

**Von:** [Andrew Leimer](#)  
**An:** [Francis Lima](#)  
**Thema:** RE: Single mode 12.5kHz Channel bandwidth in Part 90 narrow band  
**Datum:** Freitag, 1. April 2011 15:26:22

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If it is not on the exclusion list, TCBs can process the application. Analog 12.5 kHz devices can be certified by TCBs. Spectral efficiency standards do not apply to analog devices. You are not permitted to certify a 25 kHz BW analog device.

Regards,

Andy Leimer  
FCC/OET/EAB

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**From:** Francis Lima [mailto:f.lima@emcc.de]  
**Sent:** Friday, April 01, 2011 4:43 AM  
**To:** Andrew Leimer  
**Subject:** AW: Single mode 12.5kHz Channel bandwidth in Part 90 narrow band

Hello,

I have understood the exclusion list. Unfortunately, my question has not been answered. Item 1)) refers to **equal to 12.5kHz** in either **multi bandwidth modes** or under **provisions of spectrum efficiency standards**.

My question on the other hand relates to an analog device with **12.5kHz single bandwidth mode only** whereby **spectral efficiency standard is not applicable** because it is an analog device. Therefore the product in question is not subject to the exclusion list. What should I do? Proceed with certification or not?

Best regards / Mit freundlichen Grüßen / Cordialement  
Francis Lima

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**Von:** Andrew Leimer [mailto:Andrew.Leimer@fcc.gov]

**Gesendet:** Donnerstag, 31. März 2011 20:06

**An:** Francis Lima

**Betreff:** RE: Single mode 12.5kHz Channel bandwidth in Part 90 narrow band

The exclusion List is Published KDB 628591:

<https://apps.fcc.gov/oetcf/kdb/index.cfm>

Item 1) j) states:

Transmitters operating under the provisions of Section 90.203(j)(4) with channel bandwidths of greater than or equal to 12.5 kHz operating in either multi-bandwidth modes or under the special provisions of spectrum efficiency standards specified in Section 90.203 (j)(5), or operating under the provisions of one way paging channel standards of Section 90.203(j) (7).

Regards,

Andy Leimer  
FCC/OET/EAB

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**From:** Francis Lima [mailto:f.lima@emcc.de]

**Sent:** Thursday, March 31, 2011 2:01 PM

**To:** Andrew Leimer

**Subject:** AW: Single mode 12.5kHz Channel bandwidth in Part 90 narrow band

Hello,

Thanks for the response. I now understand that a TCB can do certification of the analog two way radio with a single mode 12.5kHz Channel bandwidth operating in the Part 90 narrow band. Am I correct?

Best regards / Mit freundlichen Grüßen / Cordialement

Francis Lima

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**Von:** Andrew Leimer [mailto:Andrew.Leimer@fcc.gov]

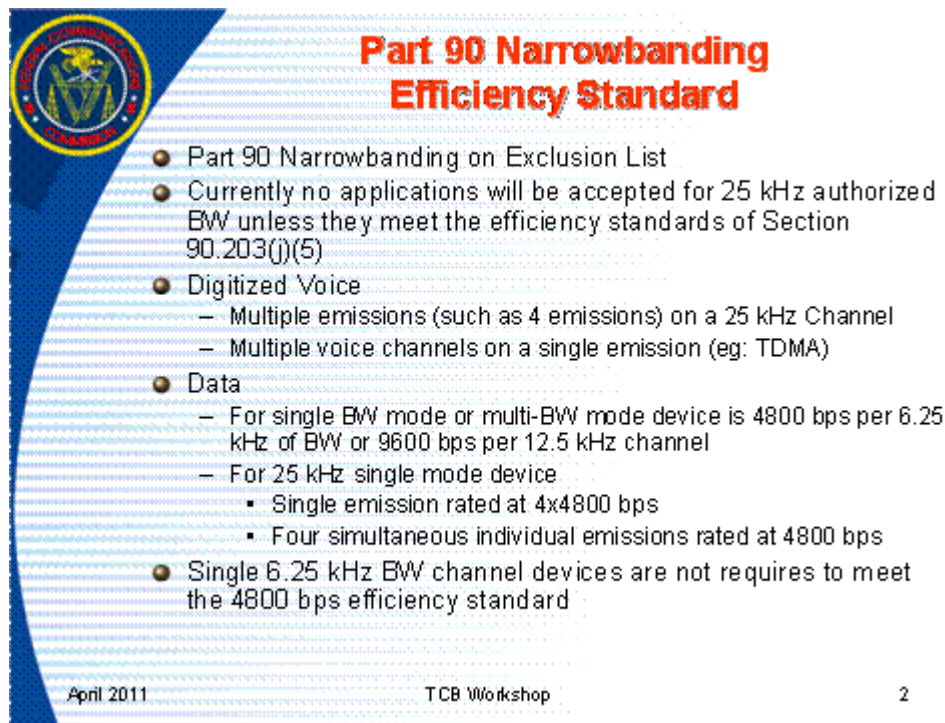
**Gesendet:** Donnerstag, 31. März 2011 19:11

**An:** Francis Lima

**Betreff:** RE: Single mode 12.5kHz Channel bandwidth in Part 90 narrow band

Hello,

In order to meet the spectral efficiency requirement the device must use digital modulation. The spectral efficiency requirements do not apply to analog voice. The basic requirements are shown in the following slide (To be released next week):



**Part 90 Narrowbanding Efficiency Standard**

- Part 90 Narrowbanding on Exclusion List
- Currently no applications will be accepted for 25 kHz authorized BW unless they meet the efficiency standards of Section 90.203(j)(5)
- Digitized Voice
  - Multiple emissions (such as 4 emissions) on a 25 kHz Channel
  - Multiple voice channels on a single emission (eg: TDMA)
- Data
  - For single BW mode or multi-BW mode device is 4800 bps per 6.25 kHz of BW or 9600 bps per 12.5 kHz channel
  - For 25 kHz single mode device
    - Single emission rated at 4x4800 bps
    - Four simultaneous individual emissions rated at 4800 bps
- Single 6.25 kHz BW channel devices are not required to meet the 4800 bps efficiency standard

April 2011 TCB Workshop 2

Regards,

Andy Leimer  
FCC/OEWT/EAB

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**From:** Francis Lima [mailto:f.lima@emcc.de]

**Sent:** Thursday, March 31, 2011 11:48 AM

**To:** Andrew Leimer

**Subject:** Single mode 12.5kHz Channel bandwidth in Part 90 narrow band

**Importance:** High

Dear Mr. Leimer,

I am Francis Lima, from the TCB in Germany and have been trying to get hold of you on phone in vain. I have an urgent question and hope that you can assist me.

Is certification of a two way radio with single mode 12.5kHz channel bandwidth operating in the narrow band (421-512MHz) of Part 90 allowed? If yes, is it okay if the 12.5kHz BW single mode device fulfils the requirement of one voice channel/12.5kHz bandwidth {90.203j(3)} or must it also include one voice channel/6.25kHz bandwidth {90.203j(5)}?

I look forward to your response.

Best regards / Mit freundlichen Grüßen / Cordialement

Francis Lima

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