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# **DIFI PlugFest Report**

## **-- Test Set 1 --**

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**Technical Lead, Kratos Space**  
**Chair, DIFI Certification WG**

**October 8, 2026**

# Agenda

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- DIFI PlugFest Attendees and Goals
- Test Set 1 Overview
- PlugFest Testing Schedule
- PlugFest Interoperability Test Results
- DIFI Interoperability Demo
- Learnings and Next Steps
- Test Set 1 Summary



# DIFI PlugFest Attendees

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CACI



CALIAN



CELESTIA



evertz

FILTRONiC

dev

KEYSIGHT

Viasat



KRATOS

Welkin Sciences

SAFRAN

WORK  
MICROWAVE

# DIFI PlugFest – Purpose and Goals

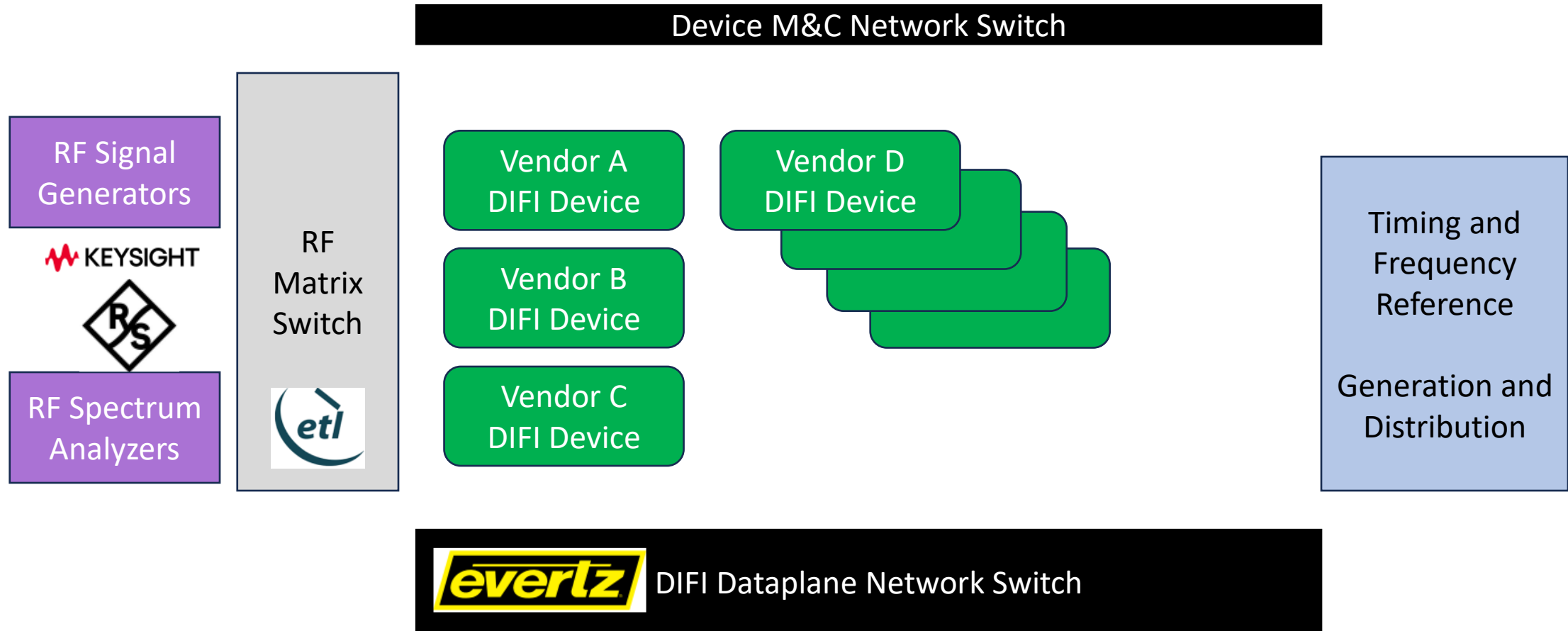
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- PlugFest Purpose
  - Encourage industry adoption of DIFI Specification
  - Test interoperability among vendors
  - Find issues and uncover differing assumptions
  - Fix implementation bugs and re-test
  - Feed back recommendations and learnings into the specification
- 2026 PlugFest Goals
  - Evaluate vendor readiness per certification-targeted profile, DIFI Core
  - Engage with 3<sup>rd</sup> Party Interoperability Certification lab candidates
  - Evaluate and improve vendor implementations of DIFI Capabilities
  - Generate recommendations for improvements to the specification



# Test Set 1 Overview

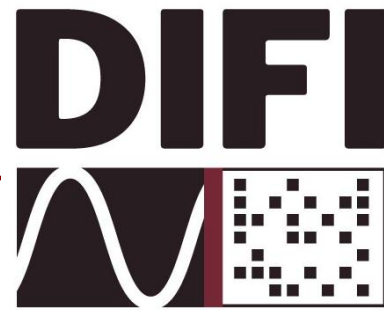


# Test Set 1 Overview



# PlugFest Schedule - Setup

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| Thursday 10/1                        | Friday 10/2                                       | Saturday 10/3                                     | Sunday 10/4                        |
|--------------------------------------|---------------------------------------------------|---------------------------------------------------|------------------------------------|
| Vendors arrive                       | Vendors arrive                                    | Vendors arrive                                    | Vendors arrive                     |
| Vendors set up their own equipment   | Vendors set up their own equipment                | Vendors set up their own equipment                | Vendors set up their own equipment |
| Vendors integrate into test backbone | Vendors integrate into test backbone              | Vendors integrate into test backbone              |                                    |
|                                      | Draft certification procedure evaluations are run | Draft certification procedure evaluations are run |                                    |



# PlugFest Schedule – Interoperability Testing



|           | Monday 10/5                | Tuesday 10/6              | Wednesday 10/7                          |
|-----------|----------------------------|---------------------------|-----------------------------------------|
| Morning   | DIFI Core                  | High Rate                 | Interoperability Demo Configuration     |
|           | 100% Vendors Participating | 67% Vendors Participating | 100% Vendors Participating              |
|           |                            |                           |                                         |
| Afternoon | DIFI Core                  | Flow Control              | Link Establishment & Other Capabilities |
|           | 100% Vendors Participating | 72% Vendors Participating | 100% Vendors Participating              |



# CORE Profile Tests

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- All vendors participated in Core Profile tests.
- Test results were reported with three ratings:
  - **GREEN** All packet types processed
  - **YELLOW** At least one packet type not processed correctly
  - **RED** No packets processed
- 28 tests performed with one DIFI source transmitting to 30+ DIFI sinks
- 16 devices passed **GREEN** with at least 90% of the other devices
- 26 devices passed **GREEN** and **YELLOW** with at least 90% of the other devices



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# DIFI600 Profile Tests

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- Two-thirds of vendors (12 of 18) participated in DIFI600 tests.
- Most tests performed at 600 Msamp/s; two performed at 500 Msamp/s
- Test results were reported with three ratings:
  - **GREEN** All packet types processed
  - **YELLOW** At least one packet type not processed correctly
  - **RED** No packets processed
- 13 tests were performed with one DIFI source transmitting to 16 DIFI sinks
- 9 devices passed **GREEN** with at least 80% of the other devices
- 12 devices passed **GREEN** and **YELLOW** with at least 90% of the other devices



# DIFI600 Profile Matrix

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# Flow Control Results

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- 13 companies (72% of attendees) participated with 21 devices
- 37 tests with source-to-sink pairs attempted DIFI flow control operations
- 23 pairings passed flow control, answering “yes” to all five questions
  - Was the sink buffer being exercised?
  - Was the sink sending command packets?
  - Was the source receiving command packets correctly?
  - Was the source adjusting transmission as expected?
  - Overall, was flow control working?
- Remaining pairs partially passed; more importantly, the vendors gathered information on how to improve their devices



# Link Establishment Results

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- Eight companies (44% of attendees) attempted Link Establishment
- Reporting included answering these four questions:
  - Query of capabilities was successful?
  - Queries and responses were successfully exchanged?
  - Was a link established?
  - Were you able to terminate the link?
- Three pairings successfully established and terminated links



# DIFI Specification Coverage

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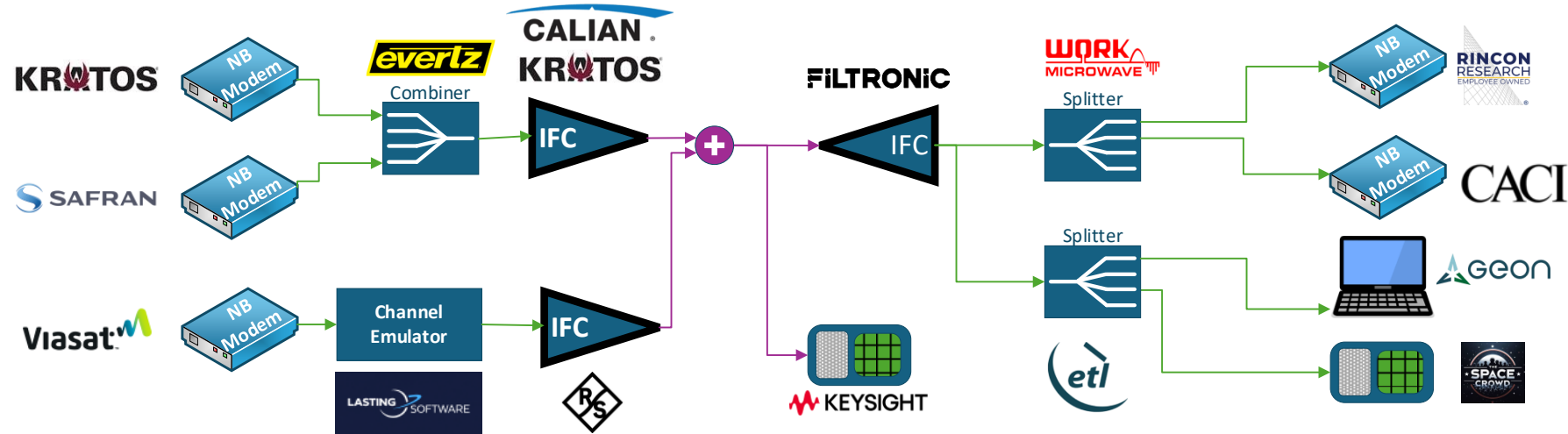
- The Core, DIFI600, and Flow Control profiles continued previous PlugFest testing, covering 70% of the DIFI Specification's non-LE capabilities
- This year's results show the expansion of companies/devices that have successfully implemented not just basic DIFI functionality, but also flow control between vendors
- This year, the DIFI community jumped into the new territory of Link Establishment, adding at least 43% coverage of the LE capabilities
- Not only have companies started implementing Link Establishment features, but some vendors' devices were able to successfully interoperate



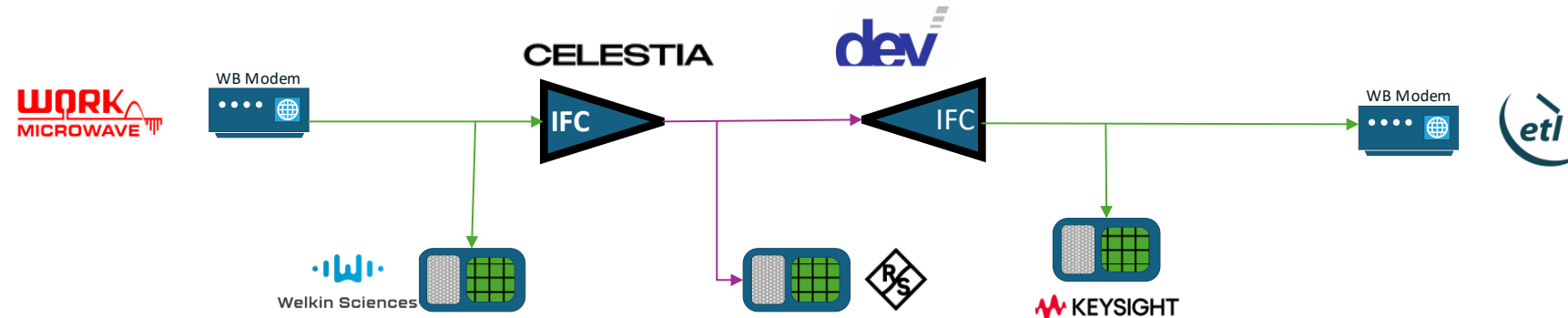
# PlugFest Interoperability Demo



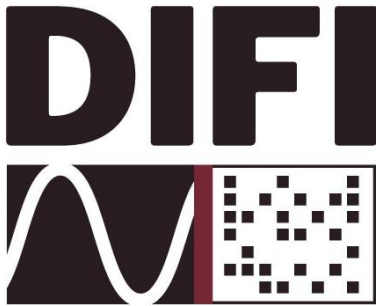
## NB Modem Setup



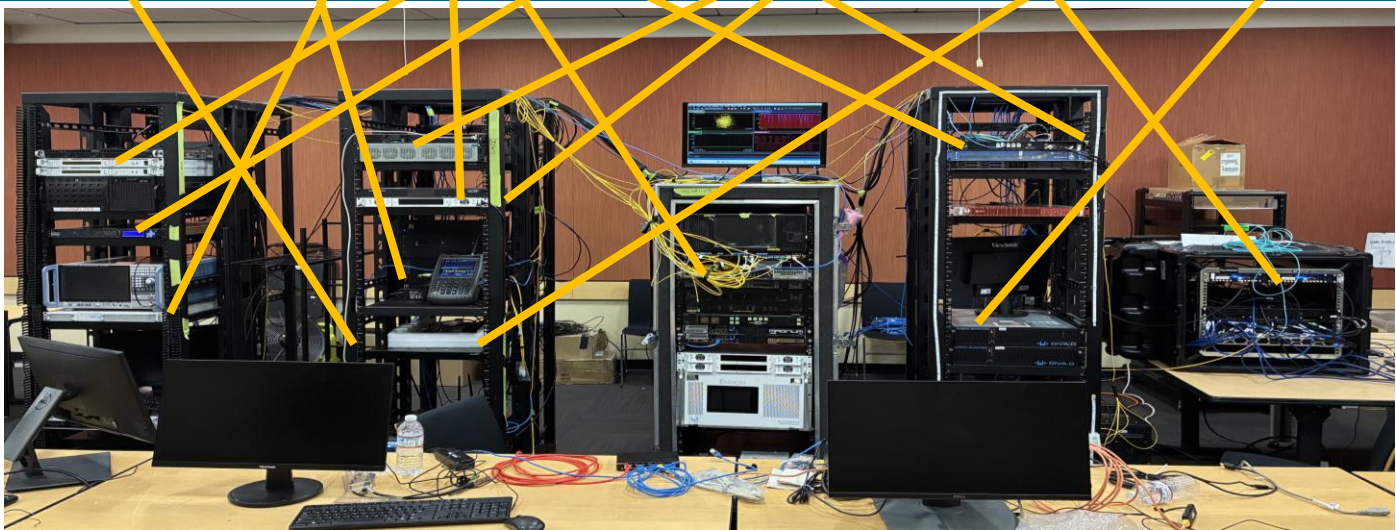
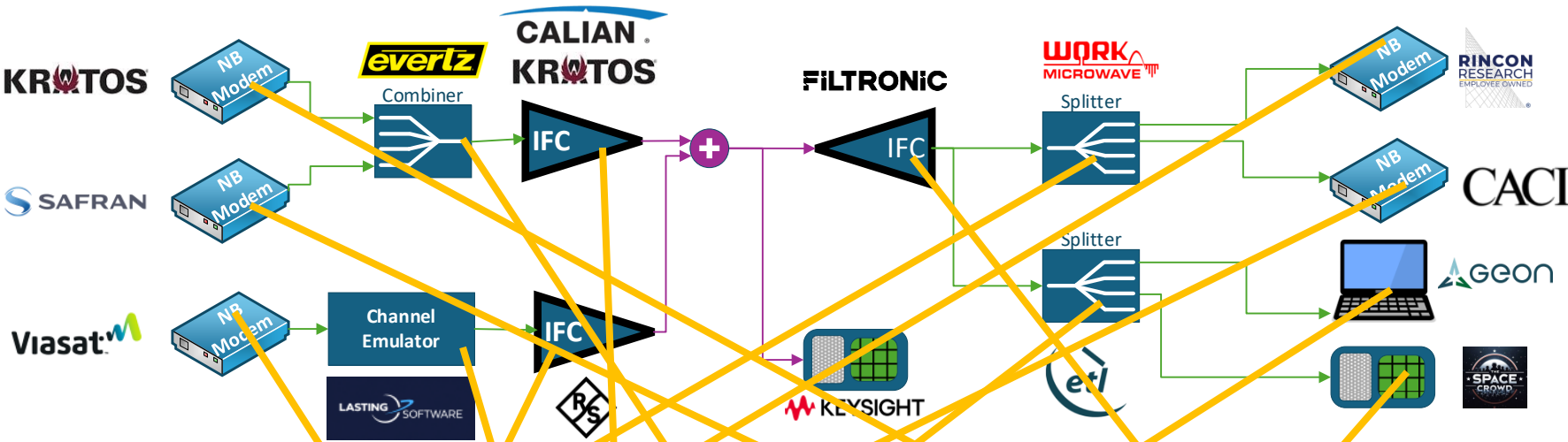
## WB Modem Setup



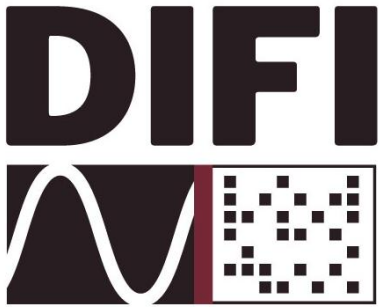
# PlugFest Interoperability Demo - NB



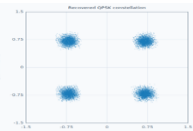
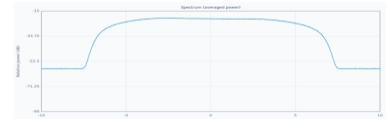
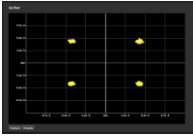
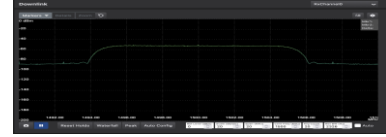
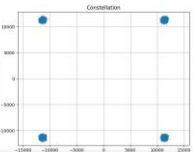
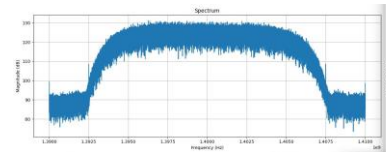
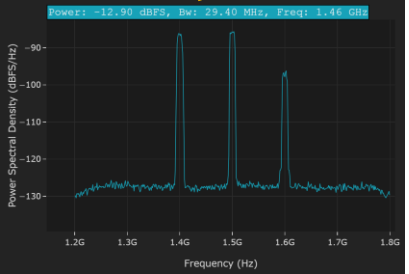
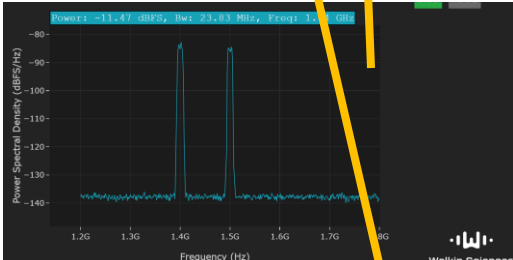
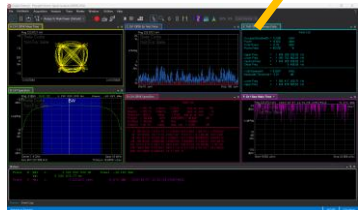
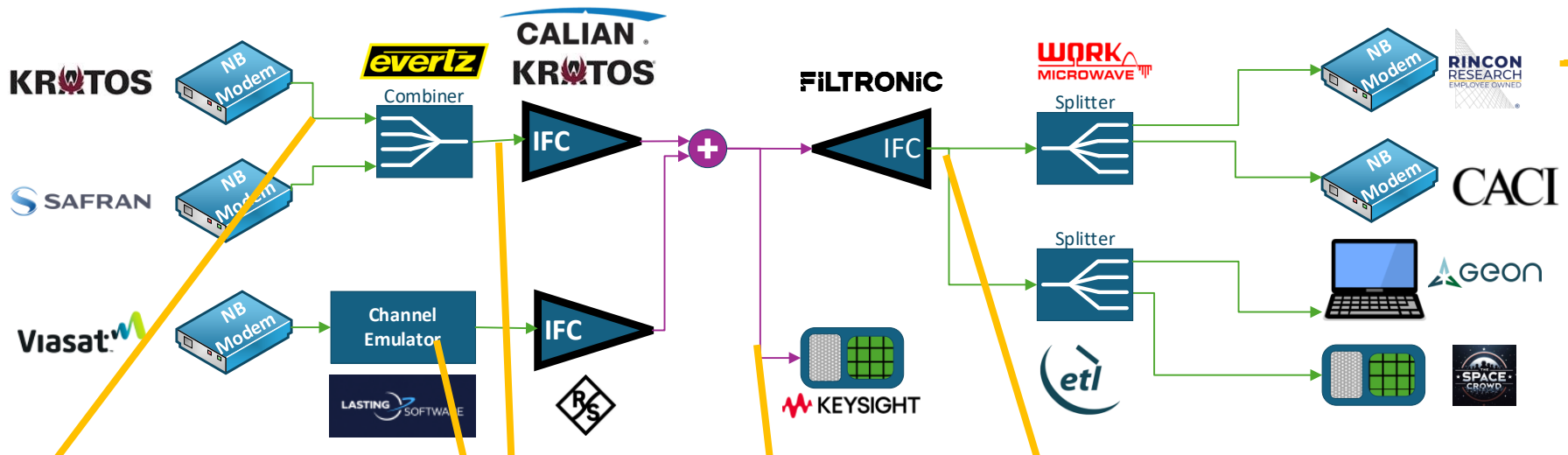
## NB Modem Setup



# PlugFest Interoperability Demo - NB



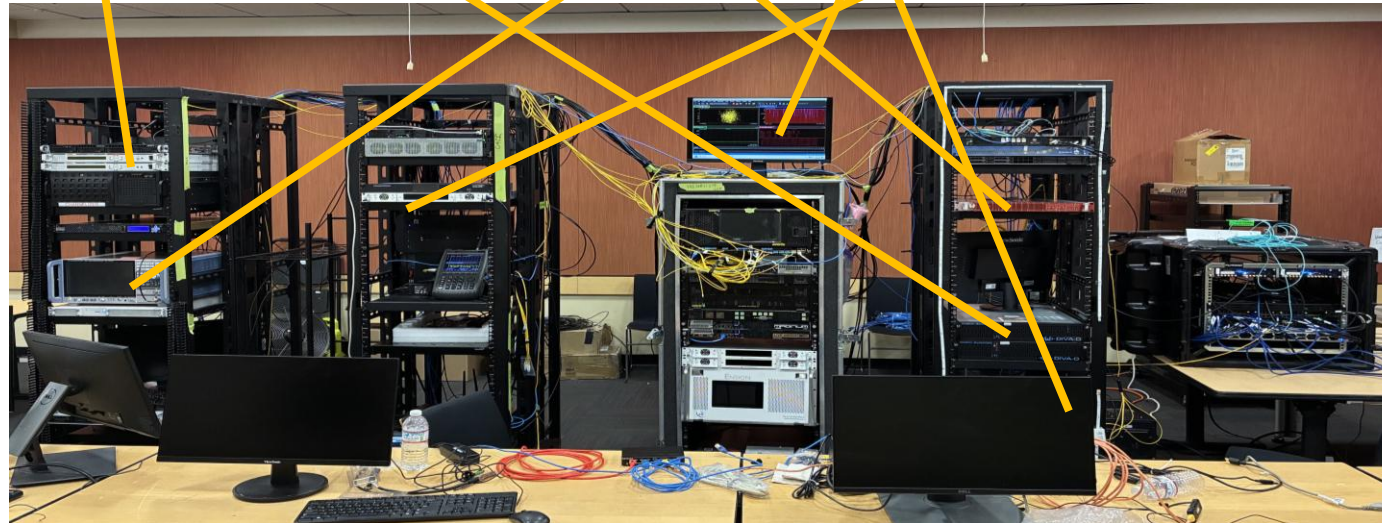
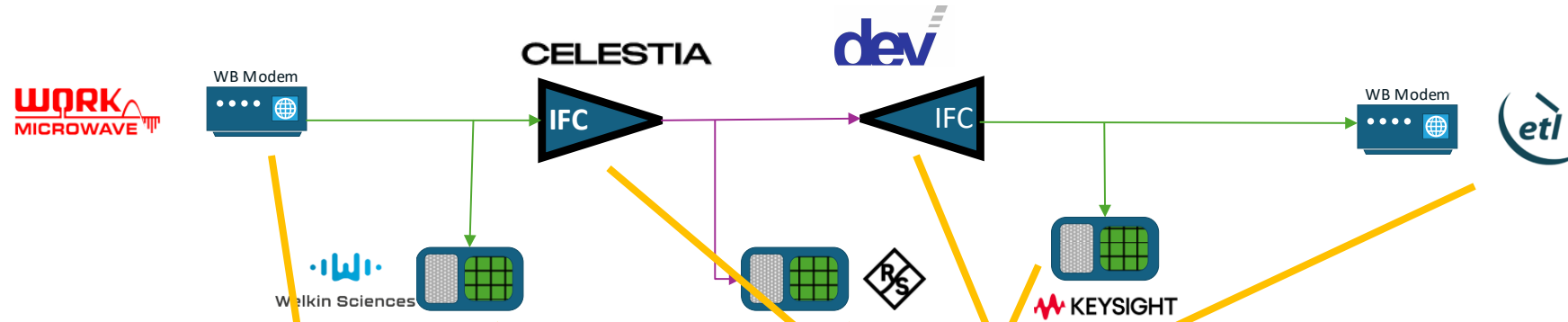
## NB Modem Setup



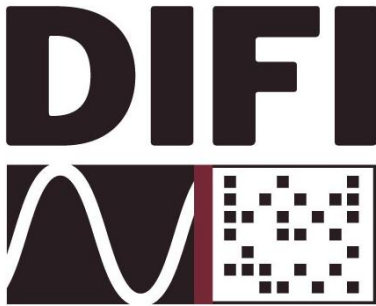
# PlugFest Interoperability Demo - WB



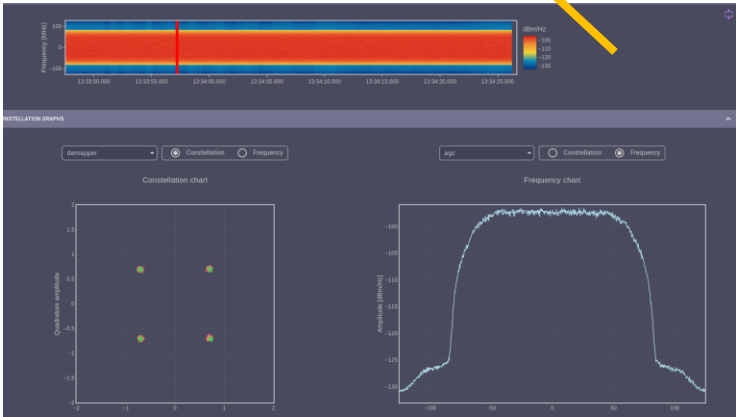
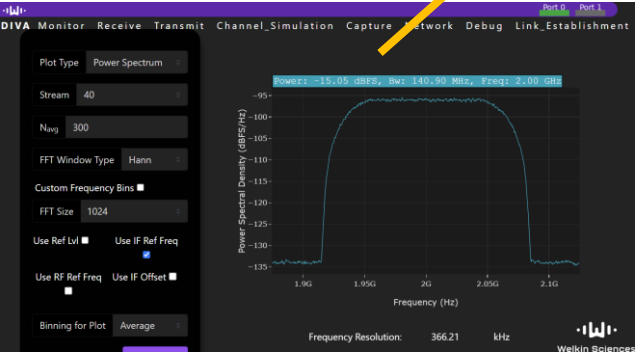
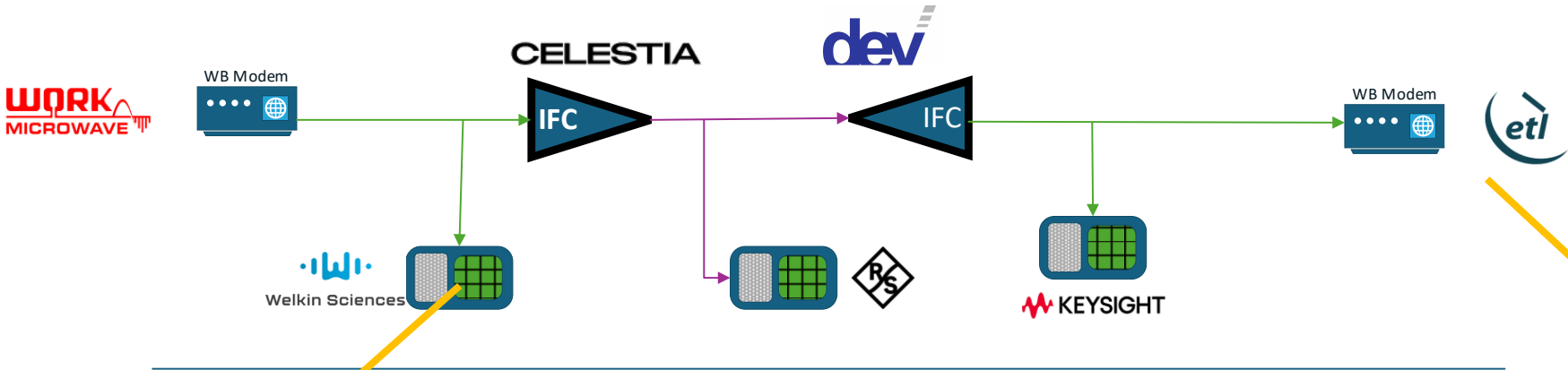
## WB Modem Setup



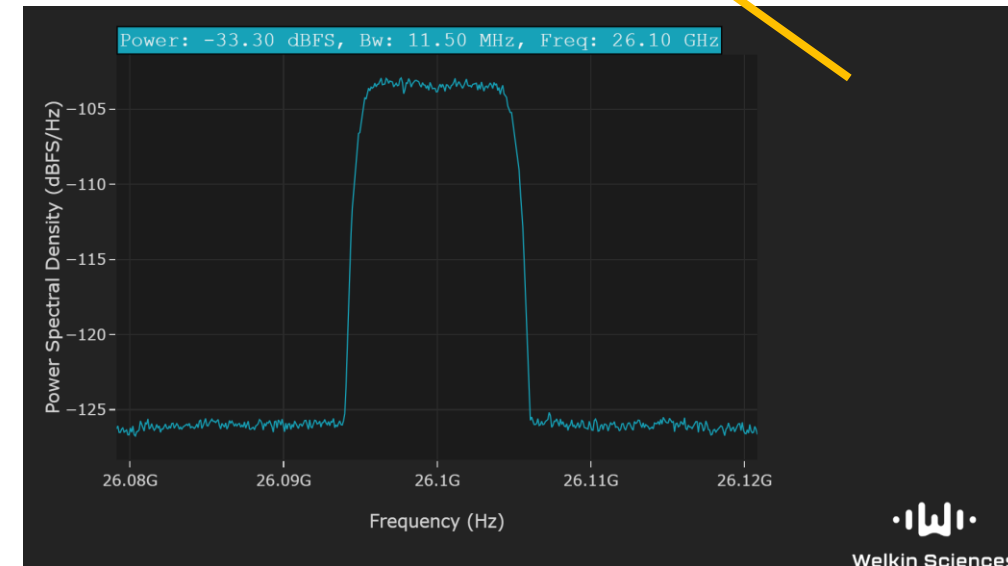
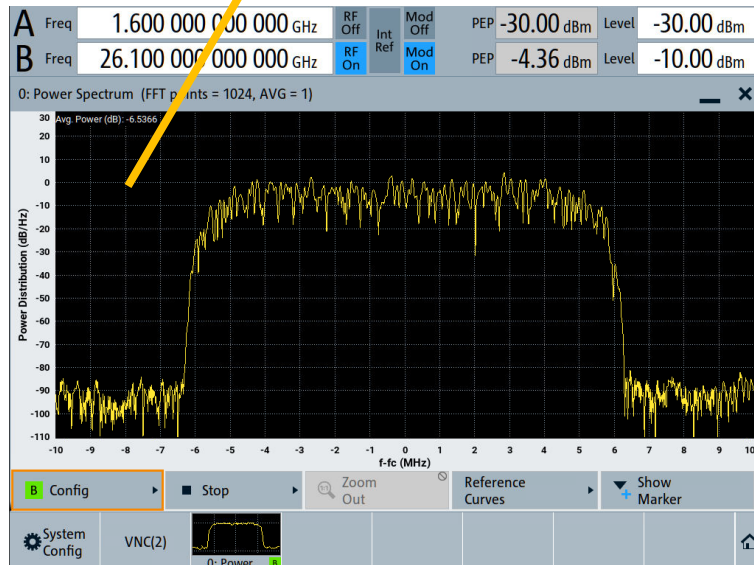
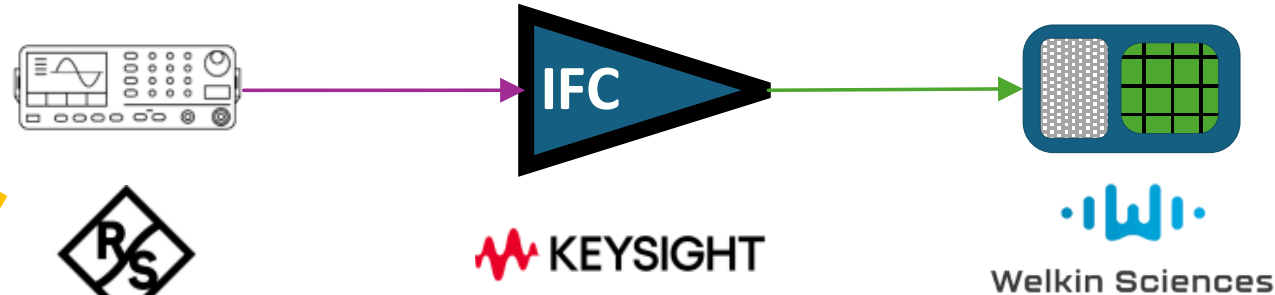
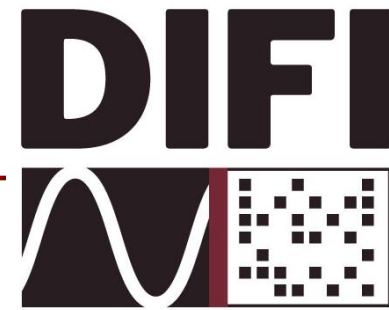
# PlugFest Interoperability Demo - WB



## WB Modem Setup



# PlugFest Interoperability Demo – Ka Band



# Learnings and Next Steps

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- Learnings from Test Cases
  - Context Packet vs Version Context Packet type
  - Clarity on RF/IF Reference Frequency and Reference Point
  - Alignment to profile parameters
  - Reference Level and power measurements
  - Flow control packet rates for improved control loop performance
- Next Steps
  - Specification Feedback sent to Simon Swift, Chair of Spec WG
  - Certification dry runs informing procedure updates
  - 3<sup>rd</sup> Party Interoperability Certification plan moving ahead



# Test Set 1 Summary

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- 18 total vendors
- 33 total devices
- 60 total Test Day participants
- 100% participation in DIFI Core Interoperability
- 65-75% participation in High Rate and Flow Control testing
- Link Establishment testing performed for the first time
- Interoperability Demos show broad adoption of DIFI Standard



# Thank You

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