

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Россия +7(495)268-04-70

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Казахстан +7(7172)727-132

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

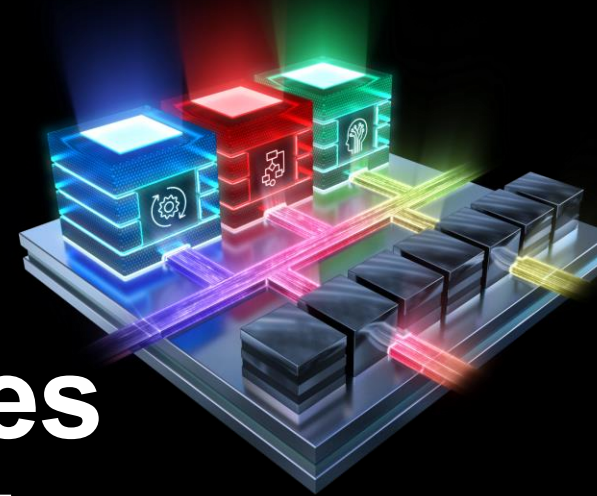
Киргизия +996(312)96-26-47

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

<https://amd.nt-rt.ru/> || aid@nt-rt.ru



Versal™ Premium Series Product Selection Guide



Versal™ Premium Series – Resources

		VP1002	VP1052	VP1102	VP1202	VP1402	VP1502	VP2502	VP1552	VP1702	VP1802	VP2802	VP1902
Adaptable Engines	System Logic Cells (K)	833	1,186	1,575	1,969	2,233	3,763	3,738	3,837	5,558	7,352	7,326	18,507
	LUTs	380,800	542,080	719,872	900,224	1,020,928	1,720,448	1,708,672	1,753,984	2,540,672	3,360,896	3,349,120	8,460,288
	NoC Master / NoC Slave Ports	22	22	30	28	42	52	52	52	76	100	100	192
	Super Logic Regions (SLRs) ⁽¹⁾	-	-	-	-	-	2	2	2	3	4	4	4
	Distributed RAM (Mb)	12	17	22	27	31	53	52	54	78	103	102	258
Memory	Block RAM (Mb)	19	26	49	47	70	89	89	89	132	174	174	239
	UltraRAM (Mb)	97	138	127	190	181	366	366	366	541	717	717	619
	Multiport RAM (Mb)	80	80	-	-	-	-	-	-	-	-	-	-
	Total PL Memory (Mb)	208	261	198	264	282	508	507	509	751	994	994	1116
	DDR Memory Controllers	2	2	3	4	3	4	4	4	4	4	4	14
Intelligent Engines	DDR Bus Width	128	128	192	256	192	256	256	256	256	256	256	896
	DSP Engines	1,140	1,572	1,904	3,984	2,672	7,440	7,392	7,392	10,896	14,352	14,304	6,864
	AI Engines Tiles	-	-	-	-	-	-	472	-	-	-	472	-
	AI Engine Data Memory (Mb)	-	-	-	-	-	-	118	-	-	-	118	-
Scalar Engines	APU	Dual-core Arm® Cortex®-A72, 48KB/32KB L1 Cache w/ parity & ECC; 1MB L2 Cache w/ ECC											
	RPU	Dual-core Arm Cortex-R5F, 32KB/32KB L1 Cache, and 256KB TCM w/ECC											
	Memory	256KB On-Chip Memory w/ECC											
	Connectivity	Ethernet (x2); UART (x2); CAN-FD (x2); USB 2.0 (x1); SPI (x2); I2C (x2)											
Serial Transceivers	GTY Transceivers (32.75Gb/s)	20	20	-	-	-	-	-	-	-	-	-	-
	GTYP Transceivers (32.75Gb/s)	-	-	8	28 ⁽²⁾	8	28 ⁽²⁾	28 ⁽²⁾	68 ⁽²⁾	28 ⁽²⁾	28 ⁽²⁾	28 ⁽²⁾	128
	GTM Transceivers (58G (112G))	24 (12)	48 (24)	64 (32)	20 (10)	96 (64) ⁽³⁾	60 (30)	60 (30)	20 (10)	100 (50)	140 (70)	140 (70)	32 (16)
Integrated Protocol IP	PCIe® w/DMA & CCIX (CPM4)	2 x Gen4x4	2 x Gen4x4	-	-	-	-	-	-	-	-	-	-
	PCIe w/DMA & CCIX (CPM5)	-	-	-	2 x Gen5x8	-	2 x Gen5x8	2 x Gen5x8	2 x Gen5x8	2 x Gen5x8	2 x Gen5x8	2 x Gen5x8	-
	PCI Express	1 x Gen4x8	1 x Gen4x8	2 x Gen5x4	2 x Gen5x4	2 x Gen5x4	2 x Gen5x4	2 x Gen5x4	8 x Gen5x4	2 x Gen5x4	2 x Gen5x4	2 x Gen5x4	16 x Gen5x4
	100G Multirate Ethernet MAC	3	5	6	2	6	4	4	4	6	8	8	12
	600G Ethernet MAC	2	3	7	1	11	3	3	1	5	7	7	4
	600G Interlaken	1	2	0	0	0	1	1	0	2	3	3	0
	400G High-Speed Crypto Engine	1	1	3	1	4	2	2	2	3	4	4	0
Ordering Information	Extended ⁽⁴⁾	-1MSE, -1LSE, -2MSE, -2MLE, -2LSE, -2LLE			-1MSE, -1LSE, -2MSE, -2MLE, -2LSE, -2LLE, -3HSE								
	Industrial ⁽⁴⁾	-1MSI, -1MLI, -1LSI, -1LLI, -2MSI, -2MLI, -2LLI, -2HSI			-1MSI, -1MLI, -1LSI, -1LLI, -2MSI, -2MLI								-

1. Refers to logic SLRs only.

2. 16 GTYP transceivers are dedicated to the CPM5 for PCI Express use.

3. The VP1402 device in the VSVD2197 package can run 64 GTM transceivers in any 8 quads at 112Gb/s.

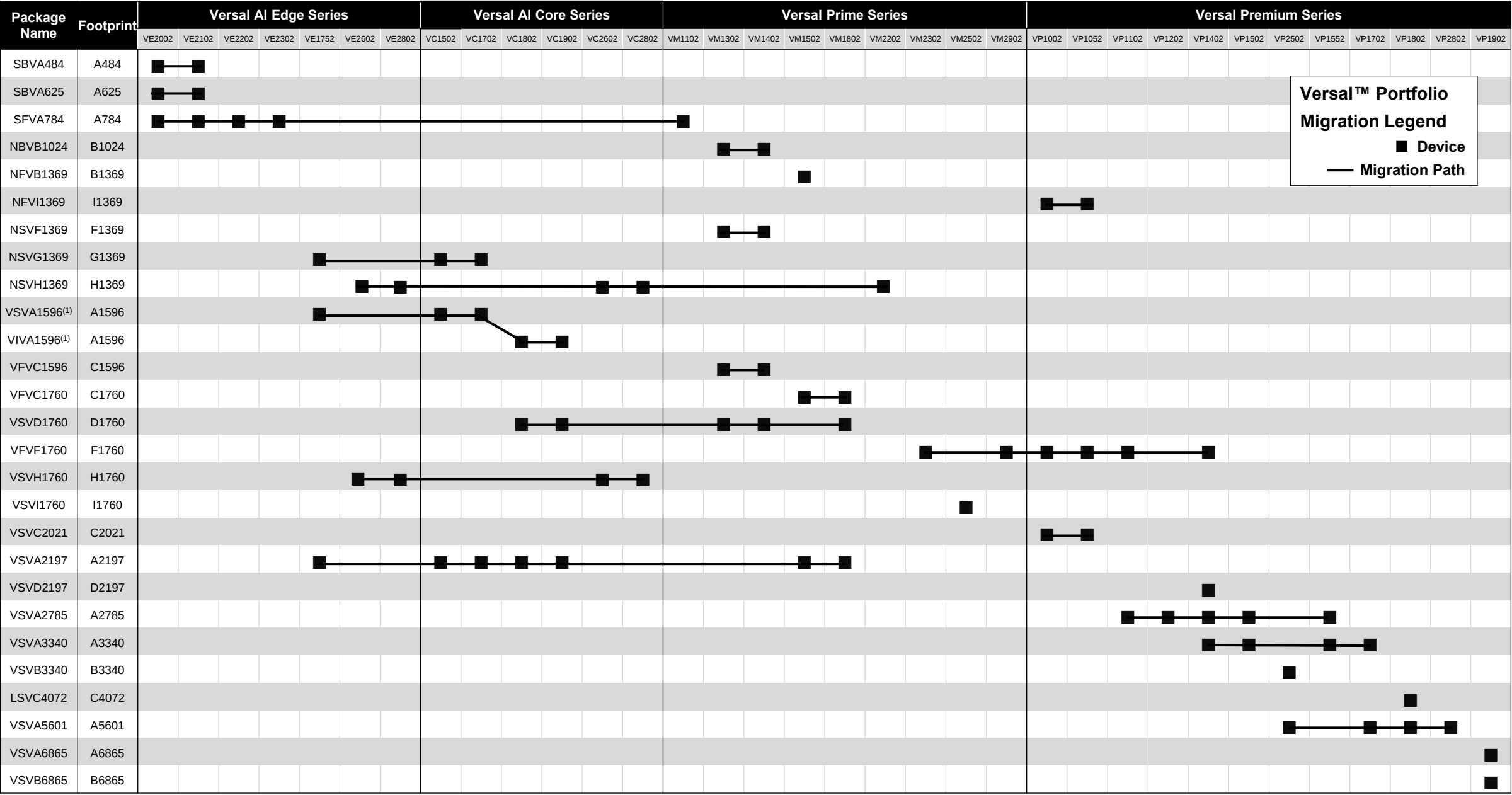
Versal™ Premium Series – Packaging

			VP1002	VP1052	VP1102	VP1202	VP1402	VP1502	VP2502	VP1552	VP1702	VP1802	VP2802	VP1902
Package	Package Dimensions (mm)	Ball Pitch (mm)	XPIO DDR Only, XPIO DDR+PL HDIO, MIO GTY, GTM (112G)		XPIO DDR Only, XPIO DDR+PL HDIO, MIO GTYP, GTM (112G)									
NFVI1369	35x35	0.92	138, 24 0, 78 8, 24 (12)	138, 24 0, 78 8, 36 (18)										
VFVF1760 ⁽¹⁾	40x40	0.92	192, 132 0, 78 8, 24 (12)	192, 132 0, 78 8, 36 (18)	132, 192 0, 78 8, 40 (20)		132, 192 22, 78 8, 40 (20)							
VSVC2021	42.5x42.5	0.92	192, 186 0, 78 20, 24 (12)	192, 186 0, 78 20, 48 (24)										
VSVD2197	45x45	0.92					0, 54 0, 78 8, 96 (64) ⁽³⁾							
VSVA2785 ⁽²⁾	50x50	0.92			180, 306 0, 78 8, 64 (32)	132, 570 0, 78 28, 20 (10)	180, 306 44, 78 8, 80 (40)	132, 570 0, 78 28, 56 (28)		132, 570 0, 78 68, 16 (8)				
VSVA3340	55x55	0.92					180, 306 44, 78 8, 96 (48)	132, 354 0, 78 28, 60 (30)		132, 354 0, 78 68, 20 (10)	132, 354 0, 78 28, 88 (44)			
VSVB3340	55x55	0.92							132, 570 0, 78 28, 60 (30)					
LSVC4072	65x65	1.0										132, 570 0, 78 28, 140 (70)		
VSVA5601	70x70	0.92							132, 570 0, 78 28, 60 (30)		132, 570 0, 78 28, 100 (50)	132, 570 0, 78 28, 140 (70)	132, 570 0, 78 28, 140 (70)	
VSVA6865	77.5x77.5	0.92												264, 2064 88, 78 64, 32 (16)
VSVB6865	77.5x77.5	0.92												0, 1890 88, 78 128, 32 (16)

Notes:

- Some packages are footprint compatible with Versal Prime series devices.
- VP1202, VP1502, and VP1552 in VSVA2785 support peak LPDDR4 data rates in 486 I/O only. The remaining 216 I/O support limited data rates. See the associated data sheet.
- GTM transceivers can operate at data rates up to 112Gb/s by combining two transceivers together. The VP1402 device in the VSVD2197 package can run 64 GTM transceivers at 112Gb/s.

			VP1002	VP1052	VP1102	VP1202	VP1402	VP1502	VP2502	VP1552	VP1702	VP1802	VP2802	VP1902
Memory	Adaptable Engine Peak Perf – INT4	TOPs	47	67	89	112	127	214	212	218	316	418	416	1052
	Adaptable Engine Peak Perf – INT8	TOPs	12	17	23	29	33	55	55	56	81	107	107	270
	NoC Cross-sectional Bandwidth	Tb/s	1.1	1.1	1.7	2.2	1.7	2.2	2.2	2.2	2.2	2.2	2.2	4.4
	Total Bandwidth - Block RAM	Tb/s	77	108	202	193	285	366	366	366	539	712	712	980
	Total Bandwidth - Ultra RAM	Tb/s	37	52	48	72	69	138	138	138	205	271	271	234
	Total PL Memory Bandwidth	Tb/s	114	160	250	265	354	504	504	504	743	982	982	1214
	DDR4 Memory Bandwidth	GB/s	51.2	51.2	76.8	102.4	76.8	102.4	102.4	102.4	102.4	102.4	102.4	358.4
	LPDDR4 Memory Bandwidth	GB/s	68.3	68.3	102.4	136.5	102.4	136.5	136.5	136.5	136.5	136.5	136.5	477.8
Intelligent Engines	AI Engine Peak Perf – INT8x4	TOPs	-	-	-	-	-	-	157	-	-	-	157	-
	AI Engine Peak Perf – INT8	TOPs	-	-	-	-	-	-	157	-	-	-	157	-
	AI Engine Peak Perf – INT8x16	TOPs	-	-	-	-	-	-	79	-	-	-	79	-
	AI Engine Peak Perf – INT16	TOPs	-	-	-	-	-	-	39	-	-	-	39	-
	AI Engine Peak Perf – CINT16	Complex TOPs	-	-	-	-	-	-	10	-	-	-	10	-
	AI Engine Peak Perf – FP32	TFLOPs	-	-	-	-	-	-	10	-	-	-	10	-
	AI Engine Peak SRAM Bandwidth	Tb/s	-	-	-	-	-	-	628	-	-	-	628	-
	DSP Engine Peak Perf – INT8	TOPs	7.9	10.8	13.1	27.5	18.4	51.3	51.0	51.0	75.2	99.0	98.7	47.4
	DSP Engine Peak Perf – INT24	TOPs	2.6	3.6	4.4	9.2	6.1	17.1	17.0	17.0	25.1	33.0	32.9	15.8
	DSP Engine Peak Perf – CINT18	Complex TOPs	1.1	1.5	1.9	3.9	2.6	7.3	7.3	7.3	10.7	14.1	14.1	6.8
	DSP Engine Peak Perf – FP32	TFLOPs	1.8	2.5	3.1	6.4	4.3	12.0	11.9	11.9	17.5	23.1	23.0	11.1
Scalar Engines	Arm® Cortex-A72 Performance	DMIPs	18,942	18,942	19,516	19,516	19,516	19,516	19,516	19,516	19,516	19,516	19,516	19,516
	Arm Cortex-R5F Performance	DMIPs	2,672	2,672	2,672	2,672	2,672	2,672	2,672	2,672	2,672	2,672	2,672	2,672
I/O	Transceiver Bandwidth	Tb/s	3.84	6.54	7.75	4.09	14.86	8.60	8.60	6.71	13.12	17.63	17.63	12.10
	Sensor I/O Bandwidth	Gb/s	595	595	979	1,824	979	1,824	1,824	1,824	1,824	1,824	1,824	5,760
Connectivity Throughput	PCIe® Throughput	GT/s	384	384	256	768	256	768	768	1536	768	768	768	2,048
	Interlaken Throughput	Gb/s	600	1,200	1,200	0	1,800	600	600	0	1,200	1,800	1,800	0
	Ethernet Throughput	Gb/s	1,500	2,300	3,000	800	4,400	2,200	2,200	1,000	3,600	5,000	5,000	3,600
	Crypto (AES-256) Throughput	Gb/s	400	400	1,200	400	1,600	800	800	800	1,200	1,600	1600	0
Connectivity Ports	10G Ethernet Ports	#	12	20	24	8	24	16	16	16	24	32	32	48
	25G Ethernet Ports	#	12	20	24	8	24	16	16	16	24	32	32	48
	40G Ethernet Ports	#	3	5	6	2	6	4	4	4	6	8	8	12
	50G Ethernet Ports	#	6	10	12	4	12	8	8	8	12	16	16	24
	100G Ethernet Ports	#	15	23	48	8	72	22	22	10	36	50	50	36
	200G Ethernet Ports	#	6	9	21	3	33	9	9	3	15	21	21	12
	400G Ethernet Ports	#	2	3	7	1	11	3	3	1	5	7	7	4



Versal™ Portfolio

Migration Legend

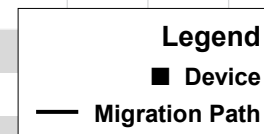
■ Device

— Migration Path

Note:
1. VSVA1596 package dimensions are 37.5x37.5mm, VIVA1596 package dimensions are 40x40mm with 1.25mm overhang

Versal™ Premium to HBM Series Migration

Package Name	Footprint	Versal Premium Series												Versal HBM Series				
		VP1002	VP1052	VP1102	VP1202	VP1402	VP1502	VP2502	VP1552	VP1702	VP1802	VP2802	VP1902	VH1522	VH1542	VH1582	VH1742	VH1782
NFVI1369	I1369	■	■															
VFVF1760	F1760	■	■	■	■	■												
VSVC2021	C2021	■	■															
VSVD2197	D2197					■												
VSVA2785	A2785			■	■	■	■	■	■									
VSVA3340	A3340					■	■	■	■	■								
VSVB3340	B3340							■										
VSVA3697	A3697													■	■	■		
LSVC4072	C4072										■							
LSVA4737	A4737														■	■	■	■
VSVA5601	A5601							■	■	■	■	■						
VSVA6865	A6865												■					
VSVB6865	B6865												■					



Versal™ Device Ordering Information

Device Name				Device Attributes				Package Definition			
XC	V	C	1902	-1	M	S	E	V	S	V	D1760
Device Grade XC: Commercial XA: Automotive XQ: Defense	Architecture Versal	Series Name E: AI Edge C: AI Core M: Prime P: Premium H: HBM	Device Number Digits 1-3: Value Identifier Digit 4: # of Primary Cores	Speed Grade -1: Slowest -2: Mid -3: Highest	Voltage L: Low (0.7V) M: Mid (0.80V) H: High (0.88V)	Static Screen S: Standard L: Low Static	Temp Grade E: 0 to 110°C ⁽¹⁾ I: -40 to 110°C ⁽¹⁾ Q: -40 to +125°C M: -55 to +125°C	Ball Pitch V: 0.92mm, w/LSC N: 0.92mm, no LSC S: 0.8mm L: 1.0mm	Lid S: Lidless, w/Stiffener Ring F: Lidded B: Lidless, no Stiffener Ring H: Lidded Overhang I: Lidless, w/Stiffener Ring & Overhang	RoHS6 Code ⁽²⁾ V: Pb-free Ball Q: Eutectic Ball R: Ruggedized, Eutectic Ball	Footprint

Note:

1. Operation at 110°C Tj is limited to 3% of the device lifetime and can occur sequentially or at regular intervals as long as the total time does not exceed 3% of device lifetime—except -1E and -3E (standard 0–100°C).

2. All packages have Pb-free bumps.



Disclaimer and Attribution

The information contained herein is for informational purposes only and is subject to change without notice. While every precaution has been taken in the preparation of this document, it may contain technical inaccuracies, omissions and typographical errors, and AMD is under no obligation to update or otherwise correct this information. Advanced Micro Devices, Inc. makes no representations or warranties with respect to the accuracy or completeness of the contents of this document, and assumes no liability of any kind, including the implied warranties of noninfringement, merchantability or fitness for particular purposes, with respect to the operation or use of AMD hardware, software or other products described herein. No license, including implied or arising by estoppel, to any intellectual property rights is granted by this document. Terms and limitations applicable to the purchase or use of AMD's products are as set forth in a signed agreement between the parties or in AMD's Standard Terms and Conditions of Sale. GD-18

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Россия +7(495)268-04-70

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижегород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Казахстан +7(7172)727-132

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Киргизия +996(312)96-26-47

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

<https://amd.nt-rt.ru/> || aid@nt-rt.ru