



# The Impact of Changes to ETSI EN 300 328

**Presented by Thomas T. Smith**  
**VP of EMC Test Services**

# Presentation Overview

**The focus of this presentation is to discuss important changes in ETSI EN 300 328:**

- **Explain the reason behind the revision**
- **Highlight the new testing requirements and the effect on cost**
- **Provide guidance on how to be prepared for testing**

# History

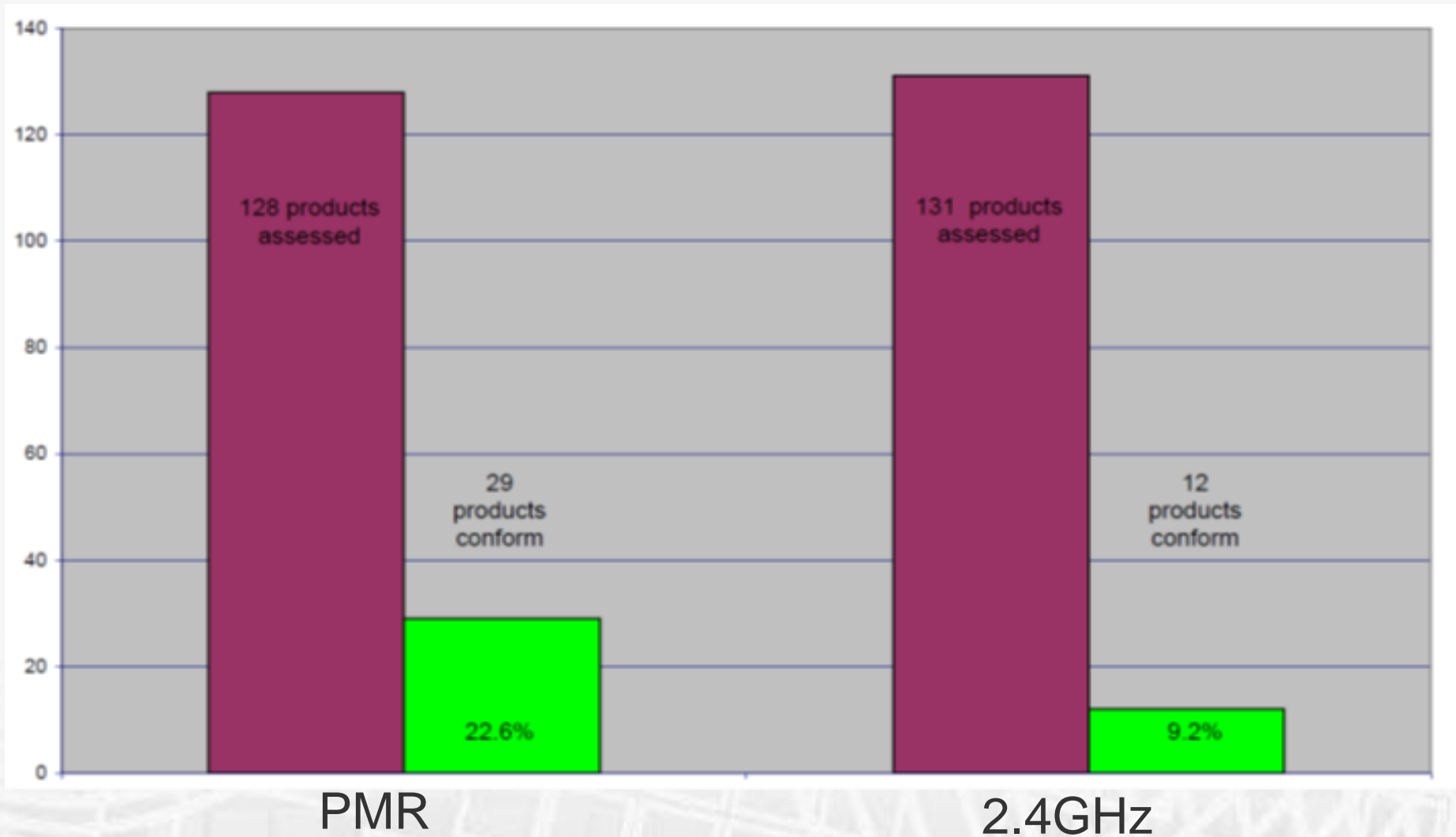
- **Current version ETSI EN 300 328 v1.7.1 was last updated in 2006**
- **Three Main items contributed to the desire for a new revision**
  - Customer Complaints and Interference
  - Manufacturer struggles with the determining compliance to the standard
  - Market Surveillance report
- **ADCO- Administrative Cooperation feedback**
  - Each New approach directive (which the R&TTE is) has an “ADCO”
  - ADCO- is an informal group of national administrators in charge of the market surveillance. The ADCO group supports and complements the work of the formal committee or the working party of the directive.

# 3<sup>rd</sup> Market Surveillance Sept 2008-June 2009

- **Focus on PMR (Private Mobile Radios) and 2.4GHz license exempt radios**
  - Only 40% of 259 products comply with administrative requirements (PMR:53% and 2.4GHz products:27%)
  - Only 15.7% of 219 products comply with technical documentation requirements (this includes cases where there was no technical documentation available)
  - Only 62% of 242 products comply with the technical requirements when assessed on the basis of the relevant standards
  - Only 22.6% of the PMR and 9.2% of the 2.4GHz products complied with ALL of the requirements of the R&TTE Directive.

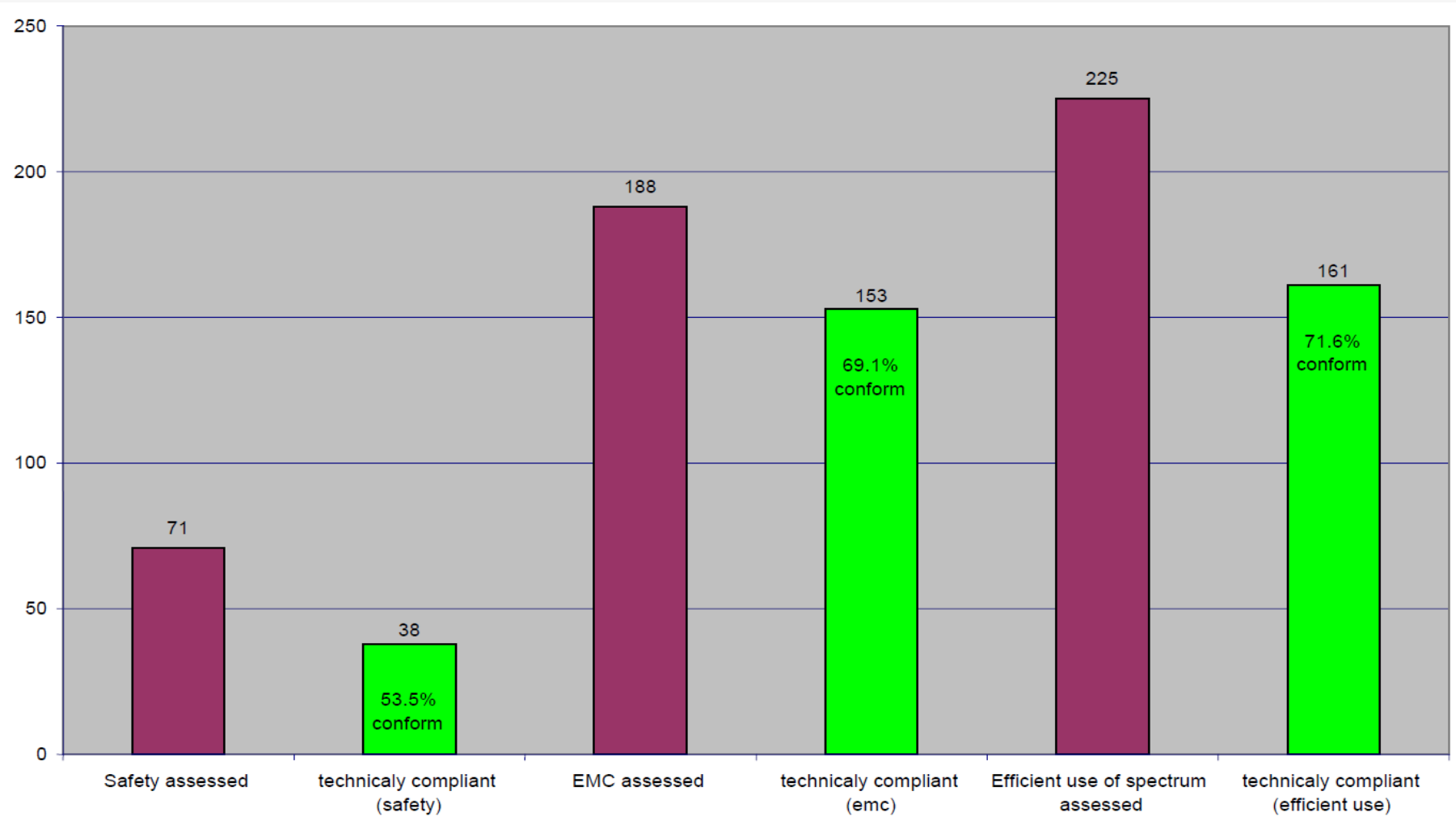
# Compliance Graph

Assessed Products with full conformance



# Breakdown of Compliance

## Assessed Areas for Conformance



# Time for an update

- Findings were reported to the TCAM 26 (Telecommunications assessment and Market Surveillance Committee)
- **TCAM made the recommendation for a revisions to ETSI EN 300 328 v1.7.1**
  - Major area of improvement was for the requirements for Medium Access Protocol
  - The current version did not provide clear guidance or information on how to assess products
  - Previously indicating the use of recognized protocols (ie. 802.11, Bluetooth Protocols and etc.) were deemed to be sufficient. If non-standard protocols were used, they were to implement similar features as the standard protocols to ensure equal spectrum sharing.
- **Date of Cessation is 12/31/2014 based on the publication in the Official Journal (OJ) for EU.**

# Impact of the Changes

- **Some of the changes in the standard were cosmetic**
  - Standard is now more similar in format to previously revised standards ETSI EN 300 220, ETSI EN 300 440 and ETSI EN 301 893
- **Due to the number of changes and the types of changes a full retest of the entire product is required.**
- **No ability to leverage existing test data.**



# Determining Test Path

- **Division into categories**

- Frequency hopping technology
- Wide band modulation other than frequency hopping (DTS)

- **Subcategories**

- Maximum EIRP  $< 10\text{mW}$
- Maximum EIRP  $\geq 10\text{mW}$

- **Exemption**

- ALL Devices (FHSS and DTS) under 10mW are exempt from complying with:
  - Duty Cycle, TX Sequence, TX Gap
  - Medium Utilization Factor
  - Adaptivity

# Defining the changes

- **Changes in Measurement Method but no change in limits**
  - RF Output Power, PSD
  - Conducted measurements are required at both Min/Max temperature
- **Increased RX requirements**
  - Sensitivity, Blocking and Spurious Emissions
- **New TX Requirements**
  - Duty Cycle, Medium Utilization Factor
- **Assumption of conformity to medium access protocol simply on the basis of following recognized protocols (802.11, 802.15.4, Bluetooth, BLE, etc) is no longer valid. Measured data is required in the compliance report.**

# Setup Considerations

## Previously required Features:

- **Continuous TX CW with Modulation**
- **Continuous TX CW without Modulation**
- **Continuous RX**
- **The above three modes need configurability of Channels (low, mid, high at a minimum) as well potentially the output power settings.**
- **Configurability for all available modes/data rates**
- **Normal Operation**
- **Samples need to have a 50Ω connection**

# Setup Considerations

## Potentially new configuration for manufacturers

- **Companion or device to pair with the Transmitter**
  - Standard Devices using recognized protocol pairing is fairly easy (Bluetooth, WIFI). Depending on your test lab the manufacturer may not need to provide a companion device.
  - Devices using proprietary or custom software pairing is more difficult and the manufacturer should be prepared to provide the test lab with samples for testing.

# Manufacturer Deliverables

The following is a list of things the manufacturer needs to complete

- **Verify product has the latest protocol/software updates**
- **Send samples for testing, be sure to include companion devices if necessary**
- **Collect Test Reports and other documents for the TCF**
- **Finally update User Manuals and Declaration of Conformity to show compliance to the latest version of ETSI EN 300 328 v1.8.1**

# Conclusion

- **ETSI EN 300 328 v1.8.1 will be required as of 1/1/2015**
- **Approximately a 20-50% increase in testing depending on the type of product**
- **Manufacturers may need to provide a companion device for the Medium Access Protocol testing.**

# Questions?

- Thomas T. Smith
- VP of EMC Test Services
- E-mail: [tsmith@lsr.com](mailto:tsmith@lsr.com)
- Direct: (262) 421-4986
- Main: (262) 375-4400
- [www.lsr.com](http://www.lsr.com)
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