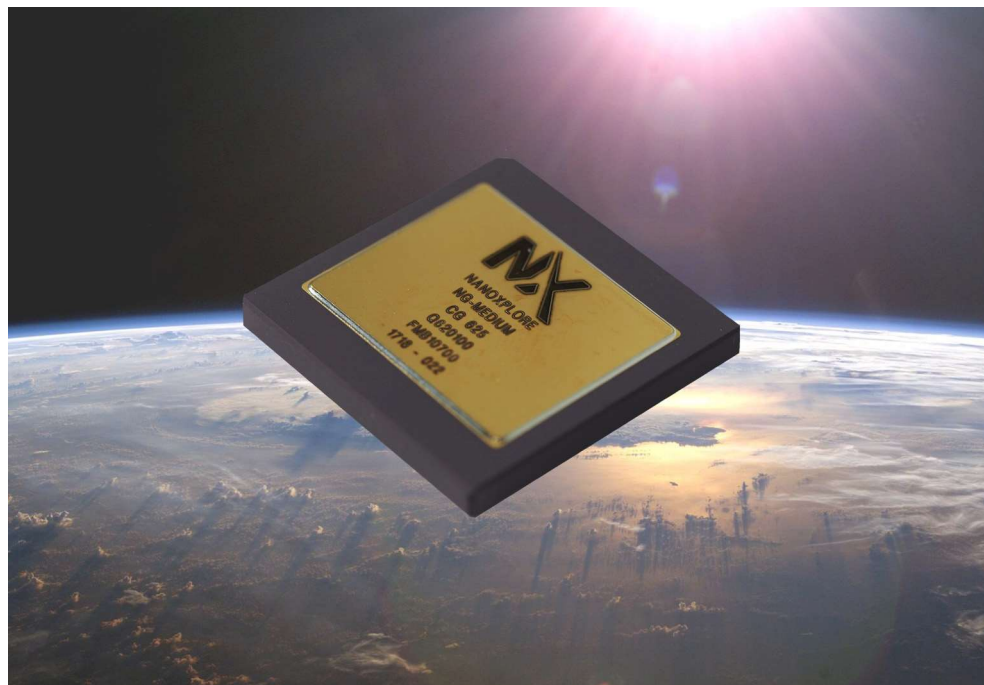




APR20

NanoXplore

FACTS SHEET



1 avenue de la Cristallerie
92310 SEVRES
France

Tel: +33 (0)1 7787 0048
info@nanoxplore.com
www.nanoxplore.com



STATUS

NG medium

NG large

NG ultra

NG ultra **150**

STATUS



DOCUMENTATION



SUCCESS STORIES

ROOM FOR USERS

- **Current version** : v2.9.7 issued 24/02/2020
- **V2.9.7 new features** : On top of bugs fixed,
 - RAM Pipe Registers can now be activated when using standard modes through generics,
 - Archives (.nxm) are now encrypted.
- **V2.9.7 tweaks**:
 - NG-Large: Updated 'Interface' banks,
 - NG-Large: More detailed information is displayed when inspecting PLLs,
 - Default value for option generateBitstreamCMIC has been changed to 'never',
 - Adding simulation model for IP_DFI_DDR2 IP core.
- **Next release** : **v2020.1** expected CW2019



REMARK: Due to switch to NXmap3, no new developments will happen on NXmap-v2.

DOCUMENTATION

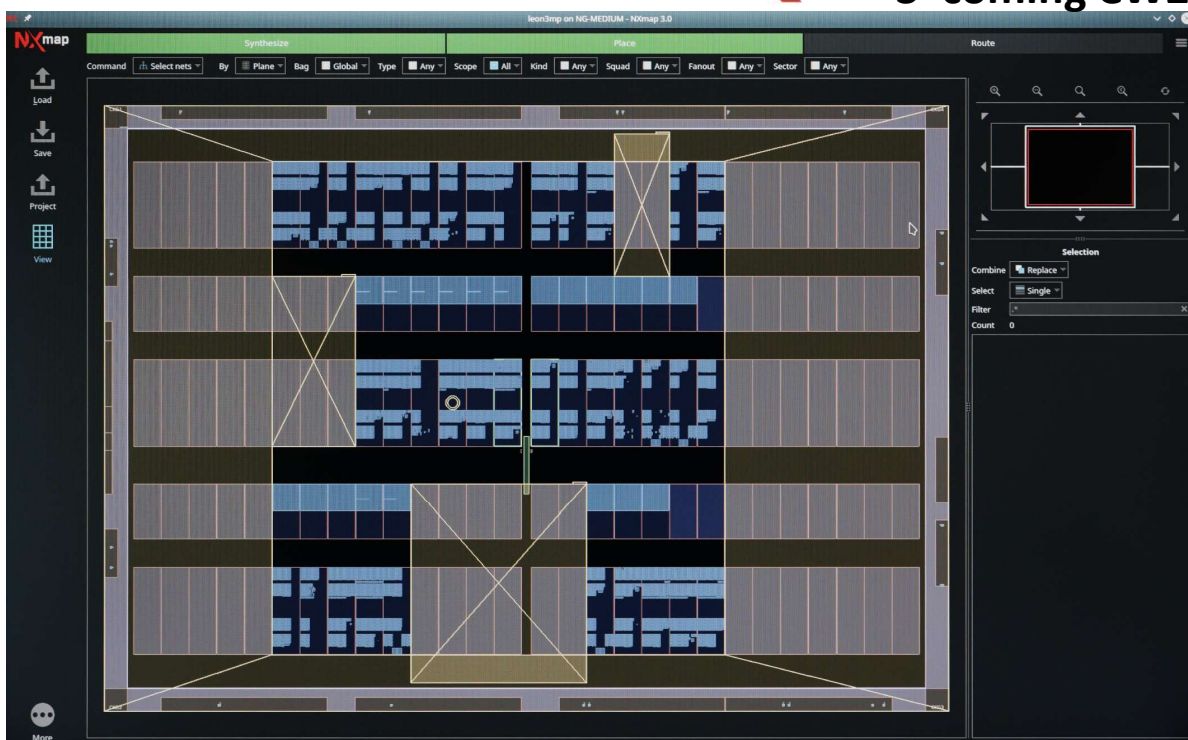
<http://download.nanoxplore.com>

- | | |
|---------------------------------|-------------------------|
| ✓ NXmap Reference Guide: | v2.0 (22oct18) |
| ✓ NXmap User Manual | v2.9.7 (19mar20) |
| ✓ NXmap using Python IDE | v1.1 (13feb20) |
| ✓ NX Library Guide | v1.5 (17jun19) |
| ✓ NXBase2 User Manual: | v2.3.0 (14feb20) |
| ✓ NXBoard User Manual: | v1.0 (13feb20) |
| ✓ Cookbook: | v1.5 (13feb20) |
| ✓ NXscope User Manual & startup | v1.1 (21oct19) |
| ✓ NX SpW Bank IP | v1.0 (28nov18) |
| ✓ NX SERDES IP | v1.0 (21oct19) |
| ✓ NX DFI DDR2 IP | v2.2 (5dec19) |
| ✓ NG-Medium datasheet: | v1.9 (12feb20) |
| ✓ NG-Medium Cfg Guide: | v1.1 (21oct19) |
| ✓ NG-Medium NXPE | v1b (17jan19) |
| ✓ NG-Medium IBIS models | v1 (14nov18) |
| ✓ NG-Medium Devkit-v3 UG: | v1.04 (18feb19) |
| ✓ NG-Medium Radiation report: | v3.3.1 (13feb20) |
| ✓ NG-Large datasheet | v1.0 (3dec18) |
| ✓ NG-Large Pkg & pinout | v1.0 (21oct19) |
| ✓ NG-Large NXPE | v1.a (17jan19) |
| ✓ NG-Large Devkit-v1 UG | v1.2 (4feb20) |

Due to COVID-19 pandemic,
no presence from NX
to any event(s).
Take care.



3 coming CW2019.



NG medium

Technology: 65nm CMOS

Organic Package: FG625

Ceramic Packages: CQ352, LG625, CG625

Industrial status:

Proposed QA level: PR, M, MP, B and E grades

Proposed QA flows: PR, M, Q and V grades

NXmap v2/v3	Proto	EK v4	M/S parts Organic	Mil Parts Ceramic	Spa parts Ceramic	SMD Or ESCC
NOW/Wk19	NOW	NOW	SEP20	NOW	NOW	SEP20+

News: Next NXmap training course postponed in End2020 due to COVID-19.

Qualification: NX1H35AS (= NG-Medium Metal-fix) CQFP-352/CLGA-625 qualification running, according DLA & ESA instructions. NG-Medium/PBGA-625 indus/qualification in-progress.

Flight Heritage: Floriposat-2 launch with Amazonia-1 scheduled Summer-2020.

NG large

Technology: 65nm CMOS

Organic Package: FF1752

Ceramic Packages: LF1752, CF1752

Industrial status:

Proposed QA level: PR, M, MP grades

Proposed QA flows: PR, M, Q and V grades

NXmap v2/v3	Proto PR	EK v1	Mil parts Organic	Mil parts Ceramic	Spa parts Ceramic	SMD Or ESCC
NOW/Wk19	NOW	NOW	Q4CY20	Q1CY21	Q2CY21	TBD

News: Design fully validated, including HSSL 6,25Gbps and ARM Cortex-R5 processor core. Next NG-Large Evaluation Kits available in Jun-20. Proto/EK leadtimes are currently 4/8wks.

Qualification: Started. **Flight Heritage:** 1st Flight heritage expected 2021.

NG ultra

Technology: 28nm FDSOI

Organic Package: FF1752

Ceramic Packages: LF1752, CF1752

Industrial status:

Proposed QA level: PR, M, MP, B and E grades

Proposed QA flows: PR, M, Q and V grades

NXmap 3	1st-run Proto	EK v1	M/S Parts Organic	Mil Parts Ceramic	Spa Parts Ceramic	SMD Or ESCC
Dec20	Q1CY21	Q1CY21	Q2CY21	Q4CY21	Q2CY22	TBD

News: Design completed, currently in Waferfab. 1st-run evaluation will occur H2CY20.

Qualification: 1st qualification results expected mid-2021.

Flight Heritage: Too early.

Next device will be the **NG ultra 150**

Definitions

- NXmap, Prototype(s), Product Evaluation Kit (EK): Availability dates.
- Military & Space parts Organic: Organic product industrialized & ORDER entry OPEN.
- Military parts Ceramic: Ceramic product, M/MP flow(s) industrialized & ORDER entry OPEN.
- Space parts Ceramic: Ceramic product, Q/V flows industrialized & ORDER entry OPEN.
- SMD or ESCC: Expected date when either the SMD or ESCC specification number will become valid & active.

NX RHBD FPGA Products

	NG medium		NG large		NG ultra	
Device	Details	NX1H35AS	Details	NX1H140TSP	Details	NX2H540TSP
Capacity		C65Space		C65Space		C28FD Space
ASIC Gates		550 000		1 900 000		8 000 000
Logic Modules						
Register	3x Tiles + 2CGBs		7x Tiles + 4CGBs		15x Tiles + 9CGBs	
LUT-4	384DFF*28*3rows	32 256	384DFF*48*7rows	129 024	384DFF on 15rows	505 344
Carry	408LUT*28*3rows	34 272	408LUT*48*7rows	137 088	408LUT on 15rows	536 928
	96CY*28*3rows	8 064	96CY*48*7rows	32 256	96CY on 15rows	126 336
Embedded RAM						
DPRAM		2,9Mb		9,9Mb		33Mb
Core Register File	28RAM*2* 48Kb	2.688K	48RAM*4* 48Kb	9.216K	672RAM * 48Kb	32.256K
Core Register File Bits	28RF*2*3rows	168	48RF*2*7rows	672	672RF *2*2	2 688
	168*64*(16+6)bits	168K with ECC	672*64*(16+6)bits	672K with ECC	2688*32*18	1 512K hardened
Clocks / PLL	4 CLK / 4 PLL	4	4 CLK / 4 PLL	4	7 CLK / 7 PLL	7
Additional Features						
SpaceWire PHY (8 IOBs)	2x/Complex IOBank	16	2x/Complex IOBank	20	2x/Complex IOBank	20
DDR3/4 PHY (11IOBs)	2x/Complex IOBank	16	2x/Complex IOBank	20	2x/Complex IOBank	20
DSP Blocks	From 2 CGBs	112	From 4 CGBs	384	From 9 rows	1344
SpaceWire link I/F 430Mbps	CODEC	1	CODEC	1	CODEC	1
SERDES Tx/Rx	-	-	4 Hex x 6 SERDES	24x @ 6,25Gbps	8 Quad x 4 SERDES	32x @ 12,5Gbps
Hard IP Processor core	-	-	ARM Cortex-R5	1	ARM Cortex-R52	4
SoC Peripherals	NXcore	TBD	NXcore	TBD	DALHIA	YES
Design Security		NO		NO		YES
Inputs / Outputs		-		-		-
I/O banks	8 Complex + 5 Simple	13	10 Complex + 14 Simple	24	10 Complex + 4 Simple	14
Packages - User I/Os						
CQ352	48*48mm / 0,5mm	192	-	-	-	-
LG/CG625	29*29mm / 1mm	374	-	-	-	-
FG625	27*27mm / 1mm	374	-	-	-	-
LF1752 & CF1752			45*45mm / 1mm	684	45*45mm / 1mm	436 + SoC 308
FF1752			42,5*42,5mm / 1mm	684	45*45mm / 1mm	436 + SoC 308

Ceramic

NG-Medium

- ◆ CQ352
 - CQFP technology
 - 352pins
 - 0,5mm pitch
- ◆ LG625
 - Fine pitch 1mm
 - 29*29mm body
- ◆ CG625
 - CLASP
 - Or Copper Ribbon

NG-Large

- ◆ LF1752
 - Fine pitch 1mm
 - 45*45mm body
- ◆ CF1752
 - CLASP
 - Or Copper Ribbon

NG-Ultra

Same as NG-Large

- ◆ LF1752
- ◆ CF1752

Ultra-150

◆ LF484 & CF484

- Fine pitch 1mm
- ◆ CQ256 (TBC)
- 0,5mm pitch

Ultra-150

- ◆ FF484
 - Fine pitch 1mm
 - 23*23mm body
 - Flip-Chip
 - Lead-free

NG-Ultra

- ◆ FF1752
 - Fine pitch 1mm
 - 45*45mm body
 - Flip-chip
 - Lead-free

NG-Large

- ◆ FF1752
 - Fine pitch 1mm
 - 42,5*42,5mm body
 - Flip-chip
 - Lead-free

NG-Medium

- ◆ FG625
 - Fine pitch 1mm
 - 27*27mm body
 - Wire-bonded
 - Lead-free

CERAMIC & ORGANIC packages ballprint & pinout compatible
 NG-Medium: FG625 with LG625,
 NG-Large: FF1752 with LF1752,
 NG-Ultra: FF1752 with LF1752 (TBC),
 Ultra-150: LF484 with FF484 (TBC).

Organic

NX Packages

Ceramic	M	Q	V	Organic	M	MP	B	E
WLAT	✗	✓	✓	WLAT	✗	✗	✓	✓
TID / Report	✗	✓	✓	TID / Report	✗	✗	✓	✓
SLDC	✗	✓	✓	SLDC	✗	✗	✓	✓
T/C	✗	10cy	10cy	T/C	✗	10cy	10cy	10cy
IVI	2010B SPL	2010B 100%	2010A 100%	IVI	2010B SPL	2010B SPL	2010B 100%	2010A 100%
Pind-Test	✗	On Request	✓	CSAM	✗	✗	✓	✓
Serialization	✗	✗	✓	Serialization	✗	✗	✗	✓
Burn-In	✗	160h	240h	Burn-In	✗	48h	160h	240h
PDA	✗	5%	5%	PDA	✗	✗	1%	1%
Electrical Test	-55°C & +125°C	25°C then -55°C & +125°C	25°C then -55°C & +125°C R&R	Electrical Test	-55°C & +125°C	+25°C then -55°C & +125°C	+25°C then -55°C & +125°C	25°C then -55°C & +125°C R&R
QCI	✗	✓	✓	LAT 1/2/3	✗	✗	✓	✓
EVI	SPL	✓ 100%	✓ 100%	EVI	SPL	SPL	100%	100%
CoC	✗	✓	✓	CoC	✗	✗	✓	✓

NX QA Flows

Feel free to contact support@nanoxplore for any questions about NanoXplore HW or SW issues



NXmap Training course

Please note, next NanoXplore NXmap training course, originally scheduled 28/30apr20 has been postponed End-2020. It will address the brand new NXmap3 tool suite. Cost is 300€/person.

Free-of-charge Webinars will come as soon as possible.

Please contact sales@nanoxplore.com for additional details and to register.

NX web site

Please visit our new web site

<https://www.nanoxplore.fr>

<https://www.nanoxplore.com>

A screenshot of the NanoXplore website homepage. The header features a navigation menu with links: COMPANY, PRODUCTS, SUPPORT, SALES, CAREERS, NEWS, and CONTACT. The NanoXplore logo is centered in the header. The main content area has a blue background with a circuit board pattern. It features the text 'SoCs, FPGA, eFPGA' in large white letters, followed by a paragraph describing the company as a privately owned fabless company based in France, offering a comprehensive portfolio of SoCs and FPGA devices for aerospace, defense, and industrial markets. A red 'LEARN MORE' button is positioned below the text. The footer section is white and contains the heading 'Corporate profile', followed by the same company description paragraph and another red 'LEARN MORE' button.

COMPANY PRODUCTS SUPPORT SALES **NX** NanoXplore CAREERS NEWS CONTACT

SoCs, FPGA, eFPGA

NanoXplore is a privately owned fabless company based in France. The company offers a comprehensive portfolio of SoCs and FPGA devices for aerospace, defense and industrial markets. Products include a leading radiation hardened FPGA portfolio.

LEARN MORE

Corporate profile

NanoXplore is a privately owned fabless company based in France. The company offers a comprehensive portfolio of SoCs and FPGA devices for aerospace, defense and industrial markets. Products include a leading radiation hardened FPGA portfolio.

LEARN MORE

Feel free to contact support@nanoxplore for any questions about NanoXplore HW or SW issues