

## Hitex Technology Spotlights

### What's in a name... ?

## What's in a Name? Choosing your i.MX 8

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### Introduction

When it comes to the i.MX 8 processors, actually quite a lot . The variants of the i.MX 8 are as diverse as Roses are in the horticultural field. We try to clarify some of the differences in this article and how to select the correct one for your project.

Shakespeare wrote “What's in a name? That which we call a rose by any other name would smell just as sweet.” Meaning changing the name to something else would not stop it being what it is. However, he did not have the problem of selecting a CPU for his word processor.

### Next generation

NXP's latest generation of processors are named i.MX 9 and this describes a new processor product series currently of 3. However, go back a generation and the i.MX 8 processors are still current and relevant. Yet here there are 8 distinct products included that are diverse in more areas than you might expect. Let me explain by going back to the i.MX 6 which has 9 product lines, or 12 if you include the 3 ultralight versions! The i.MX 6 are all based on a Cortex A9 core processor with the main variations being either a single, dual or quad variants, the majority of which maintain a pin compatibility providing a means for product diversity with minimal or no change to hardware or indeed software. This is not the case with the i.MX8 range . Whilst most have the Cortex A53, some have the Cortex A35 and Cortex A72 as well as variants with M4 and M7. Add in DSP , NPU and GPU and you start to diverge with more features and graphics capabilities and power requirements etc. This means that perhaps if you were unsure with an i.MX 6 for instance if you would have enough performance you could have started the design with a single core and moved to a dual or quad core in the latter stages of design. This decision has to be firmly taken at the start of the project with the i.MX 8. To use another adage, a picture paints a thousand words, you can see the range of i.MX8 products we offer from just one of our manufacturers TQ below :-



Based on i.MX 8M Plus



Based on i.MX 8M Mini



Based on i.MX 8X



Based on i.MX8M Nano



Based on i.MX 8M



Based on i.MX 8

Where as if you go back to the i.MX 6 remembering this had 9 product lines, here excluding the Ultra-light versions, below is the offering from TQ for this family.



Based on the i.MX 6

So, how do you decide which one to choose? I think the best way is as Shakespeare implied, to ignore the name and concentrate on what it is i.e. the Core processors and features that you require and treating them as separate products, then you can make your selection based on the best match to your requirements.

Below is a table which will help with the decision process :-

Product Family		i.MX 8 Advanced Graphics, Performance and Virtualization	i.MX 8M Advanced Audio, Voice and Video	i.MX 8M Mini Embedded Consumer and Industrial Applications	i.MX 8M Nano Embedded Consumer and Industrial Applications	i.MX 8M Plus Machine Learning, Vision, Multimedia and Industrial lot	i.MX 8X Safety certifiable and efficient performance
CPU, GPU, and DSP	Cortex®-A72	2	-	-	-	-	-
	Cortex®-A53	4	4	4	4	4	-
	Cortex®-A35	-	-	-	-	-	4
	Cortex®-M4F	2	1	1	-	-	1
	Cortex®-M7	-	-	-	1	1	-
	Cortex®-DSP	1	-	-	-	1	1
	Cortex®-NPU	-	-	-	-	1	-
	Cortex®-GPU	2	1	1	1	1	1
HMI & Multi- media	Display Resolution and Interfaces: MIPI-DSI / Parallel / HDMI	4K + 1080 2 / 1 / 1	4K + 1080 1 / 0 / 1	1080 1 / 0 / 0	1080 1 / 0 / 0	1080 1 / 1 / 1	2x 1080 2 / 1 / 0
	Camera Interfaces: MIPI-CSI / Parallel / HDMI	2 / 2 / 1	2 / 0 / 0	1 / 0 / 0	1 / 0 / 0	2 / 0 / 0	1 / 1 / 0
	Video Decode Resolution (Top Codecs)	4K (h.265, h.264)	4Kp60 with High Dynamic Range (h.265, VP9); 4Kp30 (h.264, VP8) 1080p60 (h.265, VP9, h.264, VP8)	1080p60 (h.265, h.264, VP8, VP9)	-	1080p60 (h.265, h.264, VP9, VP8)	4K (h.265); 1080p60 (h.264, VP8)
	Video Encode Resolution (Top Codecs)	1080p30 (h.264)	1080p30 (h.264) – SW	1080p60 (h.264, VP8)	-	1080p60 (h.265, h.264)	1080p30 (h.264)
Inter- faces	PCIe	2	2	1	-	1	1
	Gigabit Ethernet	2x	1x	1x	1x	2x (1x TSN)	2x
CPU Power	CPU Power	5-12 W	1-4 W	1-4 W	1-4 W	2-6 W	1,5-6 W

## Summary

For further information on our full range of i.MX8 products head to our [website](#). We may be able to dual source them with compatible lines where available. Contact us for help and guidance on the selection process.

## Further Information

For more information visit our website: [www.hitex.co.uk](http://www.hitex.co.uk) or get in touch: [info@hitex.co.uk](mailto:info@hitex.co.uk). You can also connect with us: [LinkedIn](#)