



RDS 2.0 | WIN 2.0 Software Upgrade

A fresh upgrade from DOS to a tried and
true system

NEEDHOLM

Improvements of WIN 2.0



Pros of DOS

- Stable environment
- Single-tasking
- Programming free

Cons of DOS

- Security issues
- Networking issues
- 8-character file limit
- Q&A walkthrough in making each test
- File-based system
- Tests are used and edited in multiple instances

WIN 2.0 gives the best of both

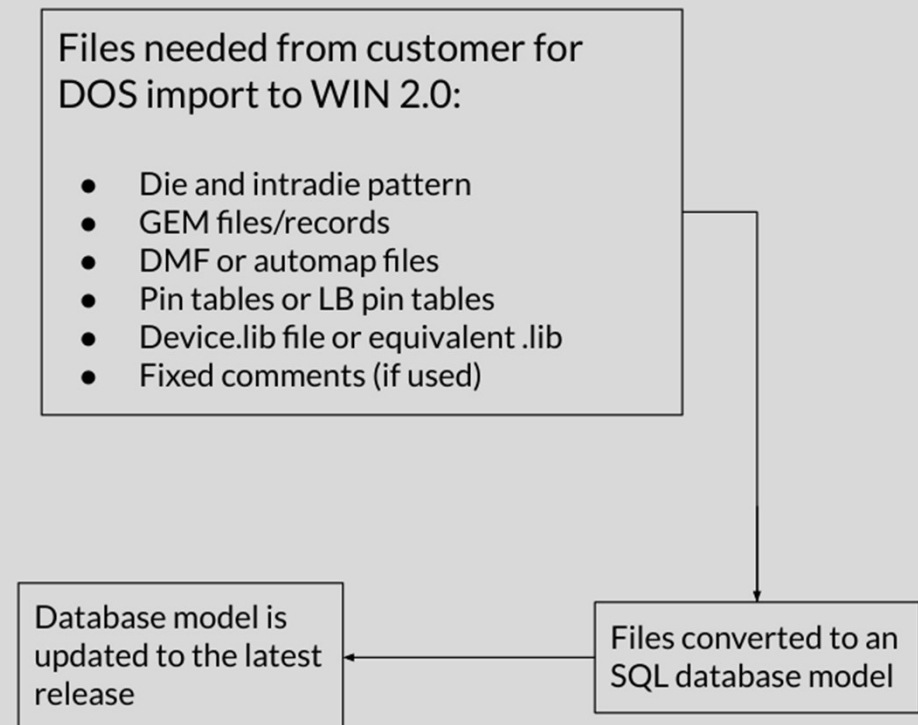
- Stable environment
- Programming-free usage
- Security and networking issues resolved
- No 8-character file limit
- Open multiple test plans at the same time

- Tabs within the software with the possibility to open them side-by-side
- Easy device setup in clearly defined, tiered lists
- SQL database replaces file-based system – everything is stored in the database
- Manage multiple tests in a single, named list, easily accessible
- Variable privileges (operators, engineers, techs, admin)

DOS to WIN 2.0 migration



- Batch-based import process, takes files from DOS, and converts them into RDS **Intranet-friendly file** extensions, groups devices by notch/flat alignment
- Test procedures are **not changed**. Tests do **not need to be requalified**; the only thing that changes is how the tests are saved
- This can be contracted to Reedholm as part of the upgrade project, **minimizing downtime** for customers and their systems



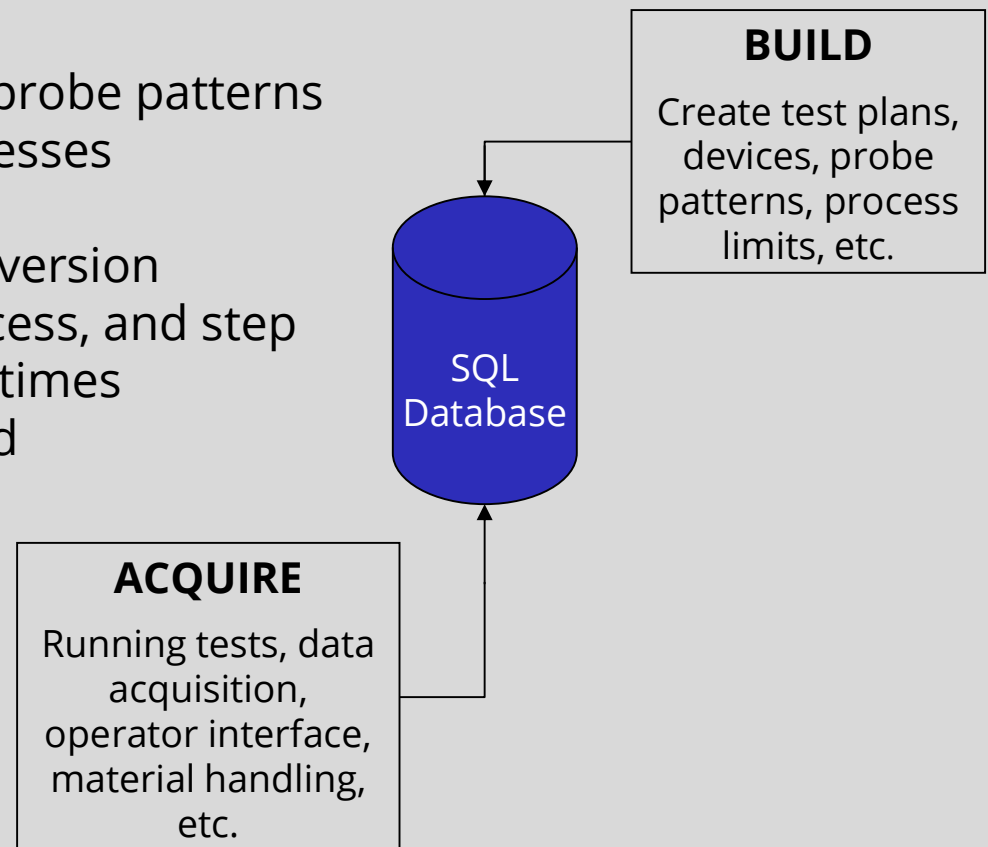
Database Management



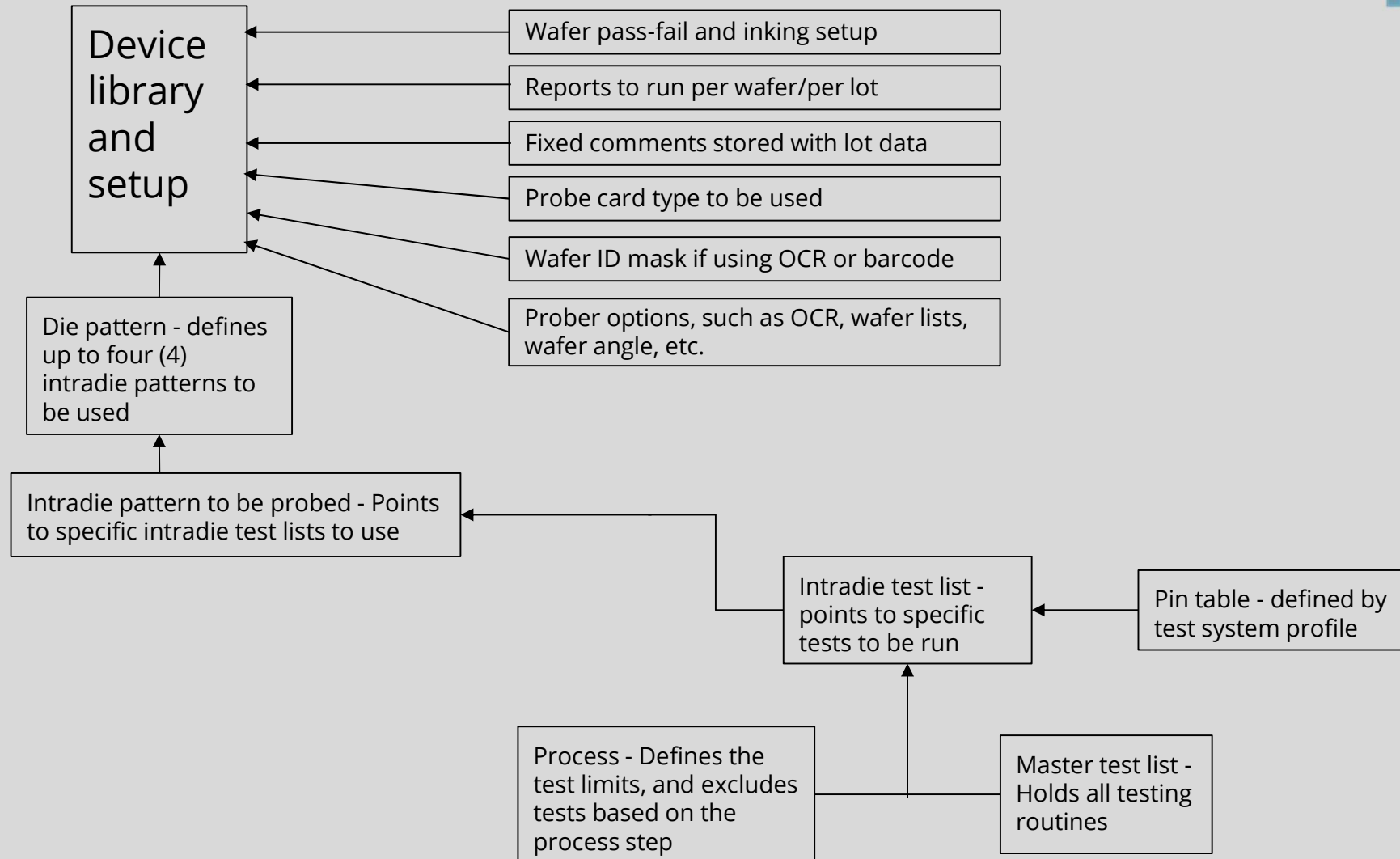
All crucial information is securely stored in the database, allowing for easy access and efficient management.

Everything in Database

- Test conditions, results, and probe patterns
- Library of products and processes
- Multiple version control
- Release of single production version
- Data grouped by device, process, and step
- Test same wafer lot multiple times
- Process and device controlled



Test Plan Hierarchy



Test Plan Creation



WIN 2.0 contains an expansive list of test templates that cover **bipolar, depletion FET, and enhancement FET** devices implemented on **GaAs, GaN, Si,** and **SiC** materials. The test engine has capabilities such as:

- Prober driver and probe site editor
- Lot reports and test data exporting
- Version control of test library and devices
- Test routine code documentation
- Test conditions (Pins, voltages, etc.)
- System manuals and training guides

The screenshot displays three panels from the WIN 2.0 test plan creation software. Each panel has a 'Parameters' section at the top with fields for 'Test Name', 'Version', 'Last modified on', 'By user', and 'Last used on'. Below this is a 'Description' field. The main body of each panel contains various input fields for test parameters, including 'High pins', 'Bias pins', 'Bulk pins', 'Well pins', 'Low pins', 'Vcomp', 'Vbias', 'Vbulk', 'Vwell', 'Vforce', 'Icomp', 'Ibias', 'Ibulk', 'Iwell', 'Iforce', and 'Ground pins'. There are also sections for 'Delays' (Initial delay, Discharge time) and 'Meter & Sampling' (Range, Samples, SyncMeasure, Meter selection). The panels are titled 'Measure Current or Resistance - 4007 Gate Leakage B (Ver 1)', 'Edit Intradie Test List - 4007 FET Lab (Ver 1)', and 'Measure Current or Resistance - Sweep Voltage - 4007 NFET Gate Current B Sweep (Ver 1)'.

Simply Build Tests

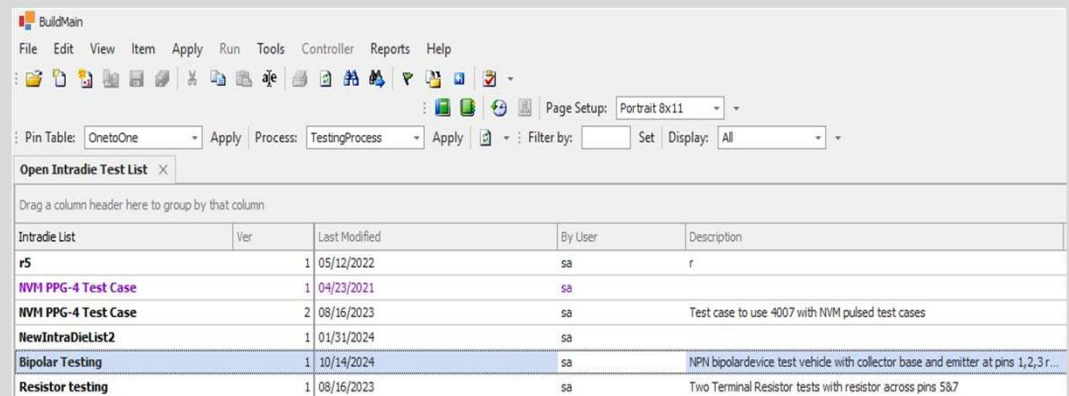


In the Build application, you have access to all the essential tools required to create the optimal environment for your test system.

Device Setup

You can set up all of your parameters for testing in Build. This includes:

- Die and intradie patterns
- Intradie tests and test lists
- Device parameters (pass/fail setup, report options, processes and process steps)
- Probing setup and probe card setup
- Tester profile configuration

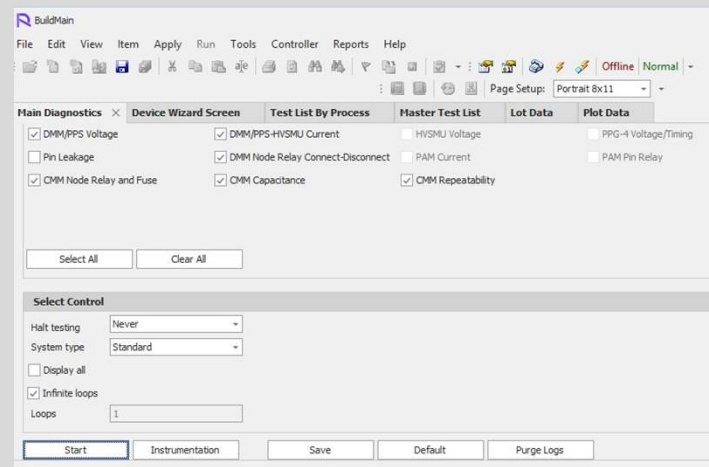


Intradie List	Ver	Last Modified	By User	Description
r5	1	05/12/2022	sa	r
NVM PPG-4 Test Case	1	04/23/2021	sa	
NVM PPG-4 Test Case	2	08/16/2023	sa	Test case to use 4007 with NVM pulsed test cases
NewIntraDieList2	1	01/31/2024	sa	
Bipolar Testing	1	10/14/2024	sa	NPN bipolar device test vehicle with collector base and emitter at pins 1,2,3 r...
Resistor testing	1	08/16/2023	sa	Two Terminal Resistor tests with resistor across pins 5&7

Diagnostic Tools

There are several diagnostic tools to keep the system healthy, efficient, and accurate:

- Main Diagnostics for ensuring system health
- Self Calibration to ensure module accuracy
- Prober Checkout to make sure connection to prober is established and functioning properly



Main Diagnostics

☒ DMM/PPS Voltage ☒ DMM/PPS-HVSMU Current ☐ HVSMU Voltage ☐ PPG-4 Voltage/Timing

☐ Pin Leakage ☒ DMM Node Relay Connect-Disconnect ☐ PAM Current ☐ PAM Pin Relay

☒ DMM Node Relay and Fuse ☒ CMM Capacitance ☒ CMM Repeatability

Select All Clear All

Select Control

Halt testing: Never

System type: Standard

☐ Display all

☒ Infinite loops

Loops: 1

Start Instrumentation Save Default Purge Logs

What is needed - Deliverables



We provide

- RDS WIN 2.0 Software
 - Engineering services (data migration, training)
 - Customization Support (specific privileges, additional features, etc.)
 - Active developer support (solving bugs, implementing changes, patches)
 - DR YIELD graphical display software
 - Workshops (done with Reedholm and customer) to determine what, if any, NRE is needed
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You Provide

- PC with Windows 10/11
- Microsoft SQL 2019
- MSS Reporting Service

Summary



WIN 2.0 was developed to be a fresh face for the RDS software, as well as improving the quality of life for customers. The important features and changes are:

No lag time

- WIN 2.0 delivers a fast and highly responsive user experience
- Applications run smoothly with minimal latency or slowdowns

Long-term support

- Created for longevity
- Active development team
- Changes and customizations are available, along with workshops, active support, and SW patches

Test Plan Creation

- Comprehensive list of several verified premade test plans
- Accessible options, QOL improvements
- Cursor highlight tooltips
- Creating tests can take as little as 30 seconds
- Ability to run tests in the test editor, as well as curve tracing, results, and descriptive validation checking

IT Security

- DOS can pose security threat
- WIN 2.0 is up to date with Windows 10/11, as well as any security patches or updates that come along