

Product Data  
No. MPDUS0232EAC

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### **INTRODUCTION**

This system achieves high sensitivity and high quality by using state-of-the-art digital technology in the T/R section, which is the core of a diagnostic ultrasound system. This system features advanced algorithms that run on circuits that incorporate the latest circuit technology, semiconductor technology, and surface-mount technology. This system is designed to support a full range of applications and can be used as a general purpose system or a specialized system, depending on the installed software.

### **Full-digital ultrasound beam transmission and reception**

This system employs full-digital transmission and reception circuits. The high definition ultrasound beams and data processing technology available with full-digital systems allow high sensitivity and image quality to be achieved simultaneously.

### **Enhanced diagnostic capabilities**

The spatial resolution, contrast resolution, and temporal resolution have been improved through new technologies, resulting in enhanced diagnostic capabilities.

### **Transducers supporting a wide range of frequencies**

Echoes over a wide range of frequencies can be obtained using a single transducer, allowing the optimal sensitivity and quality to be achieved for each region examined. This function permits a single transducer to be utilized for a wide range of applications, greatly improving the throughput and price-to-performance ratio.

### **Intelligent panel and software**

The intelligent panel and software facilitate operation and contribute to a high throughput.



### **Ergonomics**

The system employs a non-interlace high-definition monitor with excellent viewing ability. This feature decreases operator fatigue in long examinations. The ergonomic design of the system ensures comfortable and efficient examinations for operators, physicians, and patients.

### **Operability**

System operability is optimized for the overall clinical workflow in hospitals.

**SYSTEM MATRIX OF CUS-AME00**

Unit	Model name	Remarks
Main unit	CUS-AME00, Aplio me	High-definition 21.5-inch or 23-inch wide LCD monitor with LED backlight, ADF (Advanced Dynamic Flow), ApliPure, ApliPure Plus, Precision Imaging, Precision Plus, CDI (Color Doppler Imaging), Power Doppler (Power Angio), TDI (Tissue Doppler Imaging), TwinView, Smart 3D, Flex-M, Vascularity Index, Quick Scan, D-THI, Auto IMT, BEAM, Full Focus, TSO (Tissue Specific Optimization), DICOM®

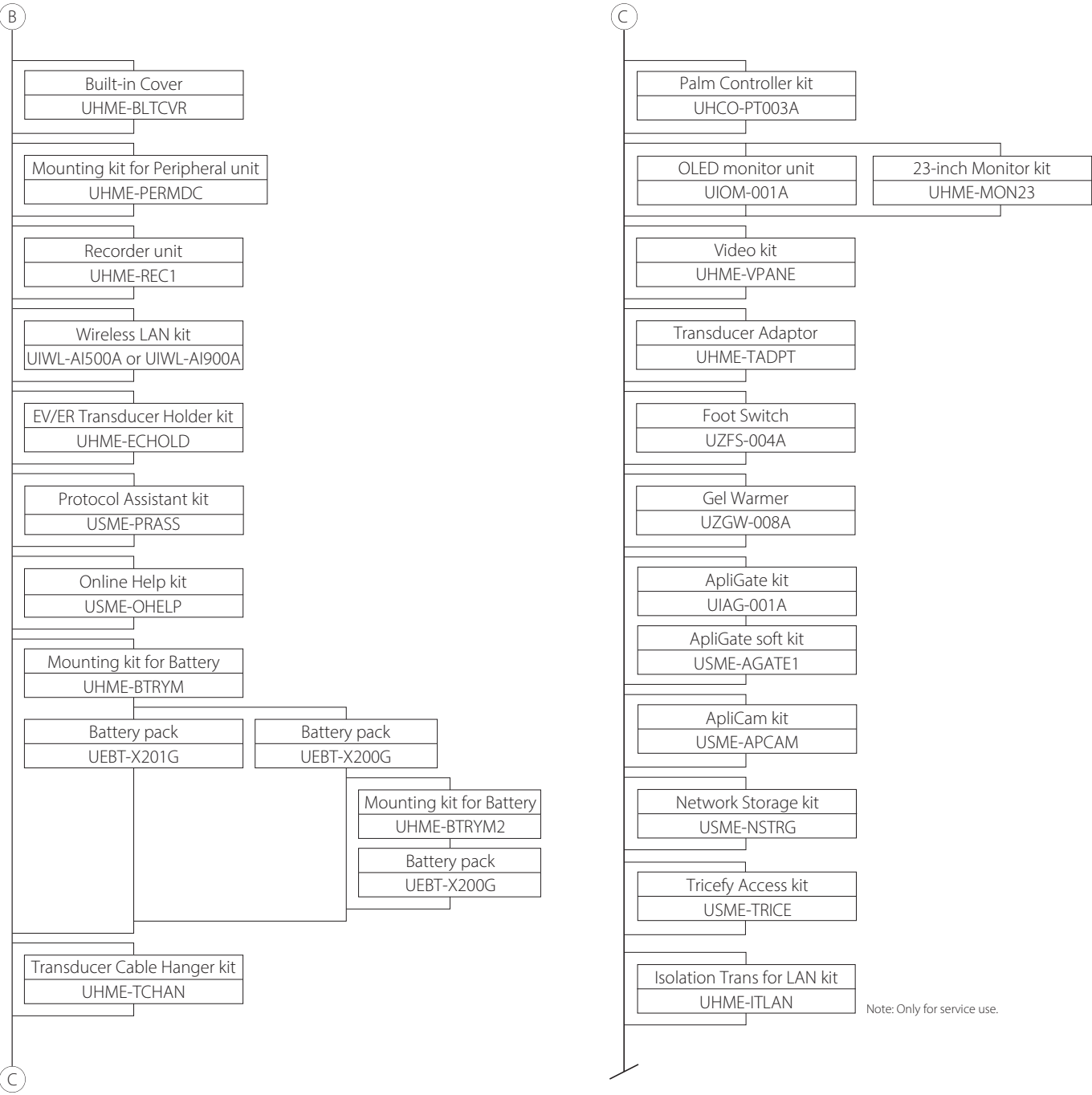
**<Options for main unit>**

Unit	Model name	Remarks	Main unit		
			Aplio me	Aplio me WH model	Applicable Version
Stress Echo kit	USME-STRES, USME-STRES/EL	Adds cardiac stress examination function to the system. (UHME-REFSG is required.)	Op.	Op.	V1.0 or later
Auto GLS kit	USME-AGLS, USME-AGLS/EL	Enables easy full LV(left ventricular function)assessment including bull's eye (Polarmap), EF (Ejection Fraction) and GLS (Quick Strain). (USME-2DWMT is required.)	Op.	Op.	V1.0 or later
Auto EF Measurement kit	USME-AEFM, USME-AEFM/EL	Software to enable Ejection Fraction to be measured automatically.	Op.	Op.	V1.0 or later
2D Wall Motion Tracking kit	USME-2DWMT, USME-2DWMT/EL	Adds cardiac wall motion analysis function for LV and LA (left atrial volume) to the system. (For non-fetal use, UHME-REFSG is required.)	Op.	Op.	V1.0 or later
2D Wall Motion Tracking Fetal kit	USME-2DWMTF, USME-2DWMTF/ EL	This kit enables cardiac wall motion analysis function for fetal heart (LV and basic RV) using data from a convex transducer. (USME-2DWMT is required.)	Op.	Op.	V2.0 or later
Measurement Assistant kit	USBE-MASS, USBE-MASS/EL	Automatic measurements which supports the reduction in the variability of standard measurements.	Op.	Op.	V2.0 or later
Workflow Navigator kit	USME-WFNAV, USME-WFNAV/EL	This kit activates automatically and indicates the next procedure based on the ASE (American Society of Echocardiography) guideline after completing the preceding step in the workflow examination in Cardiology.	Op.	Op.	V1.0 or later
CW kit	UHFL-CW	For cardiovascular examinations, add Continuous Doppler capability to sector.	Op.	Op.	V1.0 or later
Pencil unit	UHME-PENCL	This unit is used to add connectors for pencil transducers. (UHFL-CW is required.)	Op.	Op.	V2.0 or later
Reference Signal unit	UHME-REFSG	Hardware kit to display reference signals (ECG (Electrocardiogram) waveforms etc.). (UJUR-AI900A or UJUR-AI901A is required.)	Op.	Op.	V1.0 or later
Reference Signal cable	UJUR-AI900A	For cardiovascular examinations (for regions other than the USA): ECG, respiration, ECG gating, heart rate (UHME-REFSG is required.)	Op.	Op.	V1.0 or later
	UJUR-AI901A	For cardiovascular examinations (for the USA and Canada): ECG, respiration, ECG gating, heart rate. (UHME-REFSG is required.)	Op.	Op.	V1.0 or later
M-TEE Hanger kit	UHME-TEEHG1	TEE transducer hanger for PET-512MD	Op.	Op.	V2.0 or later
Fetal Heart MPI Measurement kit	USME-FHMPI, USME-FHMPI/EL	This kit enables MPI (Myocardial Performance Index). The MPI value can be calculated from the time change curve in TDI.	Op.	Op.	V1.0 or later
Measurement Z score kit	USME-MEASZ, USME-MEASZ/EL	This kit enables Z-score analysis for the measurement results.	Op.	Op.	V1.0 or later
Tricify Access kit	USME-TRICE, USME-TRICE/EL	This kit enables to access Tricify™ which is a cloud service for clinical images.	Op.	Op.	V1.0 or later
Smart Fetal Heart kit	USBE-SFH, USBE-SFH/EL	This kit enables the automatic generation of standard fetal heart views from a 4 chamber volume data set.	Op.	Op.	V2.0 or later
CHI kit	USME-CHI, USME-CHI/EL	Adds Contrast Imaging function to the system.	Op.	Op.	V1.0 or later
Elastography-FLR kit	USME-SELFL, USME-SELFL/EL	This kit enables Elastography with FLR measurement.	Op.	Op.	V1.0 or later
Elastography kit	USME-SEL, USME-SEL/EL	This kit enables Elastography without FLR measurement.	Op.	Op.	V1.0 or later

Unit	Model name	Remarks	Main unit		
			Applio me	Applio me WH model	Applicable Version
Shear Wave kit	USME-SWE, USME-SWE/EL	This kit allows tissue stiffness to be visualized by generating images that show shear wave propagation.	Op.	Op.	V1.0 or later
Mecha4D unit	UHCO-M4D	This unit is required for using the 4D transducer.	Op.	Std.	V1.0 or later
Luminance kit	USME-LUMIN, USME-LUMIN/EL	Image processing technology that makes 3D/4D images of fetuses and anatomical structures appear more realistic. (UHCO-M4D is required.)	Op.	Std.	V1.0 or later
3D Printer Format Export kit	USBE-3DPRTF, USBE-3DPRTF/EL	This kit enables output of volume data for Smart 3D and Mechanical 4D to 3D printers.	Op.	Op.	V2.0 or later
Auto Volume Measurement kit	USME-AVOLM, USME-AVOLM/EL	Used for calculating the volume by extracting the contours for regions with lower brightness in the 3D Volume image acquired in 4D mode. Enables volume measurement, e.g., antral follicle count. (UHCO-M4D is required.)	Op.	Op.	V1.0 or later
Attenuation Imaging kit	USME-ATI, USME-ATI/EL	This kit enables visualization of ultrasound frequency-dependent attenuation coefficient within tissue.	Op.	Op.	V1.0 or later
Panoramic View kit	USME-PANVI, USME-PANVI/EL	B/W images can be obtained with a wider field of view by moving the transducer in a lateral direction.	Op.	Op.	V1.0 or later
Contrast Enhance kit	USME-CENH, USME-CENH/EL	Enables the examiner to improve visibility of the cavities and thus the delineation of the myocardium (Clarity).	Op.	Op.	V1.0 or later
General Imaging kit	USME-GIMG, USME-GIMG/EL	This kit allows usage of General Imaging.	NA	Op.	V1.0 or later
Superb Micro-vascular Imaging kit	USME-SMI, USME-SMI/EL	Visualize low-velocity blood flow at a high frequency rate.	Op.	Std.	V1.0 or later
Liver Package Basic kit	USME-LVRP, USME-LVRP/EL	Following optional kits are included. Optional kits: USME-SWE, USME-ATI	Op.	Op.	V1.0 or later
Multi Parametric Report kit	USME-MPR, USME-MPR/EL	This kit enables a combined report for the abdominal measurement applications. (USME-SWE or USME-LVRP is required.)	Op.	Op.	V1.0 or later
MicroPure kit	USME-MPURE, USME-MPURE/EL	This kit enables MicroPure, which supports visualization of small structures.	Op.	Op.	V1.0 or later
AppliGate kit	UIAG-001A	Video capture unit, HDMI to USB converter (USME-AGATE1 is required.)	Op.	Op.	V1.0 or later
AppliGate soft kit	USME-AGATE1, USME-AGATE1/EL	AppliGate software (UIAG-001A is required.)	Op.	Op.	V1.0 or later
AppliCam kit	USME-APCAM, USME-APCAM/EL	Video clip captured by the camera which is connected to the main unit can be displayed on the screen as picture-in-picture.	Op.	Op.	V1.0 or later
Network Storage kit	USME-NSTRG, USME-NSTRG/EL	This kit enables large capacity RAW data management with NAS (Network Attached Storage) which is commercially available. (NAS itself is not included.)	Op.	Op.	V1.0 or later
Online Help kit	USME-OHELP, USME-OHELP/EL	Kit for displaying the operation manual on the observation monitor.	Op.	Op.	V1.0 or later
Protocol Assistant kit	USME-PRASS, USME-PRASS/EL	A sequence of operations is registered, and each operation is executed by single switch operation. Not necessary when USME-STRES is installed.	Op.	Op.	V1.0 or later
Reference Image kit	USME-REFIM, USME-REFIM/EL	Software to enable images from a previous examination to be displayed at the right of the screen.	Op.	Op.	V1.0 or later
Security Management kit	USME-SECM	This kit provides software for security management of the system.	Op.	Op.	V1.0 or later
IOTA kit	USME-IOTA, USME-IOTA/EL	This kit enables International Ovarian Tumor Analysis. Only available in EU member countries.	Op.	Op.	V1.0 or later
RADS kit	USBE-RADS, USBE-RADS/EL	This kit enables the Reporting and Data System.	Op.	Op.	V2.0 or later
Ultra-High freq kit	USME-UHF, USME-UHF/EL	This kit enables to use of over 22 MHz transducer.	Op.	Op.	V1.0 or later
Isolation Trans for LAN kit	UHME-ITLAN	Isolation trans for the LAN port for remote maintenance. Only for service use.	Op.	Op.	V1.0 or later
Palm Controller kit	UHCO-PT003A	Pointing device, dial on track ball allows easier Gain adjustment without reaching out for another buttons.	Op.	Op.	V1.0 or later
Built-in Cover	UHME-BLTCVR	Cover for Reference Signal unit and/or Printers, Recorder unit.	Op.	Op.	V1.0 or later

Unit	Model name	Remarks	Main unit		
			Aplio me	Aplio me WH model	Applicable Version
Recorder unit	UHME-REC1	Video recording device with mounting parts and cables	Op.	Op.	V1.0 or later
Battery pack	UEBT-X200G	The battery pack provides operational power without being connected to a power outlet (Approx. 120 minutes). The battery pack can be used up to 2 units. Note that UEBT-X201G cannot be used at the same time.	Op.	Op.	V1.0 or later
	UEBT-X201G	Small capacity (Approx. 20 minutes) battery pack. The battery must be used solely.	Op.	Op.	V1.0 or later
Mounting kit for Battery	UHME-BTRYM	This kit is necessary when installing the battery pack.	Op.	Op.	V1.0 or later
Mounting kit for 2nd Battery	UHME-BTRYM2	This kit is necessary when installing the 2nd battery pack. Only for UEBT-X200G. Only available when 1st battery is UEBT-X200G.	Op.	Op.	V1.0 or later
EV/ER Transducer Holder kit	UHME-ECHOLD	EV or ER transducer can be put on the left side of the operation panel.	Op.	Op.	V1.0 or later
ECG Cable Hanger kit	UHME-REFCH	Hook used to hang the ECG cables on the front of the operating panel.	Op.	Op.	V1.0 or later
Transducer Cable Hanger kit	UHME-TCHAN	Expandable arm for hang transducer cables.	Op.	Op.	V1.0 or later
Video kit	UHME-VPANE	Add some video I/O ports (Composite video, Y/C video) on the rear panel.	Op.	Op.	V1.0 or later
Transducer Adaptor	UHME-TADPT	Transducer connector adaptor for PET-512MD and PET-835LA.	Op.	Op.	V2.0 or later.
OLED monitor unit	UIOM-001A	21.6-inch wide OLED Monitor to replace LCD Monitor with LED back light. Not available with UHME-MON23.	Op.	Op.	V1.0 or later
23-inch Monitor kit	UHME-MON23	23-inch LCD monitor with LED back light replace 21.5-inch monitor. Not available with UIOM-001A.	Op.	N/A	V1.1 or later
Wireless LAN kit	UIWL-AI900A	This kit enables connection to the DICOM network via wireless LAN. (For Singapore, Russia, Australia, and Turkey.)	Op.	Op.	V1.0 or later
	UIWL-A500A	This kit used to establish connection to the DICOM network via wireless LAN. Compiles with the Radio Law of Japan and applicable laws and regulations of USA, Canada, EU member states, Iceland, Norway, Liechtenstein, and Switzerland.	Op.	Op.	V1.0 or later
Foot switch	UZFS-004A	Switch used for freezing, printing, and some other operations by foot.	Op.	Op.	V1.0 or later
Gel warmer	UZGW-008A	This unit warms the ultrasound gel to a suitable temperature.	Op.	Op.	V1.0 or later
Mounting kit for Peripheral unit	UHME-PERMDC	Mounting kit for DC powered B/W printer	Op.	Op.	V1.0 or later
Local Language Key-TOP kit	UHFL-FRENCH	This kit is intended to change the key tops of the full keyboard to support specific languages.	Op.	Op.	V1.0 or later
	UHFL-GERMAN				
	UHFL-ITALIA				
	UHFL-SPAIN				
	UHFL-DANISH				
	UHFL-NORWAY				
	UHFL-SCANDI				
	UHFL-RUSSIA				
	UHFL-PORTUG				V2.0 or later
	UHFL-HNGRY				V2.0 or later





## TRANSDUCER OPTIONS/OPERATION MODES

Model name		Number of elements	Label	Freq. (MHz)	Displayed range of frequency (MHz)	2D	Precision Imaging	ApliPure	Full Focus	Ultra Wide View	Panoramic View	Micro Pure
PSU-28BT		–	6S1	3.0	1.5~6.0	✓	✓	–	✓	–	✓	–
PSU-30BT		90	5S2	3.0	1.7~5.2	✓	✓	–	✓	–	✓	–
PSU-50BT		96	6S3	5.0	3.0~8.2	✓	✓	–	✓	–	✓	–
PSU-70BT		128	10S4	7.0	3.5~9.0	✓	✓	–	✓	–	✓	–
PVL-715RS	Convex	128	11CL4	7.5	4.5~9.0	✓	✓	✓	✓	–	✓	–
	Linear	128		7.5	4.5~9.0	✓	✓	✓	✓	–	✓	–
PVU-350BTP		128	6CP1	3.5	2.0~4.5	✓	✓	✓	✓	–	✓	–
PVU-375BT		128	6C1	3.5	1.5~6.1	✓	✓	✓	✓	✓	✓	–
PVU-382BT		128	6MC1	3.5	1.8~5.0	✓	✓	✓	✓	–	✓	–
PVU-475BT		192	8C1	4.0	1.8~6.4	✓	✓	✓	✓	✓	✓	–
PVU-574BT		–	10C1	5.0	2.0~9.7	✓	✓	✓	✓	✓	✓	–
PVU-674BT		192	10C3	6.0	3.5~9.7	✓	✓	✓	✓	–	✓	–
PVU-674MVS		128	9CV2	6.0	2.5~7.5	✓	✓	✓	✓	–	✓	–
PVU-681MVL		192	11CV3	6.0	3.6~11.0	✓	✓	✓	✓	–	✓	–
PVU-712BTE		128	11MC3	7.0	3.3~11.0	✓	✓	✓	✓	–	✓	–
PVU-745BTF		128	11CI4	7.0	3.0~10.0	✓	✓	✓	✓	–	✓	–
PVU-745BTH		128	11CI4	7.0	3.0~10.0	✓	✓	✓	✓	–	✓	–
PVU-745BTV		128	11CI4	7.0	3.2~10.0	✓	✓	✓	✓	–	✓	–
PVU-781VTE		150	11C3	7.0	3.6~11.0	✓	✓	✓	✓	–	✓	–
PLU-308BTP		128	6LP3	3.75	2.0~5.5	✓	✓	✓	✓	–	–	–
PLU-704BT		128	11L4	7.0	3.0~8.5	✓	✓	✓	✓	–	✓	–
PLU-705BTF		192	11LI4	7.0	3.8~8.4	✓	✓	✓	✓	–	✓	–
PLU-705BTH		192	11LI4	7.0	3.8~8.4	✓	✓	✓	✓	–	✓	–
PLU-805BT		244	12L4	8.0	3.0~12.0	✓	✓	✓	✓	–	✓	–
PLU-1005BT		192	14L5	10.0	3.8~14.5	✓	✓	✓	✓	–	✓	✓
PLU-1202BT		128	17LH7	12.0	4.5~17.0	✓	✓	✓	✓	–	✓	–
PLU-1204BX		–	18LX7	12.0	4.5~18.0	✓	✓	✓	✓	–	✓	✓
PLU-1204BT		192	18L7	12.0	4.5~18.0	✓	✓	✓	✓	–	✓	✓
PLU-2002BT		160	22LH8	20.0	8.8~22.0	✓	✓	✓	✓	–	✓	–
PET-512MD		64	8SM2	5.0	3.0~8.5	✓	✓	–	✓	–	–	–
PET-835LA		–	12CI4	8.0	3.5~9.0	✓	✓	✓	✓	–	✓	–
PC-20M		–	P2	2.0	–	–	–	–	–	–	–	–
PC-50M		–	P5	5.0	–	–	–	–	–	–	–	–

**TRANSDUCER OPTIONS/OPERATION MODES**

Model name	BEAM	M	CDI	Power	TDI	Elasto- graphy	SMI/ ADF	SWE	ATI	PWD	CWD	2D WMT
PSU-28BT	–	✓	✓	✓	✓	–	✓	–	–	✓	✓	✓
PSU-30BT	–	✓	✓	✓	✓	–	✓	–	–	✓	✓	✓
PSU-50BT	–	✓	✓	✓	✓	–	✓	–	–	✓	✓	✓
PSU-70BT	–	✓	✓	✓	✓	–	✓	–	–	✓	✓	✓
PVL-715RS	Convex	–	✓	✓	–	–	✓	–	–	✓	–	–
	Linear	–	✓	✓	–	–	✓	–	–	✓	–	–
PVU-350BTP	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-375BT	–	✓	✓	✓	–	–	✓	✓	✓	✓	–	–
PVU-382BT	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-475BT	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–
PVU-574BT	–	✓	✓	✓	✓	–	✓	✓	–	✓	–	–
PVU-674BT	–	✓	✓	✓	✓	–	✓	–	–	✓	–	–
PVU-674MVS	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-681MVL	–	✓	✓	✓	–	✓	✓	–	–	✓	–	–
PVU-712BTE	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-745BTF	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-745BTH	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-745BTV	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PVU-781VTE	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PLU-308BTP	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PLU-704BT	✓	✓	✓	✓	–	–	✓	–	–	✓	–	–
PLU-705BTF	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PLU-705BTH	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PLU-805BT	✓	✓	✓	✓	–	✓	✓	–	–	✓	–	–
PLU-1005BT	✓	✓	✓	✓	–	✓	✓	✓	–	✓	–	–
PLU-1202BT	–	✓	✓	✓	–	✓	✓	–	–	✓	–	–
PLU-1204BX	✓	✓	✓	✓	–	✓	✓	–	–	✓	–	–
PLU-1204BT	✓	✓	✓	✓	–	✓	✓	–	–	✓	–	–
PLU-2002BT	–	✓	✓	✓	–	–	✓	–	–	✓	–	–
PET-512MD	–	✓	✓	–	✓	–	–	–	–	✓	✓	✓
PET-835LA	–	✓	✓	✓	–	✓	✓	–	–	✓	–	–
PC-20M	–	–	–	–	–	–	–	–	–	–	✓	–
PC-50M	–	–	–	–	–	–	–	–	–	–	✓	–



## TRANSDUCER OPTIONS/OPERATION MODES

Model name	CHI				4D	STIC	STIC Color	Smart 3D	Remarks	Applicable Version
	2D	SMI	ADF	MFI						
PSU-28BT	✓	–	–	✓	–	–	–	–	Using Single Crystal technology.	V2.0 or later
PSU-30BT	✓	–	–	✓	–	–	–	–	–	V1.0 or later
PSU-50BT	–	–	–	–	–	–	–	–	–	V1.0 or later
PSU-70BT	✓	–	–	✓	–	–	–	–	–	V2.0 or later
PVL-715RS	Convex	✓	–	–	✓	–	–	–	–	V1.0 or later
	Linear	–	–	–	–	–	–	–	–	V1.0 or later
PVU-350BTP	✓	✓	✓	✓	–	–	–	✓	–	V2.0 or later
PVU-375BT	✓	✓	✓	✓	–	–	–	✓	–	V1.0 or later
PVU-382BT	✓	✓	✓	✓	–	–	–	✓	–	V1.1 or later
PVU-475BT	✓	✓	✓	✓	–	–	–	✓	Using Single Crystal technology.	V1.1 or later
PVU-574BT	✓	✓	✓	✓	–	–	–	✓	Using Single Crystal technology.	V2.0 or later
PVU-674BT	✓	✓	–	✓	–	–	–	✓	–	V2.0 or later
PVU-674MVS	–	–	–	–	✓	✓	✓	–	UHCO-M4D is required.	V1.0 or later
PVU-681MVL	✓	✓	–	✓	✓	–	–	–	UHCO-M4D is required.	V1.1 or later
PVU-712BTE	–	–	–	–	–	–	–	✓	–	V1.0 or later
PVU-745BTF	✓	–	–	✓	–	–	–	✓	–	V2.0 or later
PVU-745BTH	✓	–	–	✓	–	–	–	✓	–	V2.0 or later
PVU-745BTV	–	–	–	–	–	–	–	✓	–	V2.0 or later
PVU-781VTE	✓	✓	–	✓	–	–	–	✓	–	V1.0 or later
PLU-308BTP	–	–	–	–	–	–	–	✓	–	V2.0 or later
PLU-704BT	✓	✓	–	✓	–	–	–	✓	–	V2.0 or later
PLU-705BTF	✓	–	–	✓	–	–	–	✓	–	V2.0 or later
PLU-705BTH	✓	–	–	✓	–	–	–	✓	–	V2.0 or later
PLU-805BT	✓	✓	–	✓	–	–	–	✓	–	V1.0 or later
PLU-1005BT	✓	✓	✓	✓	–	–	–	✓	–	V1.0 or later
PLU-1202BT	✓	–	–	✓	–	–	–	✓	–	V2.0 or later
PLU-1204BX	✓	✓	–	✓	–	–	–	✓	–	V2.0 or later
PLU-1204BT	✓	✓	–	✓	–	–	–	✓	–	V1.1 or later
PLU-2002BT	✓	✓	–	✓	–	–	–	✓	USME-UHF is required.	V1.0 or later
PET-512MD	–	–	–	–	–	–	–	–	UHME-TADPT is required.	V2.0 or later
PET-835LA	✓	✓	–	✓	–	–	–	✓	UHME-TADPT is required.	V2.0 or later
PC-20M	–	–	–	–	–	–	–	–	UHME-PENCL is required.	V2.0 or later
PC-50M	–	–	–	–	–	–	–	–	UHME-PENCL is required.	V2.0 or later

## SPECIFICATIONS

### System

- Scan methods
  - Linear scan  
(some transducers can perform oblique scanning.)
  - Sector scan
  - Convex scan
  - Trapezoid scan
  - Curved vector scan
- Monitor
  - High-definition 21.5-inch Wide LCD monitor with LED backlight
    - Resolution: 1920 × 1080 (Full HD)
    - Viewing angle: 178 degrees
    - Contrast ratio: typ. 1200: 1
    - Response time (ms): typ. 22
    - Luminance (cd/m<sup>2</sup>): More than 200
    - Conformance Standard: DICOM Part 14
  - 4K 21.6-inch Wide OLED monitor (UIOM-001A is required.)
    - Resolution: 3840 × 2160
    - Viewing angle: 178 degrees \*CR ≥ 10
    - Contrast ratio: typ. 1000000: 1
    - Response time (μs): typ. 40 (30 + 10)  
\*Black → White → Black
    - Luminance (cd/m<sup>2</sup>): typ. 200 (7500 K)  
typ. 145 (13000 K)
    - Conformance Standard: DICOM Part 14
  - 23-inch Wide monitor with LED backlight
    - Resolution: 1920 × 1080 (Full HD)
    - Viewing angle: 178 degrees
    - Contrast ratio: typ. 1200: 1
    - Response time (ms): typ. 16
    - Luminance (cd/m<sup>2</sup>): More than 200
    - Conformance Standard: DICOM Part 14
- Presets
  - System preset: 1 type

### Compatible Peripheral Devices

- Black-and-white digital printer
    - UP-D711MD: DC (12 V to 24 V, SONY)
    - UP-D898DC: DC (12 V to 24 V, SONY)
  - Recorder unit
    - UHME-REC1: DC (12 V)
  - USB flash drive
  - Barcode reader
- Note: Regions where CE marking is applicable (Europe, Australia, and Turkey) are not supported.
- Camera
    - Applicable OS: Windows® 10
    - Interface: USB2.0 type-A
    - Aspect ratio: 4:3
    - Resolution: 640:480 pixel or more
    - Driver: Compatible with the driver installed in Windows® 10.

### 2D mode (B mode)

- Viewing Depth
  - The viewing depth depends on the transducer used.
  - Convex
    - Minimum depth: 2 cm
    - Maximum depth: 50 cm
  - Linear
    - Minimum depth: 1 cm
    - Maximum depth: 28 cm
  - Sector
    - Minimum depth: 1 cm
    - Maximum depth: 28 cm
- Line density
  - The line density differs depending on the transducer used.
  - The line density can be changed.
- Ultrasound Frame Rate
  - The ultrasound frame rate can be adjusted by using the following in combination.
  - Line density
  - Parallel signal processing
- Scan Angle and Scan Width
  - Adjustment of the field width (scan width, scan angle) is possible.
  - Adjustment of beam steering (scanning position) is possible.
  - Adjustment of linear beam steering is possible.
- PAN/EXPAND
  - Real-time PAN/EXPAND
    - Scale enlargement/reduction using the encoder is possible.
    - Movement to the desired section using the trackball is possible.
    - The transmission focus is optimized in steps above.
    - The specified range of an image can be magnified (Spot Zoom).
- Transmission Focus
  - Transmission conditions: A maximum of 8 steps
  - Full focus can be selected.
- Transmission Frequency
  - Multi frequency: 3 frequencies can be selected from 13 types.
- GAIN
  - The display brightness for 2D can be changed.  
(Also available when the image is frozen.)
  - The display brightness for 2D and M can be changed simultaneously.
- STC
  - Software STC
    - Depth direction from the body surface: 8-step slide controls (common for 2D and M)
    - Lateral direction in the image: 6-step slide controls (common for 2D and M)

- Hardware STC
  - 8-step slide controls (common for 2D and M)
- Acoustic Output
  - Adjustment is possible to 100%.
- Adjusting the 2D Image Quality
  - Dynamic range (Also available when the image is frozen.)
  - Time-smoothing (persistence)
  - Gamma (Also available when the image is frozen.)
  - Auto gain control
  - Frame rate
  - ApliPure
  - Precision
- 2D Map
  - The grayscale pattern can be changed and virtual color setting for the 2D image is possible.
  - Settings can also be changed when the image is frozen.
- 2D Quick Scan
  - The gain and STC can be adjusted automatically.
- THI (Tissue Harmonic Imaging)
  - THI signal processing methods
    - Pulse subtraction method
    - Filtering method
    - Differential method
- Display Orientation
  - Top/bottom reversal is possible.
  - Left/right reversal is possible.
- Image Size
  - The displayed image size can be switched between small and large.
- ApliPure
  - ApliPure
 

This function reduces ultrasound wave interference within tissues, which appear as speckle patterns or speckle noise on 2D images.
  - ApliPure Plus
 

This function can display the boundaries between tissues more clearly and reduce speckle noise and acoustic shadows.
- MicroPure (USME-MPURE is required.)
  - Small structures can be extracted by performing filtering for 2D-mode images.
  - Visualization of very small calcifications and other extremely small lesions can be improved.
- Precision Imaging
  - Precision Plus
    - Structures in 2D-mode images can be displayed more clearly and the background can be displayed more smoothly.
    - Saturation in high-intensity regions of tissue structures is reduced, allowing the tissue structures to be displayed in a more natural manner.
- TSO
  - Reception focus compensation can be performed.

- Automatic reception focus compensation can be performed (Auto TSO).
- BEAM (Biopsy Enhancement Auto Mode)
  - Display of the needle can be enhanced in the image.
  - The enhancement level can be adjusted.

## M mode

- M Transmission Frequency
  - Multi frequency: 5 types (at maximum)
- M Sweep Speed
  - The Sweep Speed can be changed in M mode.
- M Gain
  - M gain can be corrected for 2D gain.
- M Image Processing Parameters
  - M dynamic range (Can be changed even after the image has been frozen.)
  - M auto gain control
  - M gamma (Can be changed even after the image has been frozen.)
- M Map
  - M image virtual color setting is possible. The setting can be changed even after the image has been frozen.
- THI
  - 2D mode and THI mode are linked, and M images can be displayed in THI mode.
    - Pulse subtraction method
    - Filtering method
    - Differential method
- M Mark
  - The M cursor can be displayed on 2D or C images.
  - The M cursor displayed position can be adjusted.
- Flex-M
  - Any desired plane can be set on the 2D-mode image and the M-mode image for the set plane can be reconstructed.

## Doppler (Spectrum Doppler)

- Doppler Mode
  - PWD (pulsed-wave Doppler)
  - HPRF PWD (can be switched to HPRF mode)
  - CWD (continuous-wave Doppler) (UHFL-CW is required.)
  - Pencil CWD (pencil-type transducer) (UHME-PENCL is required.)
- Doppler PRF (Pulse Repetition Frequency)
  - PWD: 0.3 kHz to 52.1 kHz
  - CWD: 1.4 kHz to 52.1 kHz (UHFL-CW is required.)
- Doppler Scan
  - 2D/D simultaneous scan
  - D only scan
- Doppler Sampling Volume
  - The Doppler range gate width can be changed. (minimum 0.3 mm)
- Doppler Sampling Shift
  - 0 cm to the maximum depth

- Doppler Cursor Mode
  - Operation for the 2D live image is possible with the Doppler sampling volume displayed in it.
- Doppler Filter
  - The Doppler filter cutoff can be changed.
- Doppler Gain
  - The display brightness for Doppler can be changed.
- Doppler Quick Scan
  - The Doppler scale and baseline shift can be adjusted automatically.
- Doppler Frequency Analysis and Image Processing
  - Method: FFT
  - No. of data items: 255 (maximum)
- Indication of Doppler Spectrum Direction
  - Reverse display of the velocity spectrum is possible.
- Doppler Baseline Shift (Zero Shift)
  - The velocity baseline of Doppler images can be shifted.
  - The baseline shift setting can also be adjusted when images that were frozen are displayed.
- Doppler Audio
  - Stereo output (blood flow toward and away from the transducer)
- Doppler Map
  - The brightness conversion table and the virtual color for Doppler images can be set.
- Display of Doppler Scale
  - 2 types (velocity, Doppler shift frequency)
- Doppler Focus
  - Automatically follows the sample position.
- Doppler Angle Mark
  - This mark is displayed for measuring the angle between the direction of the velocity and the direction of the ultrasound beam.
- Doppler Oblique Scan (PWD Steering)
  - Oblique scans are possible using a specific linear transducer.
  - Auto Invert function
- Doppler Multifrequency
  - The PWD transmission frequency can be changed.
- Doppler Sweep Speed
  - The Sweep Speed can be changed in Doppler mode.
- Doppler Display Dynamic Range
  - The display dynamic range of the Doppler image can be changed.
- Doppler Auto Trace
  - (measurement performed after freezing the image)
  - Measurement of peak velocity and mean velocity is possible by automatic velocity tracing.
  - The following Doppler waveform trace is possible.
    - Trace style: Waveform Peak, Mean, Peak + Mean
    - Trace area specified: Forward, Reverse, Full, Auto
    - Measurement item: Max, Min, Mean, PI, RI, etc.

## Color Doppler

### Color Doppler Mode

- Display mode
  - CDI mode
    - Flow velocity
    - Flow velocity/variance
    - Power
  - Power Angio mode
  - TDI mode
  - TwinView
    - Simultaneous dual-screen display with 2D mode is available.
  - SMI (Superb Micro-vascular Imaging) mode (USME-SMI is required.)
    - Clutter suppressed
    - Blood flow enhanced
  - ADF (Dynamic Flow) mode
    - Direction display
- C Map
  - C map can be selected for each color Doppler mode.
  - Changes can also be made when the image is frozen.
- C Scale (Switching the Velocity Range)
  - The velocity range can be changed.
- C Time-Smoothing (Persistence)
  - The result of temporal correlation processing between the previous image and current image can be displayed.
- C Baseline (Zero Shift)
  - The velocity baseline of color Doppler images can be shifted.
  - The baseline shift setting can also be adjusted when images that were frozen or images in the image memory are displayed.
- Reverse C Display
  - Coloring is reversed.
  - Changes can also be made when the image is frozen.
- Black and White/Color Balance
  - By comparing the color Doppler images and B/W images, color weighting to B/W can be set.
  - Changes can also be made when the image is frozen.
- C Gain
  - The display brightness of color Doppler images can be changed.
- C Multi-frequency
  - The transmission frequency for color Doppler image acquisition can be changed.
- C Line density
  - The color Doppler image line density can be changed.
- C ROI (region of interest)
  - Position, size, and steering adjustment is possible for color Doppler ROIs.
- C Transmit Focus
  - Automatically follows the color Doppler ROI position.
- C Filter
  - Color Doppler low-cut filter can be changed.

- Variance Curve
  - The display of the color variance component can be adjusted.
- Color Quick Scan
  - The following operations are possible when a linear transducer is used.
    - The position of a color ROI and angle of color steering are adjusted automatically.
    - When PWD sampling volume is displayed, the Doppler gate position, Doppler steering angle, and Doppler angle are adjusted automatically.

### Color Doppler M mode (MDF Mode)

- Display mode
  - M-mode CDI
    - Velocity display
    - Velocity/variance display
    - Power display
  - M-TDI mode
- M Color Doppler Map (CDI MAP)
  - Color Doppler map can be selected for each mode.
- M Color Doppler Velocity Range Selection (C Scale)
  - The velocity range can be selected.
- M Color Doppler Baseline (C Baseline)
  - The zero-velocity line on the M Color Doppler image can be shifted.
  - The baseline shift setting can also be adjusted when images that were frozen are displayed or when the image in the image memory is played back.
- Color Reverse Display
  - The colors can be reversed.
  - Changes can also be made when the image is frozen.
- Black and White/Color Balance
  - Color weighting for B/W images can be set by comparing the M Color Doppler images and B/W images.
  - Changes can also be made when the image is frozen.
- Color Gain
  - The display brightness of the M Color Doppler image can be changed.
- M Color Doppler Multi-Frequency
  - Doppler transmission frequency can be selected in M Color Doppler image acquisition.
- M Color Doppler Filter
  - M Color Doppler low-cut filter can be changed.

### **Reference Signals**

(UHME-REFSG and UJUR-AI900A, or UHME-REFSG and UJUR-AI901A are required.)

- Type
    - ECG
      - Lead I is the standard connection.
      - External input is possible.
      - DC IN
- The connected device must comply with IEC 60601-1.

- Top/bottom inversion is possible.
- Lead switching
- Pacemaker
- INST
- Heart Rate
  - The heart mark blinks in synchronization with the heart beat detected by the ECG.
  - The heart rate is displayed.
- Reference Signal Sweep Speed
  - This changes the reference signal sweep speed.

### **Other Diagnostic Function**

- CHI (Contrast Harmonic Imaging) (USME-CHI is required.)
 

The second-harmonic wave signals from the microbubbles in the contrast medium can be effectively visualized.

  - The following image modes can be selected.
    - PS (Pulse Subtraction) -Low, PS-Low2
    - Fundamental
    - CHI ADF
    - SMI (Superb Micro-vascular Imaging) (USME-SMI is required.)
  - The following functions can be selected.
    - 2D TwinView
    - MFI (Micro Flow Imaging)
    - Image Stabilizer
    - MI Constant function
- Parametric MFI
  - Temporal information can be displayed as a color map superimposed on images acquired by 2D mode (without CHI starting up), ADF/SMI (Superb Micro-vascular Imaging) mode, and CHI mode (contrast image for the period from the start of contrast medium injection to the time when the contrast medium reaches the target region).
  - The following functions are available.
    - MFI
    - Image Stabilizer
- Mechanical 4D (UHCO-M4D is required.)
 

Three-dimensional image data (volume data) can be generated and displayed by using image data acquired for three-dimensional image reconstruction.

  - The following functions can be used.
    - Volume Color
    - Multi View
    - Magic Cut
    - VolPure
    - Volume View
    - STIC/STIC Color
    - Luminance (USME-LUMIN is required.)
    - OmniView
    - Auto flexible cut line
  - The following measurements can be performed.
    - MPR

- Multi Auto Volume measurement  
(USME-AVOLM is required.)
- Stress Echo (UHME-REFSG and UJUR-AI900A or UHME-REFSG and UJUR-AI901A are required.)  
Exercise and pharmacological stress echo examinations can be performed.
  - Data acquisition mode
    - This mode is intended for selecting and creating protocols.
  - Review mode
    - This mode provides playback function/data output function/WMS (Wall Motion Scoring) function.
- Panoramic View (USME-PANVI is required.)
  - A continuous image can be acquired by moving the transducer horizontally on the body surface.
  - Measurement using Panoramic View can be performed.
- Elastography (USME-SEL or USME-SELFL is required.)
  - Tissue stiffness can be visualized based on the changes in velocity resulting from physical compression and decompression of the target region.
  - FLR measurement can be performed to calculate the strain within the set ROI. (Not available in the USA.)
- VI (Vascularity Index)
  - The number of pixels in the Power image and within the ROI, the area of the Power image and of the ROI, and the ratio of the number of pixels in the Power image to the number of pixels within the ROI can be displayed for an image acquired in Power mode. This function can be used when a linear or convex transducer is selected.
- Histogram
  - The number of pixels, average gradation, standard deviation, and brightness distribution inside the ROI in the image acquired with 2D mode are displayed.
- Protocol Assistant (USME-PRASS is required)
  - A series of operations (a protocol) that has been created for the intended examination can be executed automatically. Protocols can be created and edited.
- Shear Wave (USME-SWE or USME-LVRP is required)  
Images representing the speed of propagation of tissue displacement (Shear Wave speed) can be visualized (Shear Wave scan) by locally displacing tissues by transmitting a burst wave with high acoustic pressure.
  - The following Shear Wave display modes are available.
    - Speed: Shear Wave speed display (m/s)
    - Elasticity: elasticity display (kPa)
    - Propagation: propagation display
  - ECG Sync Acquisition function can be used.
  - Shear Wave measurement can be performed.
- ATI (Attenuation Imaging) (USME-ATI or USME-LVRP is required)
  - The ultrasound wave attenuation can be displayed in color parametric and measured.
- Smart 3D  
3D image can be generated from the 2D image and any input volume shape.

- The following functions can be used.
  - Volume Color
  - Multi View
  - Volume View
  - Magic Cut
  - OmniView
  - CHI (USME-CHI is required.)
  - Shear Wave (USME-SWE is required.)
  - STL export (USB-3DPRTF is required.)
- Reference (USME-REFIM is required.)  
The ultrasound images of the current examination and the previously acquired image of the patient can be displayed simultaneously.
  - The following video modes can be selected.
    - 2D mode (B mode)
    - Color Doppler
    - MicroPure (USME-MPURE is required.)
  - The following image data can be referred to.
    - Still image acquired using CUS-AME00
    - Dynamic Image (raw data) acquired using CUS- AME00
  - The following measurement can be performed.  
Basic measurement

## Display-Related Features

- Display Method
  - Images on the main unit: 60 Hz non-interlaced display
  - Images from external playback devices: 60 Hz non-interlaced display
- Monitor Display/Character Display
  - ID area
    - Patient ID
    - Patient name
    - Hospital name
    - Date: Selected from among the formats shown below.  
YYYY/MM/DD  
MM/DD/YYYY  
DD/MM/YYYY  
YYYY: Western calendar year  
MM: Month  
DD: Day
  - Time: Selected from among the formats shown below.  
hh:mm:ss: AM (PM)  
hh:mm:ss: 24-hour representation  
hh: Hour  
mm: Minute  
ss: Second
- Recorder mark
- Age
- Sex
- Heart rate display (heart-shaped mark/heart rate)
- Name of the Imaging Preset
- Name of the operator
- Gestational age

- Acoustic power display area
  - Acoustic power value (%)
  - TI value
- Auto data
  - Frame rate
  - Acoustic power index = MI indication
  - Transducer frequency
  - Depth
  - Dynamic range
  - GAIN
  - CDI filter
  - PRF
  - Doppler filter
  - Doppler angle
  - Doppler gate size
- Thumbnail area
  - Image data acquired during the current examination is displayed.
  - Information from a previous examination of the patient currently being examined is displayed.
- Information message display area
  - An operation guide and other messages are displayed.
- Status area
 

The following system statuses can be displayed.

  - Battery capacity
  - DVD/CD write status
  - Network use status
  - NAS connection
  - PACS use status
  - Used space on SSD
  - Saving dynamic/still image
  - DICOM printer status/peripheral device status
  - USB flash drive status display
- Multi-function display area
  - Assignment statuses for trackball and surrounding switches and dials
- Annotation
  - Manual input using the keyboard is possible.
  - Auto annotation (previously specified text) is possible.
- Pictograms
  - Body icons and transducer mark
- Biopsy Guide Mark
  - Biopsy guide mark display is possible.
- Touch Panel (TCS: Touch Command Screen)
  - 10.1-inch LCD monitor: WXGA (1280 × 800)

- Language
  - The following languages are supported for the display of some screens and keyboard entry.

Supported languages	Screen display	Input by software keyboard	Input by hardware keyboard
English	✓	✓	✓
English (UK)	✓	✓ (same as "English")	✓ (same as "English")
German	✓	✓	✓
French	✓	✓	✓
Italian	✓	✓	✓
Spanish	✓	✓	✓
Danish	✓	✓	✓
Dutch	✓	–	–
Norwegian	✓	✓	✓
Swedish	✓	✓	✓
Finnish	✓	✓	–
Portuguese	✓	✓	✓
Hungarian	✓	✓	✓
Russian	✓	✓	✓
Japanese	✓	✓	✓
Chinese	✓	–	–

## Measurement Functions

### Basic Measurement Functions

- 2D-mode measurements
  - Distance
    - Distance
    - Trace Length
    - Mean-IMT
  - Area
  - Angle
    - Angle
    - Joint
  - Volume
  - Stenosis ratio
    - %Stenosis (Distance)
    - %Stenosis (Area)
- 4D-mode measurements (UHCO-M4D is required.)
  - Distance
    - Distance
    - Trace Length
  - Area
  - Angle
  - Volume
    - Volume
    - Auto Volume measurement (USME-AVOLM is required.)
  - Stenosis ratio
    - %Stenosis (Distance)
    - %Stenosis (Area)
  - Shear Wave measurement



- M-mode measurements

- Slope
- Distance
- Time
- Heart rate

- PW/CW Doppler measurements

(UHFL-CW is required for CW mode.)

- Velocity
- Acceleration
- Time
- Heart rate
- PI
- RI
- S/D
- Flow volume
- Doppler trace

### Application Measurement Functions

- Cardiac measurements

- 2D-mode measurements

- LV measurements
- LA measurements
- AV (aortic valve) measurements
- MV (mitral valve) measurements
- PV (pulmonary valve) measurements
- LV MASS measurements
- Auto EF measurements (USME-AEFM is required.)
- MPI measurements (USME-FHMPI is required.)

- M-mode measurements

- LV measurements
- AV measurements
- MV measurements

- Doppler measurements

- Trans-Aortic valve flow measurement
- Trans-Mitral valve flow measurement
- Trans-Pulmonary vein flow measurement
- Trans-Tricuspid valve flow measurement
- Trans-Pulmonary valve flow measurement
- Blood flow waveform auto measurements
- Coronary measurements
- PISA measurements

- OB (obstetrics) measurements

- The data for determining fetal growth based on the measured fetal size is displayed.
- The list of measured data or a graph of the measured value development (fetal growth conditions) is displayed.
- Week function (gestational age)
- Measurement data saving is possible.
- Auto NT measurement
- Fetal heart MPI measurement (USME-FHMPI is required.)
- Anatomy
- User chart registration
- Z score analysis (USME-MEASZ is required.)

- Vascular measurement

- CCA (Common Carotid Artery) measurement
- ECA (External Carotid Artery) measurement
- ICA (Internal Carotid Artery) measurement

- Vert A (Vertebral Artery) measurement
- Subclav A (Subclavian Artery) measurement
- Auto-IMT measurement
- IMT-C10 measurement

- User-registered measurements registration function.

- Measurement items and calculation items based on the measured values
- Layout setting on the Worksheet screen
- Switch layout setting of the touch panel
- Measurement package DICOM code registration

### Advanced Measurement Functions

- 2D wall motion tracking (USME-2DWMT is required.)

Wall motion can be analyzed by semi-automatically extracting the left ventricular myocardium from the image data acquired by the system and displaying it for the evaluation of myocardial motion.

- Wall motion tracking in 2D dynamic images
- Wall motion information display
- Polar map display
- Local/whole myocardial wall motion parameter curve display
- Parameter setting display of various parameters
- Analytical data output to a file
- Fetus mode (USME-2DWMTF is required.)
- Automatic analysis and synchronization of planes (USME-AGLS is required.)

### Measurement of Stored Image Data

The following measurements can be performed for the DICOM data (DICOM, with raw data, and without raw data) stored in HDD.

- Basic measurement
- Application measurement

### **Report Function**

- Worksheet functions

- The measurement and calculation items can be displayed for each application measurement.
- Data editing is possible (except for some items).
- Display of the following values can be set to ON or OFF. Mean value, latest value, maximum value, minimum value
- Trend graphs can be displayed (OB measurement worksheet).
- Multi Parametric Report, which allows organization of results acquired using multiple abdominal measurement applications in a worksheet, can be displayed. (USME-MPR is required.)
- Analysis results of RADS used during an examination can be displayed on the Worksheet. (USBE-RADS is required.)

- Report function (On Board Report)

- Reports can be created on the system.
- The created reports can be printed.
- The created reports can be output as PDF files.



- The report template can be edited.
- Comment entry is possible.
- Analysis results of RADS used during an examination can be displayed on the reports. (USB-RADS is required.)

Note: Only available in EU member states.

### Cine Memory (large-capacity image memory)

- Memory Capacity: 960 MB
- Record/Playback Mode
  - Loop playback is possible.
  - Frame advance playback is possible.
  - Cine playback is possible in Doppler or M mode.
  - Live images can be recorded (Clips, Auto Store).

### Recording Function

- Printers (option)
  - Black-and-white printer:USB connection
- Video Recording Units (option)
  - Recorder unit: UHME-REC1
- Electronic Filing
  - Hard disk drive (internal HDD, external HDD (option))
    - Internal SSD (SATA)
  - DVD/CD drive
  - USB flash drive
  - Network: DICOM connection
- NAS (USFL-NSTRG is required.)
  - Only NAS that satisfies the following specifications can be used
    - Protocol: SMB2.0 or later
    - LAN port: 1000 BASE-T or higher
    - Capacity: 12 TB or less

### Security Function

- Security Control
 

This system supports a function for recording the user's authorization and access log in order to protect personal information.

  - User authentication
  - Audit Log
  - De-identification (live/stored images)
- Antivirus
 

Whitelist-type software is used for protection against computer viruses.

  - Protection against computer viruses using Windows® functions (standard configuration)
 

Security is established using the whitelist-type software that is included in Windows® functions.
  - USME-SECM (security management kit) (option)
 

Trellix® Embedded Control (TEC) is used as the security management software. TEC is security software that employs whitelist protection. This software prevents execution of malware by allowing only executable files that have been registered in a whitelist to start.

### Disk Encryption Function

The following disk can be encrypted to prevent leakage of personal information.

- SSDs in the system
- USB flash drive

### Maintenance Function

- Remote Maintenance
  - This function makes it possible to remotely control the system for maintenance.
- Operation Status Report
  - The system operation status can be checked by a service engineer.
- Transducer Sensitivity Measurement Tool
  - Performance of transducers can be checked by service engineers using the transducer sensitivity measurement tool.

### Systematization

- Network
  - Ethernet: 10BASE-T/100BASE-TX/Gigabit Ethernet
  - Network client system
- Wireless Network (UIWL-A500A or UIWL-AI900A is required.)
 

Wireless network connection is possible with this function.

  - Standard
    - IEEE 802.11 b/g/n 2.4 GHz (UIWL-A500A, UIWL-AI900A)
    - IEEE 802.11 a/n/ac 5 GHz (UIWL-A500A)
  - Security
    - WPA2-PSK [AES]
    - WPA2-Enterprise [AES] (conformed)
 

For WPA2-Enterprise, authentication is performed based on communication with the authenticated server. Depending on the authenticated server used in combination, authentication may fail. Perform a connection test in advance.
  - Frequency
    - 2.4 GHz to 2.5 GHz CCK/OFDM modulation (UIWL-A500A, UIWL-AI900A)
    - 5 GHz OFDM, 802.11 n MCS0-7, 802.11 ac MCS0-9 code system (UIWL-A500A)
- DICOM Function
  - DICOM data type
    - US Image (still image)
    - US Multi Frame (dynamic image)
    - SC Image (storage in a separate file)
    - Enhanced US Volume (Volume data image)
    - Structured Report (measurement result information)
  - Server connection
    - Storage (Server/Media)
    - MWM (Modality Worklist Management)
    - MPPS (Modality Performed Procedure Step)
  - Storage function
    - Storage Commitment

- Query/retrieve
- Standard conformity check function
  - Verification (export/import)
- Print function
- Image Format to export
  - Still: BMP/JPEG
  - Movie: WMV9/H.264

## Signal I/O

- Transducer Connectors
  - Transducer connectors: 4
  - Pencil transducer connector: 1 (UHME-PENCL is required.)
- Recording Device Input/Output Signals
  - Digital image output
  - Digital image input
  - Audio output: L, R
- External Video Output
  - Composite video (UHME-VPANE is required.)
  - S-Video (UHME-VPANE is required.)
  - Digital image output
- External USB
  - 7 USB ports (4 on the rear of the main unit, 2 on the front of the main unit (support of USB 3.0), and one on the side of the operating panel)
- Ethernet
  - 10BASE-T/100BASE-TX/  
Gigabit Ethernet: 1 ch
- Footswitch (UZFS-004A is required.)
  - 3-switch footswitch
- Battery Mode (option)
  - The system can be operated in battery mode if the power supply from the outlet is interrupted due to power failure etc.

## Operating Conditions

### Power Supply Requirements

- Line voltage
  - Japan: 100 VAC  $\pm 10\%$
  - USA, Canada: 120 VAC  $\pm 10\%$
  - Europe: 220 to 240 VAC  $\pm 10\%$
  - Other 1: 110 to 120 VAC  $\pm 10\%$
  - Other 2: 220 to 240 VAC  $\pm 10\%$
- Line frequency 50/60 Hz  $\pm 1$  Hz
- Power capacity
  - Japan: 800 VA
  - USA, Canada: 800 VA
  - Europe: 800 VA
  - Other 1: 800 VA
  - Other 2: 800 VA

Note: The system includes the power cable for Type G or Type B plug. Depending on the type of medical outlet in the hospital, a conversion plug that conforms to the regulations of each country shall be provided.  
Cord sets including power cable and plug shall be provided with specifications that ensure the impedance of the protecting grounding conductor is 100 m $\Omega$  or less.

### Environmental Conditions

- Operating conditions
  - Ambient temperature: 10°C to 35°C (20°C to 35°C when a 4D transducer is used)
  - Relative humidity: 35% to 80% (no condensation)
  - Atmospheric pressure: 700 hPa to 1060 hPa
- Storage conditions
  - Ambient temperature: -10°C to 50°C
  - Relative humidity: 30% to 90% (no condensation)
  - Atmospheric pressure: 700 hPa to 1060 hPa

## Safety Classification

- According to the type of protection against electric shock
  - CLASS I or Internally Powered Equipment
- According to the degree of protection against electric shock
  - EQUIPMENT WITH TYPE-BF APPLIED PARTS (Transducer, ECG electrodes, PCG (Phonocardiogram) sensor, Pulse sensor)
- According to the degree of protection against harmful ingress of water
  - IPX0 (enclosed EQUIPMENT without protection against ingress of water)
  - However, the footswitch is IPX8 and the transducers are IPX7 (excluding the connector part).
- According to the degree of safety of application in the presence of a FLAMMABLE ANESTHETIC MIXTURE WITH AIR or WITH OXYGEN OR NITROUS OXIDE
  - EQUIPMENT not suitable for use in the presence of a FLAMMABLE ANESTHETIC MIXTURE WITH AIR or WITH OXYGEN OR NITROUS OXIDE
- According to the mode of operation
  - CONTINUOUS OPERATION
- Sterilization method
  - System main unit
    - Not suitable for sterilization
  - Transducers
    - Sterilization methods are specified in the relevant operation manuals.

## Conformance Standards

- EU and other regions requiring compliance with European Regulation (EU) 2017/745
  - General: EN 60601-1: 2006 + A1: 2013 + A2: 2021
  - Collateral: EN 60601-1-2: 2015 + A1: 2021
  - Particular: EN 60601-2-37: 2008 + A1: 2015

- Canada: Ed. 3.1
  - General: CAN/CSA-C22.2 No. 60601-1: 14
  - Collateral: IEC 60601-1-2: 2014  
CAN/CSA-C22.2 NO. 60601-1-6A: 11
  - Particular: IEC 60601-2-37: 2007 + A1: 2015
- USA: Ed. 3.1
  - General: AAMI ES60601-1: 2005 + C1: 2009 + A2: 2010  
+ A1: 2012
  - Collateral: IEC 60601-1-2: 2014  
IEC 60601-1-6: 2010 + A1: 2013
  - Particular: IEC 60601-2-37: 2007 + A1: 2015
- Other regions requiring compliance with IEC 60601-1 Ed. 3.1
  - General: IEC 60601-1: 2005 + A1: 2012
  - Collateral: IEC 60601-1-2: 2007  
IEC 60601-1-2: 2014
  - Particular: IEC 60601-2-37: 2007 + A1: 2015
- Other regions requiring compliance with IEC 60601-1 Ed. 3.2
  - General: IEC 60601-1: 2005 + A1: 2012 + A2: 2020
  - Collateral: IEC 60601-1-2: 2014 + A1: 2020
  - Particular: IEC 60601-2-37: 2007 + A1: 2015

Note: The above standards are applicable to the ultrasound system at the time of purchase. These standards continue to remain applicable even if the system configuration is changed as a result of using options in combination. The standards of the ultrasound system are applicable to transducers

## ***DIMENSIONS, MASS, AND POWER CONSUMPTION***

Unit	Model name	External dimensions mm (in)			Mass kg (lb) (approx.)	Power consumption (approx.)
		Width	Height	Depth		
Main unit	CUS-AME00	520 (20.5) *1	1300 (51.2) to 1770 (69.7)	730 (28.7)	79 (174)	232 W 13.7 VA
		550 (21.7) *2				
	CUS-AME00 (Elevated panel height model)	550 (21.7)	1400 (55.1) to 1870 (73.6)	730 (28.7)		
B/W digital printer	Sony UP-D711MD	140 (5.5)	70 (2.8)	125 (4.0)	1.0 (2.2)	72 VA (printing)
	Sony UP-D898DC	154 (6.1)	88 (3.5)	165 (6.5)	1.5 (5.5)	98.4 VA (printing)

\*1: For a 21.5-inch monitor model

\*2: For a 23-inch monitor model

**MASS**

Model name	Name of component	Mass [kg] (lb)
System main unit		
CUS-AME00	Aplio me	79 (174)
Options/Accessories for main unit		
USME-STRES	Stress Echo kit	0.1 (0.2)
USME-AGLS	Auto GLS kit	0.1 (0.2)
USME-AEFM	Auto EF Measurement kit	0.1 (0.2)
USME-2DWMT	2D Wall Motion Tracking kit	0.1 (0.2)
USME-2DWMTF	2D Wall Motion Tracking Fetal kit	0.1 (0.2)
USBE-MASS	Measurement Assistant kit	0.1 (0.2)
USME-WFNAV	Workflow Navigator kit	0.1 (0.2)
UHFL-CW	CW kit	0.4 (0.9)
UHME-PENCL	Pencil unit	0.8 (1.8)
UHME-REFSG	Reference Signal unit	1.3 (2.9)
UJUR-AI900A	Reference Signal cable	0.3 (0.7)
UJUR-AI901A	Reference Signal cable	0.1 (0.2)
UHME-TEEHG1	M-TEE Hanger kit	3.0 (6.6)
USME-FHMPI	Fetal Heart MPI Measurement kit	0.1 (0.2)
USME-MEASZ	Measurement Z score kit	0.1 (0.2)
USME-TRICE	Tricify Access kit	0.1 (0.2)
USME-CHI	CHI kit	0.1 (0.2)
USBE-SFH	Smart Fetal Heart kit	0.1 (0.2)
USME-SELFL	Elastography-FLR kit	0.1 (0.2)
USME-SEL	Elastography kit	0.1 (0.2)
USME-SWE	Shear Wave kit	0.1 (0.2)
UHCO-M4D	Mecha4D unit	0.6 (1.3)
USME-LUMIN	Luminance kit	0.1 (0.2)
USBE-3DPRTF	3D Printer Format Export kit	0.1 (0.2)
USME-AVOLM	Auto Volume Measurement kit	0.1 (0.2)
USME-ATI	Attenuation Imaging kit	0.1 (0.2)
USME-PANVI	Panoramic View kit	0.1 (0.2)

Model name	Name of component	Mass [kg] (lb)
USME-CENH	Contrast Enhance kit	0.1 (0.2)
USME-GIMG	General Imaging kit	0.1 (0.2)
USME-SMI	Superb Micro-vascular Imaging kit	0.1 (0.2)
USME-LVRP	Liver Package Basic kit	0.1 (0.2)
USME-MPR	Multi Parametric Report kit	0.1 (0.2)
USME-MPURE	MicroPure kit	0.1 (0.2)
UIAG-001A	ApliGate kit	0.1 (0.2)
USME-AGATE1	ApliGate soft kit	0.1 (0.2)
USME-APCAM	ApliCam kit	0.1 (0.2)
USME-NSTRG	Network Storage kit	0.1 (0.2)
USME-OHELP	Online Help kit	0.1 (0.2)
USME-PRASS	Protocol Assistant kit	0.1 (0.2)
USME-REFIM	Reference Image kit	0.1 (0.2)
USME-SECM	Security Management kit	0.1 (0.2)
USME-IOTA	IOTA kit	0.1 (0.2)
USBE-RADS	RADS kit	0.1 (0.2)
USME-UHF	Ultra-High freq kit	0.1 (0.2)
UHME-ITLAN	Isolation Trans for LAN kit	0.5 (1.1)
UHCO-PT003A	Palm Controller kit	0.2 (0.4)
UHME-BLTCVR	Built-in Cover	1.8 (4.0)
UHME-REC1	Recorder unit	1.7 (3.7)
UEBT-X200G	Battery pack	3.7 (8.2)
UEBT-X201G	Battery pack	1.6 (3.5)
UHME-BTRYM	Mounting kit for Battery	1.4 (3.1)
UHME-BTRYM2	Mounting kit for 2nd Battery	5.5 (12.1)
UHME-ECHOLD	EV/ER Transducer Holder kit	1.0 (2.2)
UHME-REFCH	ECG Cable Hanger kit	0.1 (0.2)
UHME-TCHAN	Transducer Cable Hanger kit	0.9 (2.0)
UHME-VPANE	Video kit	1.2 (2.6)
UHME-TADPT	Transducer Adaptor	1.7 (3.7)

Model name	Name of component	Mass [kg] (lb)
UIOM-001A	OLED monitor unit	4.1 (9.0)
UHME-MON23	23-inch Monitor kit	6.0 (13.0)
UIWL-AI900A	Wireless LAN kit	0.5 (1.1)
UIWL-A500A	Wireless LAN kit	0.5 (1.1)
UZFS-004A	Foot switch	0.6 (1.3)
UZGW-008A	Gel warmer	1.0 (2.2)
UHME-PERMD	Mounting kit for Peripheral unit	1.0 (2.2)
UHFL-FRENCH	Local Language Key-TOP kit	0.5 (1.1)
UHFL-GERMAN	Local Language Key-TOP kit	0.5 (1.1)
UHFL-ITALIA	Local Language Key-TOP kit	0.5 (1.1)
UHFL-SPAIN	Local Language Key-TOP kit	0.5 (1.1)
UHFL-DANISH	Local Language Key-TOP kit	0.5 (1.1)
UHFL-NORWAY	Local Language Key-TOP kit	0.5 (1.1)
UHFL-SCANDI	Local Language Key-TOP kit	0.5 (1.1)
UHFL-RUSSIA	Local Language Key-TOP kit	0.5 (1.1)
UHFL-PORTUG	Local Language Key-TOP kit	0.5 (1.1)
UHFL-HNGRY	Local Language Key-TOP kit	0.5 (1.1)

Model name	Name of component	Mass [kg] (lb)
Transducers		
PSU-28BT	Phased array transducer	0.38 (0.84)
PSU-30BT	Phased array transducer	0.4 (0.9)
PSU-50BT	Phased array transducer	0.4 (0.9)
PSU-70BT	Phased array transducer	0.4 (0.9)
PVL-715RS	Endocavity transducer	0.68 (1.5)
PVU-350BTP	Convex array biopsy transducer	0.5 (1.1)
PVU-375BT	Convex array transducer	0.55 (1.21)
PVU-382BT	Convex array transducer	0.4 (0.9)
PVU-475BT	Convex array transducer	0.45 (0.99)
PVU-574BT	Convex array transducer	0.44 (0.97)
PVU-674BT	Convex array transducer	0.55 (1.21)
PVU-674MVS	Convex array transducer	1.05 (2.31)
PVU-681MVL	Convex array transducer	0.78 (1.72)
PVU-712BTE	Convex array transducer	0.63 (1.17)
PVU-745BTF	Convex array transducer	0.45 (0.99)
PVU-745BTH	Convex array transducer	0.45 (0.99)
PVU-745BTV	Convex array transducer	0.45 (0.99)
PVU-781VTE	Endocavity transducer	0.63 (1.39)
PLU-308BTP	Linear array biopsy transducer	0.5 (1.1)
PLU-704BT	Linear array transducer	0.5 (1.1)
PLU-705BTF	Linear array transducer	0.44 (0.97)
PLU-705BTH	Linear array transducer	0.44 (0.97)
PLU-805BT	Linear array transducer	0.49 (1.08)
PLU-1005BT	Linear array transducer	0.53 (1.17)
PLU-1202BT	Linear array transducer	0.45 (0.99)
PLU-1204BT	Linear array transducer	0.49 (1.08)
PLU-1204BX	Linear array transducer	0.6 (1.3)
PLU-2002BT	Linear array transducer	0.45 (0.99)
PET-512MD	Multi-plane transesophageal transducer	1.5 (3.3)
PET-835LA	Convex array transducer	1.2 (2.6)
PC-20M	CW Doppler pencil transducer	0.085 (0.19)
PC-50M	CW Doppler pencil transducer	0.08 (0.18)

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