

NILE-X

Industrialising power-management
IP: automated characterisation and
production test

Ashtronix Ltd, UK





 **smart**
advanced manufacturing

ORGANISATION PROFILE

Name: Ashtronix Ltd, Swindon, UK (founded 2019)

Personnel and size: micro SME of IC design and post-silicon validation engineers

Products and services

- Validation, characterisation and test automation for major semiconductor companies
- Licensable power-management IP: Nile (ASH-NL100), first silicon on SkyWater 130 nm
- In-house test hardware and control software for chip characterisation

Technical areas: test automation, data analysis, characterisation, power IC design

R&D project expertise

- Took Nile from design to first silicon via an international multi-project wafer
- Validated production silicon, from first bring-up through to production
- International collaboration through Innovate UK programmes

PROPOSAL INTRODUCTION (I)

Vision: a fast, automated route from first silicon to volume production for power-management IP on mainstream processes, with predictable yield and quality

Motivation

- Industrialising analog and power IP is slow and costly: each new process needs redesign, re-characterisation and re-validation
- Characterisation and test development remain largely manual, slowing time to volume
- Process variation affects analog performance and yield and must be designed for early

Content

- Port Nile to a mainstream process with design-for-manufacturing and trimming
- Automated, data-driven characterisation across process, voltage and temperature
- Production-test programme and yield analysis for volume manufacturing
- Pilot production and validation with industrial partners

PROPOSAL INTRODUCTION (II)

Expected outcome

- Nile IP on a mainstream commercial process, validated on pilot production silicon
- Reusable automated characterisation and production-test flow for analog and power IP
- Yield and test data demonstrating readiness for volume manufacturing

TRL: 5 at project start → 7 at project end (validated on pilot production silicon)

Impacts

- Shorter, lower-cost route from first silicon to volume production
- Higher, more predictable yield through design-for-manufacturing and data-driven test
- Test automation that partners can reuse for their own products
- Production-ready, licensable IP for European chip makers

Schedule: indicative start in the second half of 2027; duration 36 months



PARTNERS

Current consortium

- Ashtronix Ltd (UK): proposer; power IP, characterisation and test automation

Partner search: from any country participating in the call

- **Coordinator:** an industrial or research organisation experienced in Eureka projects
- **Manufacturing partner:** a foundry or design-services company with a mainstream process
- **Test partner:** an automated test equipment provider or test house
- **Industrial user:** a chip or device maker to integrate and validate the IP



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