression of background – user-selectable in real-time, digital replay or image clipboard recall

- Digital replay for retrospective review of spectral Doppler data
- Several top-bottom formats, side-by-side format and time-motion-only format – can be adjusted in live or digital replay
- Selectable horizontal scroll speed: 1, 2, 3, 4, 6, 8, 12, 16 seconds across display – can be adjusted in live or digital replay
- Adjustable spectral Doppler display parameters: gain, reject, compress, color maps – can be adjusted in live or digital replay
- User-adjustable baseline shift – in live, digital replay and image clipboard recall
- Adjustable velocity scale
- Wall filters with range 10-2000 Hz (velocity scale dependent)
- Angle correction with automatic adjustment of velocity scale – in live, digital replay and image clipboard recall
- Auto Doppler angle
- Stereo speakers mounted in the front panel
- Display annotations of frequency, mode, scales, Nyquist limit, wall filter setting, angle correction, acoustic power indices
- Compound in duplex

PW/HPRF Doppler

- Automatic HPRF Doppler maintains its sensitivity even for shallow depths and with the highest PRF's
- Digital velocity tracking Doppler employs processing in range and time for high-quality spectral displays
- Adjustable sample volume size of 1-16 mm (probe dependent)
- Maximum sample volume depth 30 cm

CW Doppler

- Highly sensitive steerable CW available with all phased array probes
- Tissue velocity Doppler

Contrast Imaging (optional)

LVO Contrast (accessed through QuickApps)[2] – Enables contrast applications intended for imaging of the left ventricle:

LV contrast (3Sc-RS probe) enhances delineation of the LV border in combination with ultrasound contrast agents. The new implementation of GE's Coded Phase Inversion (CPI) provides high-resolution detection of contrast in the LV cavity and excellent suppression of myocardial tissue signals.

Physiological Traces

- Integrated three-lead ECG module
- Automatic QRS complex detection
- External ECG lead input
- Internally generated respiratory trace using ECG leads
- ECG lead selection
- Adjustable ECG QRS markers

Automatic Optimization

- Dynamic optimization of B-mode image to improve contrast resolution, TGC and grayscale (soft or sharp, user-selectable)
- Auto-spectral optimize – dynamic adjustments of baseline, and PRF (on live image) and angle correction

Measurement and Analysis (M&A)

- Personalized measurement protocols allow individual set and order of M&A items
- Measurements can be labeled seamlessly by using protocols or post assignments
- Measurements assignable to protocol capability
- Parameter annotation follow ASE standard
- Seamless data storage and report creation
- User-assignable parameters
- Comprehensive set of adult and pediatric cardiac measurements and calculations to help assess dimensions, flow properties and other functional parameters of the heart

- Comprehensive set of shared service measurements and calculations covering vascular, abdominal, obstetrics and other application areas
- Configuration package to set up a customized set and sequence of measurements to use, defining user-defined measurements and changing settings for the factory-defined measurements
- Stress echo support allowing wall motion scoring and automatic stress level labeling of measurements
- Support for measuring on DICOM images
- AI-based Cardiac Auto 2D Measurement (option) enables automated quantification of the most common distance measurements performed on parasternal LAX 2D images, with minimum user guidance
- AI-based Spectrum Recognition (option) enables automated recognition of the most common Doppler spectra and automatically starts the Auto Doppler measurement (where available), or opens the applicable manual measurement
- Cardiac Auto Doppler automatically provides Doppler measurement results for the most common parameters with minimal user guidance
- Automatic Doppler trace functionality for use in non-cardiac applications in both live and replay

- Worksheet for review, edit and deletion of performed measurements
- Reporting support allowing a configurable set of measurements to be shown in the exam report
- DICOM SR export of measurement data

Intima Media Thickness (IMT) Measurements

- Automatic measurements (patent pending) of carotid artery Intima-Media Thickness (IMT) on any acquired frame
- On-board IMT package facilitates non-interrupted workflow – fully integrated with M&A, worksheet, archiving and reporting functions
- Algorithm provides robust, quick, reliable measurements which can be stored to the on-board archive for review and reporting
- IMT measurement can be made from frozen images or images retrieved from archive
- IMT package supports measurements of different regions of the intima in the carotid vessel (e.g., Lt./Rt./CCA/ICA etc.)
- Frame for IMT measurement can be selected in relation to the ECG waveform

Z-Scores

- Support for six sets of user-selectable Z score publications[3] covering the most common pediatric dimension measurements

[2] *Schering developed harmonic imaging for supporting contrast agent imaging.*

[3] *C Kampmann, C M Wiethoff, A Wenzel, et. al. Normal Values of M Mode Echocardiographic Measurements of More Than 2000 Healthy Infants and Children in Central Europe.* Heart *2000; 83; 667-672.*

M Cantinotti, MD; M Scalese, MS; B Murzi, MD; et. al. Echocardiographic Nomograms for Ventricular, Valvular and Arterial Dimensions in Caucasian Children with a Special Focus on Neonates, Infants and Toddlers. Journal of American Society of Echocardiography *February 2014; Volume 27, Issue 2; 179-191.e2.*

Michael D. Pettersen, MD; Wei Du, PhD; Mary Ellen Skeens, MS; and Richard A. Humes, MD. Regression Equations for Calculation of Z Scores of Cardiac Structures in a Large Cohort of Healthy Infants, Children, and Adolescents: An Echocardiographic Study. Journal of the American Society of Echocardiography *2008; 21(8): 922-34.*

Lopez L et. al. Relationship of Echocardiographic Z Scores Adjusted for Body Surface Area to Age, Sex, Race, and Ethnicity. The Pediatric Heart Network Normal Echocardiogram Database. Circ Cardiovasc Imaging. *2017 ov; 10(11). pii: e006979. doi: 10.1161/CIRCIMAGING.117.006979.*

BEI Xia, Pediatric Ultrasound Imaging. *Beijing: People's Medical Publishing House, 2013 (Second Edition): 173-227.*

BEI Xia, Pediatric Ultrasound Imaging. *Beijing: People's Medical Publishing House, 2013 (Second Edition): 261-289.*

View-X (optional, used with 6VT-D probe)

- Interface between a cath system and the Vivid scanner, such that the cath x-ray image can be shown on the Vivid scanner screen, together with the ultrasound image (picture-in-picture)

Quantitative Analysis Package (Q-Analysis) (optional)

- Traces for velocity or derived parameters (strain rate, strain, displacement) inside defined regions of interest as function of time

- Contrast analysis with traces for grayscale intensity or angio power inside defined regions of interest as function of time

- Curved anatomical M-mode display allowing an M-mode along an arbitrary curve in a 2D image

- Sample-area points may be dynamically anchored to move with the tissue when running the cineloop

- Cine compound displays cineloops generated from a temporal averaging of multiple consecutive heart cycles

Automated Function Imaging (AFI) 3.0 (optional)

- Third generation parametric imaging tool which gives quantitative data for global and segmental strain

- Allows comprehensive assessment at a glance by combining three apical longitudinal views into one comprehensive bulls-eye view

- Integrated into M&A package with specialized report templates

- 2D strain based data moves into clinical practice

- Simplified and flexible workflow with fully automated ROI tracing (if configured), adaptive ROI width and combined display of traces from all segments

- User-selectable endo or full wall global strain values displayed

- Random sequence of analysis of the three views supported

- Ability to exit tool after one or two views completed

- Applicable to transthoracic and TEE 2D data

- Integrated AutoEF calculation

- Can process raw data and DICOM data acquired with other vendors' ultrasound scanners

Automated Function Imaging for the Right Ventricle (AFI RV) (optional)

- Parametric imaging tool which gives quantitative data for right ventricular longitudinal global strain, free wall strain and segmental strain derived from the apical 4-chamber RV focused view
    - Tricuspid Annular Plane Systolic Excursion (TAPSE) provided
    - Simplified and flexible workflow with 3-point click method for ROI selection, supports editing of both endo- and epicardial borders and adaptive ROI width
    - Combined display of traces from all segments
- User-selectable endo or full wall global strain values displayed

Automated Function Imaging for the Left Atrium (AFI LA) (optional)

- Parametric tool giving quantitative data for LA longitudinal global wall strain, LA volumes and emptying fraction

- Single-plane (4-channel and 2-channel) or bi-plane (4-channel and 2-channel) measurement
    - Simplified and flexible workflow with 3-point click method for ROI selection and adaptive ROI width
    - Full wall tracking

Automated Ejection-Fraction Calculation (AutoEF 3.0) (optional)

- Third generation automated EF measurement tool based on 2D speckle tracking algorithm and on Simpson

- Integrated into M&A package with worksheet summary

- Can process raw data and DICOM data acquired with other vendors' Ultrasound scanners

Generic Measurements

- BSA (Body Surface Area)
- MaxPG (Maximum Pressure Gradient)
- MeanPG (Mean Pressure Gradient)
- % Stenosis (Stenosis Ratio)
- PI (Pulsatility Index)
- RI (Resistivity Index)
- HR (Heart Rate) – beats/minute
- A/B Ratio (Velocities Ratio)
- TAMAX (Time Averaged Maximum Velocity) – Trace method is Peak or Manual
- TAMIN (Time Averaged Minimum Velocity) – Trace method is Floor
- TAMEAN (Time Averaged Mean Velocity) – Trace method is Mean
- Volume

OB/GYN Application Module

- OB package for fetal growth analysis containing more than 100 biometry tables
- Dedicated OB/GYN reports
- Fetal graphical growth charts
- Growth percentiles
- Multi-gestational calculations (up to four)
- Programmable OB tables
- Expanded worksheets
- User-selectable fetal growth parameters based on European, American or Asian methods charts
- GYN package for ovary and uterus measurements and reporting

OB Measurements/Calculations

- Gestational age by:
    - GS (Gestational Sac)
    - CRL (Crown Rump Length)
    - FL (Femur Length)
    - BPD (Bi-Parietal Diameter)
    - AC (Abdominal Circumference)
    - HC (Head Circumference)

- APTD x TTD (Anterior/Posterior Trunk Diameter by Transverse Trunk Diameter)
- LV (Length of Vertebra)
- FTA (Fetal Trunk Cross-sectional Area)
- HL (Humerus Length)
- BD (Binocular Distance)
- FT (Foot Length)
- OFD (Occipital Frontal Diameter)
- TAD (Transverse Abdominal Diameter)
- TCD (Transverse Cerebellum Diameter)
- THD (Thorax Transverse Diameter)
- TIB (Tibia Length)
- ULNA (Ulna Length)
- Estimated Fetal Weight (EFW) by:
  - AC, BPD
  - AC, BPD, FL
  - AC, BPD, FL, HC
  - AC, FL
  - AC, FL, HC
  - AC, HC
  - EFBW
- Calculations and Ratios
  - FL/BPD
  - FL/AC
  - FL/HC
  - HC/AC
  - CI (Cephalic Index)
  - AFI (Amniotic Fluid Index)
  - CTAR (Cardio-Thoracic Area Ratio)
- Measurements/calculations by: ASUM, ASUM 2001, Berkowitz, Bertagnoli, Brenner, Campbell, CFEF, Chitty, Eik-Nes, Ericksen, Goldstein, Hadlock, Hansmann, Hellman, Hill, Hohler, Jeanty, JSUM, Kurtz, Mayden, Mercer, Merz, Moore, Nelson, Osaka University, Paris, Rempen, Robinson, Shepard, Shepard/Warsoff, Tokyo University, Tokyo/Shinozuka, Yarkoni
- Fetal graphical trending
- Growth percentiles
- Multi-gestational calculations (four)
- Fetal qualitative description (anatomical survey)

- Fetal environmental description (biophysical profile)
- Programmable OB tables
- Over 20 selectable OB calculations
- Expanded worksheets

GYN Measurements/Calculations

- Right ovary length, width, height
- Left ovary length, width, height
- Uterus length, width, height
- Cervix length, trace
- Ovarian volume
- ENDO (endometrial thickness)
- Ovarian RI
- Uterine RI
- Follicular measurements
- Summary reports

Abdominal Calculations

- Splenic index
- Liver volume, mass, cyst
- Pancreas
- CBD
- GB wall, length
- Aorta prox, mid, dist
- Aorta iliac
- Spleen volume
- Bladder, post void bladder volume
- Renal
- Cortex thickness
- Mesenteric (CA, SMA, IMA)

Vascular Calculations

- RT ECA (Right External Carotid Artery Velocity)
- RT CCA (Right Common Carotid Artery Velocity)
- RT BIFURC (Right Carotid Bifurcation Velocity)
- RT ICA (Right Internal Carotid Artery Velocity)
- RT ICA/CCA (Right Internal Carotid Artery Velocity/Common Carotid Artery Velocity Ratio)

- LT ECA, LT CCA, LT BIFURC, LT ICA, LT ICA/CCA (same as above, for Left Carotid Artery)
- RT BULB (Right Bulbus Artery), RT VERT (Right Vertebral Aretry), RT SUBC (Right Subclavian Artery), RT INN (Right Inn Artery)
- LT BULB, LT VERT, LT SUBC, LT INN
- Stent, pre-stent, post-stent
- A/B Ratio (Velocities Ratio)
- % Stenosis (Stenosis Ratio)
- S/D Ratio (Systolic Velocity/Diastolic Velocities Ratio)
- PI (Pulsatility Index)
- RI (Resistivity Index)
- HR (Heart Rate) – beats/minute
- UEV (Upper Extremity Vein velocities): IJV, SUBC, Axill V, Bas V, RV, UV, Ves, Pseudo, AVF, CephV
- UEA (Upper Extremity Artery velocities): Inn, SUBC, Axill, BA, RA, UA, Pseudo, AVF, Ves
- LEV (Lower Extremity Vein velocities): CFV, Saph FemJunc V, PopV, PTV, ATV, FV, GSV Calf, GSV Thigh, GSV Access, LSV, Saph PopJunc
- LEA (Lower Extremity Artery velocities): EIA, SFA, Pop, PTA, Peron, DPA, ATA,CFA, DFALEA
- MCA (Middle Cerebral Artery), ACA (Anterior Cerebral Artery), PCA (Posterior Cerebral Artery), AcomA (Anterior Communicating Artery), PComA (Posterior Communicating Artery), Basilar (Basilar Artery), Ves

Cardiac Measurements

- %FS (LV Fractional Shortening)
- %IVS Thck (IVS Fractional Shortening)
- %LVPW Thck (LV Posterior Wall Fractional Shortening)
- Ao Arch Diam (Aortic Arch Diameter)
- Ao Asc (Ascending Aortic Diameter)
- Ao Desc Diam (Descending Aortic Diameter)
- Ao Isthmus (Aortic Isthmus)

- Ao Root Diam (Aortic Root Diameter)
- AR ERO
  (PISA: Regurgitant Orifice Area)
- AR Flow (PISA: Regurgitant Flow)
- AR PHT (AV Insuf. Pressure Half Time)
- AR Rad (PISA: Radius of Aliased Point)
- AR RF (Regurgitant Fraction
  over the Aortic Valve)
- AR RV
  (PISA: Regurgitant Volume Flow)
- AR Vel (PISA: Aliased Velocity)
- AR Vmax (Aortic Insuf. Peak Velocity)
- AR VTI
  (Aortic Insuf. Velocity Time Integral)
- ARed max PG (Aortic Insuf.
  End-Diastole Pressure Gradient)
- ARed Vmax (Aortic Insuf.
  End-Diastolic Velocity)
- AV Acc Slope
  (Aortic Valve Flow Acceleration)
- AV Acc Time
  (Aortic Valve Acceleration Time)
- AV AccT/ET (AV Acceleration
  to Ejection Time Ratio)
- AV EOA I (VTI) (Aortic Valve
  Effective Orifice Area Index
  by Continuity Equation VTI)
- AV EOA I Vmax (Aortic Valve
  Effective Orifice Area Index
  by Continuity Equation Peak V)
- AV CO (Cardiac Output by Aortic Flow)
- AV Cusp
  (Aortic Valve Cusp Separation, 2D)
- AV Dec Time
  (Aortic Valve Deceleration Time)
- AV Diam (Aortic Diameter, 2D)
- AV max PG
  (Aortic Valve Peak Pressure Gradient)
- AV mean PG
  (Aortic Valve Mean Pressure Gradient)
- AV SV (Stroke Volume by Aortic Flow)
- AV Vmax (Aortic Valve Peak Velocity)
- AV Vmean (AV Mean Velocity)
- AV VTI
  (Aortic Valve Velocity Time Integral)
- AVA (Vmax) (AV Area by Continuity
  Equation by Peak V)

- AVA (VTI) (AV Area by Continuity
  Equation VTI)
- AVA Planimetry (Aortic Valve Area)
- AVET (Aortic Valve Ejection Time)
- CO (Teich)
  (Cardiac Output, M-mode, Teicholtz)
- D-E Excursion
  (MV Anterior Leaflet Excursion)
- E' Avg (Averaged Early Diastolic
  Mitral Valve Annular Velocity)
- E' Lat (Early Diastolic Mitral Valve
  Lateral Annular Velocity)
- E' Sept (Early Diastolic Mitral Valve
  Septal Annular Velocity)
- E/E' Avg
  (Mitral Inflow E Velocity to E' Avg Ratio)
- E/E' Lat
  (Mitral Inflow E Velocity to E' Lat Ratio)
- E/E' Sept
  (Mitral Inflow E Velocity to E' Sept Ratio)
- EDV (Cube) (Left Ventricle Volume,
  Diastolic, 2D, Cubic)
- EF (A-L A2C) (Ejection Fraction 2CH,
  Single Plane, Area-Length)
- E-F Slope (Mitral Valve E-F Slope)
- EPSS (E-Point-to-Septum Separation,
  M-mode)
- ERO (Effective Regurgitant Orifice)
- ESV (Cube) (Left Ventricle Volume,
  Systolic, 2D, Cubic)
- HR (Heart Rate, 2D, Teicholtz)
- IVC (Inferior Vena Cava)
- IVCT (Isovolumic Contraction Time)
- IVRT (Isovolumic Relaxation Time)
- IVSd (Interventricular Septum
  Thickness, Diastolic, 2D)
- VSs (Interventricular Septum
  Thickness, Systolic, 2D)
- LA Diam (Left Atrium Diameter, 2D)
- LA Major (Left Atrium Major)
- LA Minor (Left Atrium Minor)
- LA/Ao (LA Diameter to
  AoRoot Diameter Ratio, 2D)
- LAAd (A2C) (Left Atrium Area, Apical 2C)
- LAEDV (A-L)
  (LA End Diastolic Volume, Area-Length)

- LAEDV Index (A-L) (LA End Diastolic
  Volume Index, Area-Length)
- LAESV (A-L) (LA End Systolic Volume,
  Area-Length)
- LAESV Index (A-L) (LA End Systolic
  Volume Index, Area-Length)
- LAEDV MOD
  (LA End Diastolic Volume MOD)
- LAESV MOD
  (LA End Systolic Volume MOD)
- LIMP (Left Index of
  Myocardial Performance)
- LVA (s) (Left Ventricular Area,
  Systolic, 2CH)
- LVAd (A2C) (Left Ventricular Area,
  Diastolic, 2CH)
- LVAd (SAX) (LV Area, SAX, Diastolic)
- LVAend (d) (LV Endocardial Area, SAX)
- LVAepi (d) (LV Epicardial Area, SAX)
- LVAs (A4C)
  (Left Ventricular Area, Systolic, 4CH)
- LVAs (SAX) (LV area, SAX, Systolic)
- LVd Mass (LV Mass, Diastolic, 2D)
- LVd Mass (LV Mass, Diastolic, M-mode)
- LVd Mass Index
  (LV Mass Index, Diastolic, 2D)
- LVEDV (A-L A2C) (LV Volume, Diastol-
  ic, 2CH, Area-Length)
- LVESV (A-L A2C) (LV Volume, Systolic,
  2CH, Area-Length)
- LVET (Left Ventricle Ejection Time)
- LVIDd
  (LV Internal Dimension, Diastolic, 2D)
- LVIDs
  (LV Internal Dimension, Systolic, 2D)
- LVLd (Apical)
  (Left Ventricular Length, Diastolic, 2D)
- LVLs (Apical)
  (Left Ventricular Length, Systolic, 2D)
- LVOT Area
  (Left Ventricle Outflow Tract Area)
- LVOT CO
  (Cardiac Output by Aortic Flow)
- LVOT Diam (Left Ventricular Outflow
  Tract Diameter)
- LVOT Max PG
  (LVOT Peak Pressure Gradient)

- LVOT Mean PG
  (LVOT Mean Pressure Gradient)
- LVOT SI
  (Stroke Volume Index by Aortic Flow)
- LVOT SV
  (Stroke Volume by Aortic Flow)
- LVOT Vmax (LVOT Peak Velocity)
- LVOT Vmean (LVOT Mean Velocity)
- LVOT VTI (LVOT Velocity Time Integral)
- LVPWd (Left Ventricular Posterior
  Wall Thickness, Diastolic, 2D)
- LVPWs (Left Ventricular Posterior
  Wall Thickness, Systolic, 2D)
- LVs Mass (LV Mass, Systolic, 2D)
- LVs Mass Index
  (LV Mass Index, Systolic, 2D)
- LAAd (A2C) (Left Atrium Area, Apical 2C)
- MCO (Mitral Valve Closure to Opening)
- MP Area (Mitral Valve Prosthesis)
- MR Acc Time
  (MV Regurg. Flow Acceleration)
- MR ERO
  (PISA: Regurgitant Orifice Area)
- MR Flow (PISA: Regurgitant Flow)
- MR Max PG
  (Mitral Regurg. Peak Pressure Gradient)
- MR Rad (PISA: Radius of Aliased Point)
- MR RF (Regurgitant Fraction
  Over the Mitral Valve)
- MR RV (PISA: Regurgitant Volume Flow)
- MR Vel (PISA: Aliased Velocity)
- MR Vmax (Mitral Regurg. Peak Velocity)
- MR Vmean
  (Mitral Regurg. Mean Velocity)
- MR VTI
  (Mitral Regurg. Velocity Time Integral)
- MV A Dur
  (Mitral Valve A-Wave Duration)
- MV A Velocity (MV Velocity Peak A)
- MV Acc Slope
  (Mitral Valve Flow Acceleration)
- MV Acc Time
  (Mitral Valve Acceleration Time)
- MV Acc/Dec Time
  (MV: Acc.Time/Decel.Time Ratio)

- MV An Diam
  (Mitral Valve Annulus Diameter, 2D)
- MV CO (Cardiac Output by Mitral Flow)
- MV Dec Slope
  (Mitral Valve Flow Deceleration)
- MV Dec Time
  (Mitral Valve Deceleration Time)
- MV E Velocity (MV Velocity Peak E)
- MV E/A Ratio
  (Mitral Valve E-Peak to A-Peak Ratio)
- MV Max PG
  (Mitral Valve Peak Pressure Gradient)
- MV Mean PG
  (Mitral Valve Mean Pressure Gradient)
- MV PHT
  (Mitral Valve Pressure Half Time)
- MV Reg Frac
  (Mitral Valve Regurgitant Fraction)
- MV SI
  (Stroke Volume Index by Mitral Flow)
- MV SV (Stroke Volume by Mitral Flow)
- MV Time to Peak
  (Mitral Valve Time to Peak)
- MV Vmax (Mitral Valve Peak Velocity)
- MV Vmean (MV Mean Velocity)
- MV VTI
  (Mitral Valve Velocity Time Integral)
- MVA (Mitral Valve Area)
- MVA By PHT
  (Mitral Valve Area according to PHT)
- MVA by Plan (Mitral Valve Area, 2D)
- MVET (Mitral Valve Ejection Time)
- P Vein A (Pulmonary Vein Velocity
  Peak A) – Reverse
- P Vein A Dur
  (Pulmonary Vein A-Wave Duration)
- P Vein D (Pulmonary Vein
  End-Diastolic Peak Velocity)
- P Vein S (Pulmonary Vein
  Systolic Peak Velocity)
- PAEDP
  (Pulmonary Artery Diastolic Pressure)
- PE(d) (Pericard Effusion, M-mode)
- PEs (Pericard Effusion, 2D)
- PR max PG (Pulmonic Insuf.
  Peak Pressure Gradient)

- PR mean PG (Pulmonic Insuf.
  Mean Pressure Gradient)
- PR PHT
  (Pulmonic Insuf. Pressure Half Time)
- PR Vmax
  (Pulmonic Insuf. Peak Velocity)
- PR VTI (Pulmonic Insuf.
  Velocity Time Integral)
- PRend Max PG (Pulmonic Insuf.
  End-Diastole Pressure Gradient)
- PRend Vmax (Pulmonic Insuf.
  End-Diastolic Velocity)
- Pulmonic Diam
  (Pulmonary Artery Diameter, 2D)
- PV Acc Slope
  (Pulmonic Valve Flow Acceleration)
- PV Acc Time
  (Pulmonic Valve Acceleration Time)
- PV Acc Time/ET Ratio (PV Acceleration
  to Ejection Time Ratio)
- PV An Diam
  (Pulmonic Valve Annulus Diameter, 2D)
- PV Ann Area (Pulmonic Valve Area)
- PV CO
  (Cardiac Output by Pulmonic Flow)
- PV Max PG (Pulmonic Valve
  Peak Pressure Gradient)
- PV Mean PG (Pulmonic Valve
  Mean Pressure Gradient)
- PV SV
  (Stroke Volume by Pulmonic Flow)
- PV Vmax
  (Pulmonary Artery Peak Velocity)
- PV Vmean (PV Mean Velocity)
- PV VTI
  (Pulmonic Valve Velocity Time Integral)
- PVA (VTI) (Pulmonary Artery
  Velocity Time Integral)
- PVein S/D Ratio
  (Pulmonary Vein SD Ratio)
- PVET (Pulmonic Valve Ejection Time)
- PVPEP
  (Pulmonic Valve Pre-Ejection Period)
- PVPEP/ET Ratio (PV Pre-Ejection
  to Ejection Time Ratio)
- Qp/Qs
  (Pulmonic-to-Systemic Flow Ratio)

- RA Major (Right Atrium Major, 2D)
- RA Minor (Right Atrium Minor, 2D)
- RAA (d)
  (Right Atrium Area, 2D, Diastole)
- RAA (s)
  (Right Atrium Area, 2D, Systole)
- RAEDV A2C (Right Atrium End
  Diastolic Volume, Apical 2 Chamber)
- RAESV A-L
  (RA End Systole Volume [A-L])
- RALd (Right Atrium Length, Diastole)
- RALs (RA Length, Systole)
- RIMP (Right Index of
  Myocardial Performance)
- RJA (A4C) (Regurgitant Jet Area)
- RJA/LAA
  (Regurgitant Jet Area ratio RJA/LAA)
- RV Major (Right Ventricle Major)
- RV Minor (Right Ventricle Minor)
- RV S' (Tricuspid Annulus Systolic
  Excursion Velocity)
- RVAWd (Right Ventricle
  Wall Thickness, Diastolic, 2D)
- RVAWs (Right Ventricle
  Wall Thickness, Systolic, 2D)
- RVET (Right Ventricle Ejection Time)
- RVIDd (Right Ventricle Diameter,
  Diastolic, 2D)
- RVIDs
  (Right Ventricle Diameter, Systolic, 2D)
- RVOT Area
  (Right Ventricle Outflow Tract Area)
- RVOT Diam
  (RV Output Tract Diameter, 2D)
- RVOT Diam (RV Output
  Tract Diameter, M-mode)
- RVOT Max PG
  (RVOT Peak Pressure Gradient)
- RVOT Mean PG
  (RVOT Mean Pressure Gradient)
- RVOT SI (LV Stroke Volume Index
  by Pulmonic Flow)
- RVOT SV (Stroke Volume
  by Pulmonic Flow)
- RVOT Vmax (RVOT Peak Velocity)
- RVOT Vmean (RVOT Mean Velocity)
- RVOT VTI (RVOT Velocity Time Integral)

- RVSP
  (Right Ventricle Systolic Pressure)
- RVWd (Right Ventricle Wall Thickness, Diastolic, M-mode)
- RVWs (Right Ventricle Wall Thickness, Systolic, M-mode)
- RAA (d)
  (Right Atrium Area, 2D, Diastole)
- RAA (s)
  (Right Atrium Area, 2D, Systole)
- SI (A-L A2C) (LV Stroke Index,
  Single Plane, 2CH, Area-Length)
- SI (A-L A4C) (LV Stroke Index,
  Single Plane, 4CH, Area-Length)
- SI (Bi-plane)
  (LV Stroke Index, Bi-plane, MOD)
- SI (bullet)
  (LV Stroke Index, Bi-plane, Bullet)
- SI (MOD A2C) (LV Stroke Index,
  Single Plane, 2CH, MOD)
- SI (MOD A4C) (LV Stroke Index,
  Single Plane, 4CH, MOD)
- SI (Teich) (LV Stroke Index,
  Teicholtz, 2D)
- SI (Teich) (LV Stroke Index,
  Teicholtz, M-mode)
- SV (A-L A2C) (LV Stroke Volume,
  Single Plane, 2CH, Area-Length)
- SV (A-L A4C) (LV Stroke Volume,
  Single Plane, 4CH, Area-Length)
- SV (Bi-plane) (LV Stroke Volume,
  Bi-plane, MOD)
- SV (Bullet) (LV Stroke Volume,
  Bi-plane, Bullet)
- SV (MOD A2C) (LV Stroke Volume,
  Single-plane, 2CH, MOD) – Simpson
- SV (MOD A4C) (LV Stroke Volume,
  Single-plane, 4CH, MOD) – Simpson
- SV (Cube) (LV Stroke Volume, 2D, Cubic)
- SV (Cube)
  (LV Stroke Volume, M-mode, Cubic)
- SV (Teich)
  (LV Stroke Volume, 2D, Teicholtz)
- SV (Teich)
  (LV Stroke Volume, M-mode, Teicholtz)
- Systemic Diam
  (Systemic Vein Diameter, 2D)
- Systemic Vmax
  (Systemic Vein Peak Velocity)

- Systemic VTI
  (Systemic Vein Velocity Time Integral)
- TAPSE (Tricuspid Annular Plane
  Systolic Excursion)
- TCO
  (Tricuspid Valve Closure to Opening)
- TR Max PG (Tricuspid Regurg.
  Peak Pressure Gradient)
- TR Mean PG (Tricuspid Regurg.
  Mean Pressure Gradient)
- TR Vmax
  (Tricuspid Regurg. Peak Velocity)
- TR Vmean
  (Tricuspid Regurg. Mean Velocity)
- TR VTI (Tricuspid Regurgitation
  Velocity Time Integral)
- TV A Dur
  (Tricuspid Valve A-Wave Duration)
- TV A Velocity
  (Tricuspid Valve A Velocity)
- TV Acc Time
  (Tricuspid Valve Time to Peak)
- TV Ann Area (Tricuspid Valve Area)
- TV Ann Diam (Tricuspid Valve
  Annulus Diameter, 2D)
- TV Area (Tricuspid Valve Area, 2D)
- TV CO
  (Cardiac Output by Tricuspid Flow)
- TV Dec Slope
  (Tricuspid Valve Flow Deceleration)
- TV E Velocity (Tricuspid Valve E Velocity)
- TV E/A Ratio (Tricuspid Valve
  E-Peak to A-Peak Ratio)
- TV Max PG (Tricuspid Valve
  Peak Pressure Gradient)
- TV Mean PG (Tricuspid Valve
  Mean Pressure Gradient)
- TV Mean PG (Tricuspid Valve
  Mean Pressure Gradient)
- TV PHT
  (Tricuspid Valve Pressure Half Time)
- TV SV
  (Stroke Volume by Tricuspid Flow)
- TV Vmean (TV Mean Velocity)
- TV VTI
  (Tricuspid Valve Velocity Time Integral)
- VSD Max PG
  (VSD Peak Pressure Gradient)
- VSD Vmax (VSD Peak Velocity)

Please refer to the reference manual for the full list of measurements and calculations for all applications.

Annotations

Body Marks

- Body mark icons for location and position of probe
- Option to automatically activate body mark on freeze
- Easy selection of body marks from touch screen
- Easy selection of body marks for dual-screen layout

Text Annotations

- Easy selection of text annotations from touch screen
- Option to automatically activate annotation on freeze

Scan Assist Pro

- Customizable automations that assist the user through each step of the scan
- Facilitates consistency and reduced keystrokes
- Ultrasound image, anatomical picture, step by step training through a pre-defined protocol
- Supports selection of all modes, all measurements and dual annotations
- Imaging attributes: octave, steer, dual/quad screen, compound, LOGIQ View, zoom, depth, scale and baseline
- On-line or off-line protocol editor
- Image acquisition according to predefined protocol templates
- Various factory protocol templates
- User-configurable protocol templates

Scan Coach (optional)

- A reference and education tool that provides modules depicting basic scanning techniques with animated graphics of probe position, schematic of anatomy and reference clinical image
- Exam protocols can be customized based on local guidelines

Smart Stress Echo (optional)

Supported Protocol Examinations

- 2D pharmacological stress echo
- 2D bicycle stress echo
- 2D continuous capture stress echo (treadmill stress echo)
- Cardiac resynchronization therapy programming protocols (available with the Advanced QScan option)

Protocol Examinations Features (enabled with Smart Stress option)

- Wall motion scoring: analysis by wall motion in individual myocardial segments
- Show reference: show a reference image from baseline or previous level during acquisition
- Smart stress: automatically set up various scanning parameters (for instance geometry, frequency, gain, etc.) according to same projection on previous level
- Scan mode settings: scan mode may be specified for individual views in the protocol
- Preview of store: show running loops as preview before storing to the examination

Continuous Capture

- Continuously acquire large amounts of 2D image data, and selection of projection views for analysis afterwards
- The entire continuous capture recording may be kept in memory while it is possible to store new images outside the protocol template, or the entire recording can be stored to file
- Selection of projection views on scanner or EchoPAC when the entire recording is stored to file

Wall Motion Scoring

- As part of the measurement and analysis package one can access a wall motion assessment module, providing analysis/scoring of individual myocardial segments
- For use with all stress modalities

Cardiac Resynchronization Therapy (CRT) Programming Protocols

- CRT protocols require Smart Stress and Advanced QScan
- Tailored acquisition protocol for data needed for programming of AV and VV delays in biventricular pacemakers
- Image acquisition of a set of projection views with various scan mode settings
- Template editor
- User-configurable protocol templates
- Configure protocol name, number of levels and views, name of level and views and several other protocol settings (smart stress, show reference, scan mode, preview of store, timer handling, etc.)

Safety Conformance

- IEC60601-2-37
- IEC60601-1
- IEC60601-1-2
- IEC60601-1-6
- NEMA UD3
- The European Medical Devices Directive (MDD) 93/42/EEC (CE Mark)
- Directive 2011/65/EU on the restriction of use of certain hazardous substances (RoHS)
- EN 62366 Medical Devices
- Directive 2014/53/EU Radio Equipment Directive
- ISO 10993-1 Biological evaluation of medical devices – Part 1 Evaluation and Testing
- The Vivid iq ultrasound unit is a Class I device, with BF (probes) and CF (ECG leads) and Defibrillation-Proof Type (ICE catheters) applied parts according to IEC60601-1
- The Vivid iq ultrasound unit meets the EMC requirements in IEC 60601-1-2:2014 as Group1, Class A specified by CISPR 11

Security

Virus Protection

To reduce virus vulnerability, Vivid iq is configured with a minimal set of open ports and with all network services not actively used by the system closed down. This helps to significantly reduce the risk of a virus attack on Vivid iq.

GE is continuously judging the need for additional actions to reduce vulnerability of equipment; this includes vulnerability scanning of our products and evaluation of new security patches for the 3rd-party technology used. Microsoft® (and other) security patches that address serious issues with Vivid iq will be made available to customers after GE verification of those patches.

Whitelisting

- Prevents non-listed applications from running

User Policies

- Secure and advanced user password and login scheme according to user's password requirements

LDAP

- Users can log in to the system by using the same user credentials as used for domain connected computers

Disc Encryption

- Optional encryption of the scanner's E drive containing patient identifiable data

Streaming Server

- Sends the image information as digital video stream over Ethernet in real-time to clients
- Allows simple video transmission over long distances
- Supports 2D data for both, tissue mode and color-flow mode
- Provides raw data images with metadata enabling clients to visualize (render), modify and process the Vivid iq images through their own apps

eDelivery (optional) [4]

- eDelivery facilitates download of software patches for service purposes (e.g., security patches)
- It is also an enabler for the ability to download apps from the AppStore

App Launchpad [4]

- The app launchpad is a tab available on the archive screen – when selected, various applications ("Apps") can be launched
- Only validated and released apps are supported
- 3rd-party apps can be purchased through an AppStore on a GE website
- Consult with a GE representative for more details

Digital Expert (optional) [4]

- Enables the user to connect remotely to a GE Healthcare Clinical Specialist to receive application related training and help

Probes

3Sc-RS Phased Array Probe

- Applications: Cardiac, pediatric, fetal/obstetrics, transcranial, adult cephalic, abdominal
- Probe presets: Coronary, exercise, LVO contrast (optional), LVO stress, FATE, pediatric, fetal heart, ED-OB1, transcranial Doppler, abdomen, renal, FAST, lung
- Biopsy guide: Multi-angle disposable with a reusable bracket

M5Sc-RS Active Matrix Single Crystal Phased Array Probe

- Applications: Cardiac, pediatric, fetal/obstetrics, transcranial, adult cephalic, abdomen
- Probe presets: Cardiac, exercise, pediatric, FATE, coronary, fetal heart, LVO contrast (optional) LVO stress, abdominal, renal, ED-OB1, transcranial Doppler, contrast low MI, FAST, lung
- Biopsy guide: Multi-angle disposable with a reusable bracket

4 *eDelivery, App Launchpad and Digital Expert may not be available in all countries and regions. Consult with a GE representative for more details.*

6S-RS Phased Array Probe

- Applications: Cardiac, pediatric, abdominal, transcranial, neonatal cephalic, fetal/obstetrics
- Probe presets: Coronary, pediatric, infant, neonates, abdominal, fetal heart, FAST, lung

6VT-D Active Matrix 4D Volume TEE Probe – working in 2D mode and bi-plane/tri-plane mode (option), but 4D mode is not available

- Applications: Cardiac, transesophageal
- Probe presets: Cardiac, coronary, LVO contrast (optional)

6Tc-RS TEE Probe

- Applications: Cardiac, transesophageal
- Probe presets: Cardiac, coronary, LVO contrast (optional)

9T-RS TEE Probe

- Applications: Cardiac, transesophageal
- Probe preset: Pediatric

9L-RS Linear Array Probe

- Applications: Abdominal, pediatric, peripheral vascular, musculoskeletal conventional/superficial, small organ
- Probe presets: Carotid, LEA, LEV, UEA, UEV, ED-LEV, ED-VA, vertebral, abdomen, musculoskeletal, nerves, ED-MSK, nerves-superficial, nerves-average, nerves-deep, abdomen, pediatric abdominal, lung
- Biopsy guide: Multi-angle disposable with a reusable bracket

12L-RS Linear Array Probe

- Applications: Abdominal, pediatric, neonatal cephalic, peripheral vascular, musculoskeletal conventional/superficial, small organ
- Probe presets: Neohead, carotid, LEA, LEV, UEA, UEV, ED-LEV, ED-VA, musculoskeletal, pediatric abdominal, nerves, lung, nerves-superficial, nerves-average, nerves-deep, thyroid, small parts, breast, ED-MSK
- Biopsy guide: Multi-angle disposable with a reusable bracket

ML6-15-RS Linear Array Probe

- Applications: Abdominal, pediatric, neonatal cephalic, peripheral vascular, musculoskeletal conventional/superficial, small organ

- Probe presets: Abdominal, carotid, ED-LEV, ED-VA, lung, musculoskeletal, nerves-superficial, nerves-average, nerves-deep, ED-MSK

- Biopsy guide: Multi-angle disposable with a reusable bracket

L8-18i-RS Linear Array Probe

- Applications: Intraoperative, peripheral vascular, musculoskeletal conventional/superficial, small organ

- Probe presets: Epicardial, ED-VA, vascular, musculoskeletal superficial, nerves-superficial, small parts

C1-5-RS Curved Array Probe

- Applications: Abdominal, pediatric, fetal/obstetrics, transrectal, musculo-skeletal conventional/superficial

- Probe presets: Pediatric abdominal, fetal echo, OB1, OB23, ED-OB1, abdomen, renal, FAST, GYN, prostate, lung, aorta, spine, nerves-deep

- Biopsy guide: Multi-angle disposable with a reusable bracket

8C-RS Curved Array Probe

- Applications: Cardiac, abdominal, pediatric, transcranial, neonatal cephalic, musculoskeletal conventional/superficial, small organ

- Probe presets: Cardiac, pediatric abdominal, neonatal abdominal, neohead, vascular, FAST, lung, spine

- Biopsy guide: Fixed-angle, disposable, or reusable bracke

E8Cs-RS Endo Micro Convex Probe

- Applications: Fetal/obstetrics, transvaginal, abdominal, transrectal

- Probe presets: Fetal echo, OB1, GYN, prostate

- Biopsy guide: Fixed-angle, disposable, or reusable bracket

P2D Pencil Probe

- Probe preset: Cardiac

Catheter Cable ICE Probe Connector

- Allows connecting the AcuNav® ICE catheters to Vivid iq

ACUSON® AcuNav 10F IntraCardiac Echo (ICE) Catheter[5]

- Probe presets: ICE

ACUSON AcuNav 8F IntraCardiac Echo (ICE) Catheter[5]

- Probe presets: ICE

SOUNDSTAR 3D Ultrasound Catheter based on AcuNav 10F IntraCardiac Echo (ICE) Catheter[45]

- Probe presets: ICE, carto

SOUNDSTAR eco 10F G Ultrasound Catheter based on AcuNav 10F IntraCardiac Echo (ICE) Catheter[5]

- Probe presets: ICE, carto

SOUNDSTAR eco 8F G Ultrasound Catheter based on AcuNav 8F IntraCardiac Echo (ICE) Catheter[5]

- Probe presets: ICE, carto

[5] *Not available in all countries. Please contact Biosense Webster for availability.*

PROBE	FREQUENCY RANGE	CATALOG #
3Sc-RS	1.3 – 4.0 MHz	H45041DL
M5Sc-RS	1.5 – 4.6 MHz	H44901AG
6S-RS	2.0 – 7.0 MHz	H45021RP
12S-RS	4.2 – 12.0 MHz	H44901AB
6VT-D	3.0 – 8.0 MHz	H45581BJ
6Tc-RS	3.0 – 8.0 MHz	H45551ZE
9T-RS	3.6 – 10.0 MHz	H45531YM
9L-RS	2.0 – 10.0 MHz	H40442LL
12L-RS	4.0 – 13.0 MHz	H40402LY
ML6-15-RS	5.0 – 15.0 MHz	H40462LM
L8-18i-RS	4.5 – 18.0 MHz	H40462LF
C1-5-RS	1.5 – 5.0 MHz	H40462LA
8C-RS	3.5 – 10.0 MHz	H40402LS
E8Cs-RS	3.5 – 10.0 MHz	H48062AF
P2D (Pencil)	1.9– 2.1 MHz	H45551CA
Catheter Cable ICE probe connector		H48952AR
ACUSON AcuNav 10F[5]	4.5 – 11.5 MHz	Distributed by Biosense Webster, Inc
ACUSON AcuNav 8F[5]	4.5 – 11.5 MHz	Distributed by Biosense Webster, Inc
SOUNDSTAR 3D Ultrasound Catheter based on AcuNav 10F[5]	4.5 – 11.5 MHz	Distributed by Biosense Webster, Inc
SOUNDSTAR eco 10F G Ultrasound Catheter based on AcuNav 10F[5]	4.5 – 11.5 MHz	Distributed by Biosense Webster, Inc
SOUNDSTAR eco 8F G Ultrasound Catheter based on AcuNav 8F[5]	4.5 – 11.5 MHz	Distributed by Biosense Webster, Inc

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About GE Healthcare

GE Healthcare is a leading global medical technology and digital solutions innovator. GE Healthcare enables clinicians to make faster, more informed decisions through intelligent devices, diagnostic pharmaceuticals, data analytics, applications and services, supported by its Edison intelligence platform. With over 100 years of healthcare industry experience and around 50,000 employees globally, the company operates at the center of an ecosystem working toward precision health, digitizing healthcare, helping drive productivity and improve outcomes for patients, providers, health systems and researchers around the world. Follow us on Facebook.com, LinkedIn.com, Twitter.com and Insights.com or visit our website www.gehealthcare.com for more information.

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