

KELLEY DRYE & WARREN LLP

A LIMITED LIABILITY PARTNERSHIP

1200 19TH STREET, N.W.

SUITE 500

WASHINGTON, D.C. 20036

(202) 955-9600

EX PARTE OR LATE FILED

FACSIMILE

(202) 955-9792

ORIGINAL

WRITER'S DIRECT LINE

(202) 955-9786

WRITER'S E-MAIL

jgriffin@kelleydrye.com

NEW YORK, NY

LOS ANGELES, CA

CHICAGO, IL

STAMFORD, CT

PARSIPPANY, NJ

BRUSSELS, BELGIUM

HONG KONG

AFFILIATE OFFICES

BANGKOK, THAILAND

JAKARTA, INDONESIA

MANILA, THE PHILIPPINES

MUMBAI, INDIA

TOKYO, JAPAN

April 4, 2000

RECEIVED

APR - 4 2000

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
445-12<sup>th</sup> Street S.W.  
Washington, D.C. 20554

Re: Adaptive Broadband Corporation  
Ex Parte Presentation in WT Docket No. 99-168

Dear Ms. Salas:

On April 3, 2000, representatives of Adaptive Broadband Corporation ("Adaptive") met with Stan Wiggins, Chris Monteith, Jane Phillips, and Marty Liebman of WTB to discuss issues raised in the Commission's rulemaking proceeding concerning service rules for the 764-764 and 776-794 MHz bands. Todd Carothers, Vice President of Marketing, and Jeff Musser, Senior Systems Engineer, attended the meeting on behalf of Adaptive. Judith St. Ledger-Roty and the undersigned counsel attended the meeting as well. At the meeting, Mr. Carothers and Mr. Musser gave the attached presentation.

Two copies of this filing are enclosed as required by Section 1.1206 of the Commission's Rules. Please contact the undersigned if you have any questions regarding this filing.

Sincerely,

Joan M. Griffin

cc: Stan Wiggins  
Marty Liebman

Jane Phillips  
Chris Monteith

No. of Copies rec'd 071  
List ABCDE

**A D A P T I V E   B R O A D B A N D**

Jeffery Musser

Senior System Engineer

Todd D. Carothers

Vice President, Marketing

FCC 700 MHz AB-Access™ Review

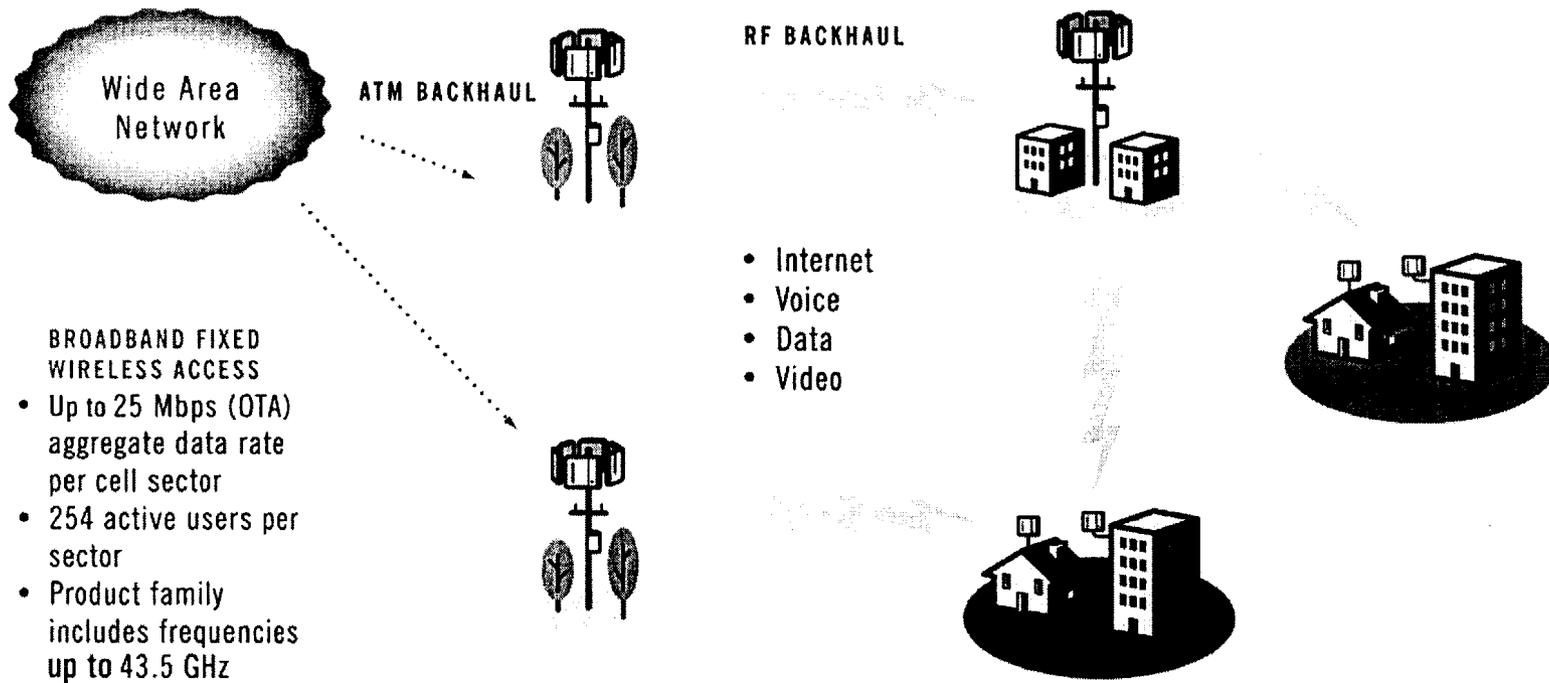
# Adaptive Broadband Overview

- Incorporated 1968 as California Microwave
- Changed name to Adaptive Broadband April 1999
- Leading supplier of terrestrial microwave radio
- Approximately 180 people (after divestiture process)
- World-wide market presence
- Headquartered in Sunnyvale CA
- Listed on NASDAQ (symbol: ADAP)
- Acquired Adaptive Broadband Limited August 1998
  - spin-off from Olivetti & Oracle Research Lab, Cambridge UK



ADAPTIVE BROADBAND™

# The AB-Access™ Solution



ADAPTIVE BROADBAND™

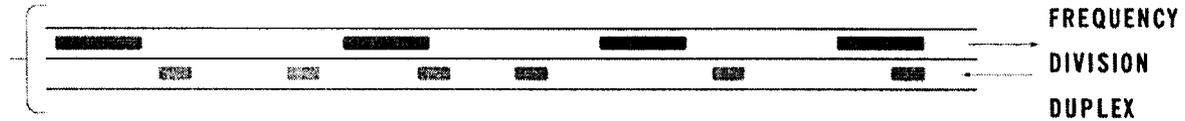
# Current Customers & Products

- Current Announced Customers (Others under NDA)
  - Carriers
    - US West
  - Internet Service Providers (ISPs)
    - Fuzion, BroadbandNOW!, DataCentric
  - International Deployments
- Application Offerings
  - Delay sensitive and non-delay sensitive traffic types over the same converged link (*i.e.*, video, voice, data, Internet)
- Product Deployments
  - U-NII today
  - MMDS & 3.5 GHz in prototype; deployments planned for 2000
  - Submitted RFP for 700 MHz

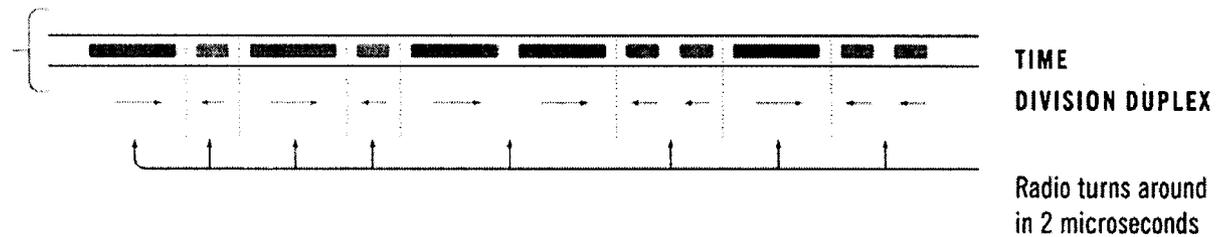


# Handling Asymmetric Data

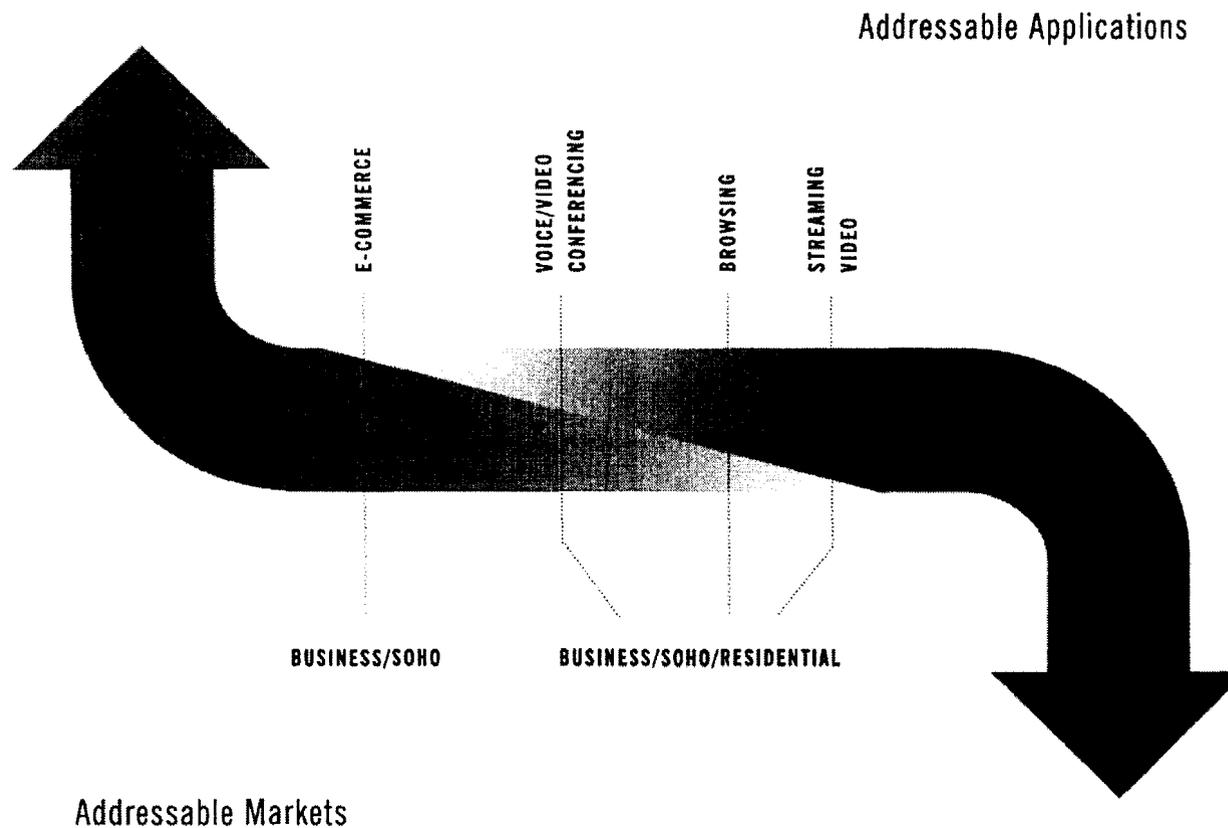
Fixed partition of spectrum into forward and return channels



Dynamic use of spectrum reflecting demand and priorities



# TDD Addresses Multiple Applications, Markets



# Why 700 MHz?

- Unlicensed National Infrastructure Information (U-NII) band great for
  - quick entry to market
  - high bandwidth
  - fixed CPE with Line-of-Sight
- 700 MHz advantages
  - in-building penetration
  - foliage penetration
  - small, portable customer equipment



# Current FCC Rules

- Power limits are band-specific
  - 1000W EIRP for 747-762 MHz band (base equipment)
  - 30W EIRP for 777-792 MHz band (fixed, control and mobile equipment)
  - 3W EIRP for 777-792 MHz band (portable equipment)
- Out of Band Emission (“OOBE”)
  - Licensees must attenuate the power below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB, or 80 decibels, whichever is less (“43 + 10 log P”), for any emission on all frequencies outside the licensee’s authorized spectrum.
  - More stringent limits for emissions on frequencies in certain services.

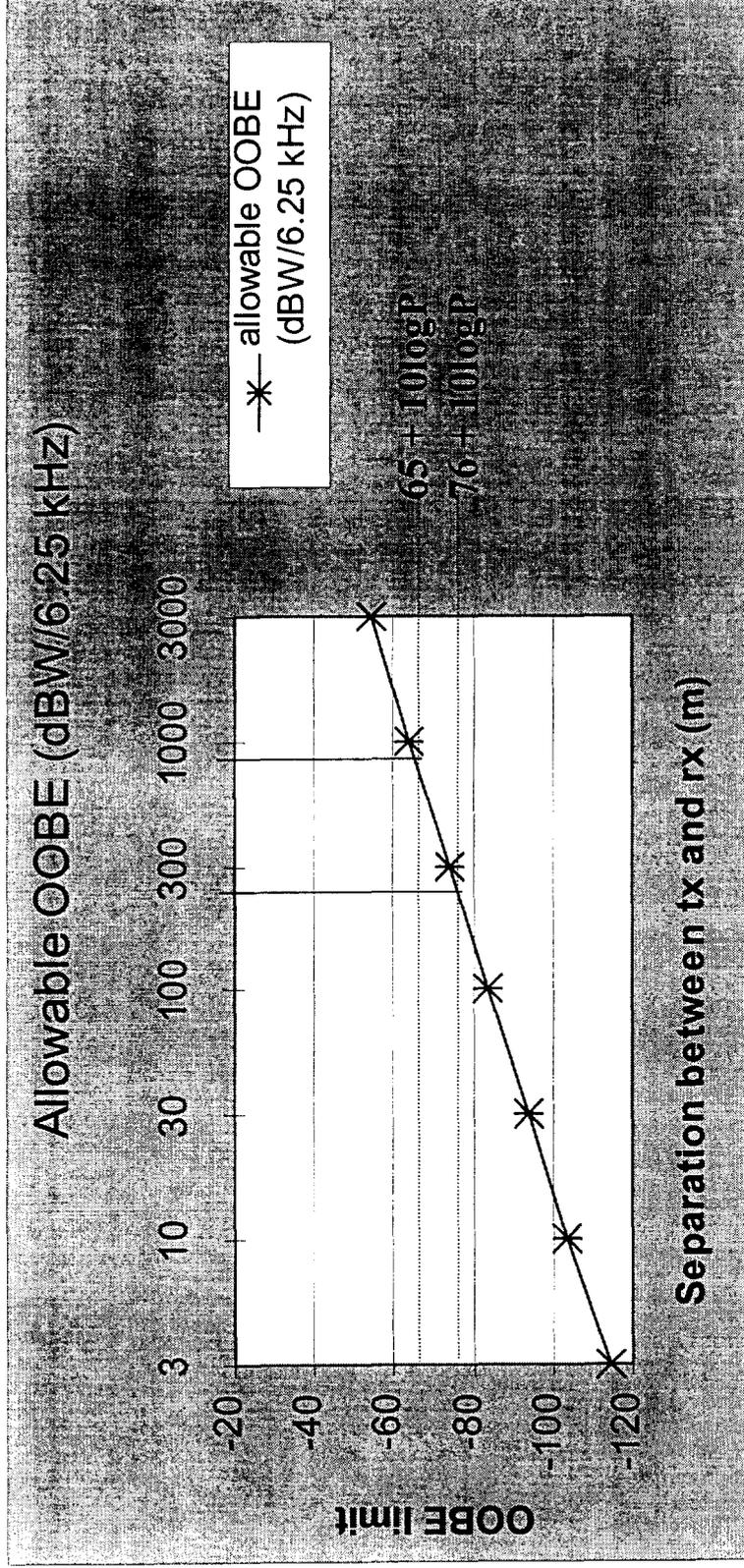


# What We Propose

- Tie power levels to equipment type, not band
  - 1000 W EIRP for base equipment
  - 30 W EIRP for fixed, control, and mobile equipment
  - 3 W EIRP for portable equipment
- Allow both FDD and TDD equipment in each band
- Out of Band Emissions reduced for in-band OOBE to allow co-existence of TDD and FDD systems
  - match what is already technically required for interference into other services
- Without these rules, TDD technology would be excluded from 700 MHz band



# Interference Zones



# Computation of Interference Zone

## Out Of Band Emissions

$$\text{OOBE} = \text{Sensitivity} - \text{margin} + \text{FSPL} + \text{Clutter loss} - \text{Rx Ant gain} - 30 \text{ dBm/dBW} - 10\log(2500/6.25)$$

$$\text{Sensitivity} = -102 \text{ dBm/2.5 MHz}$$

$$\text{Margin (below noise floor)} = 6 \text{ dB}$$

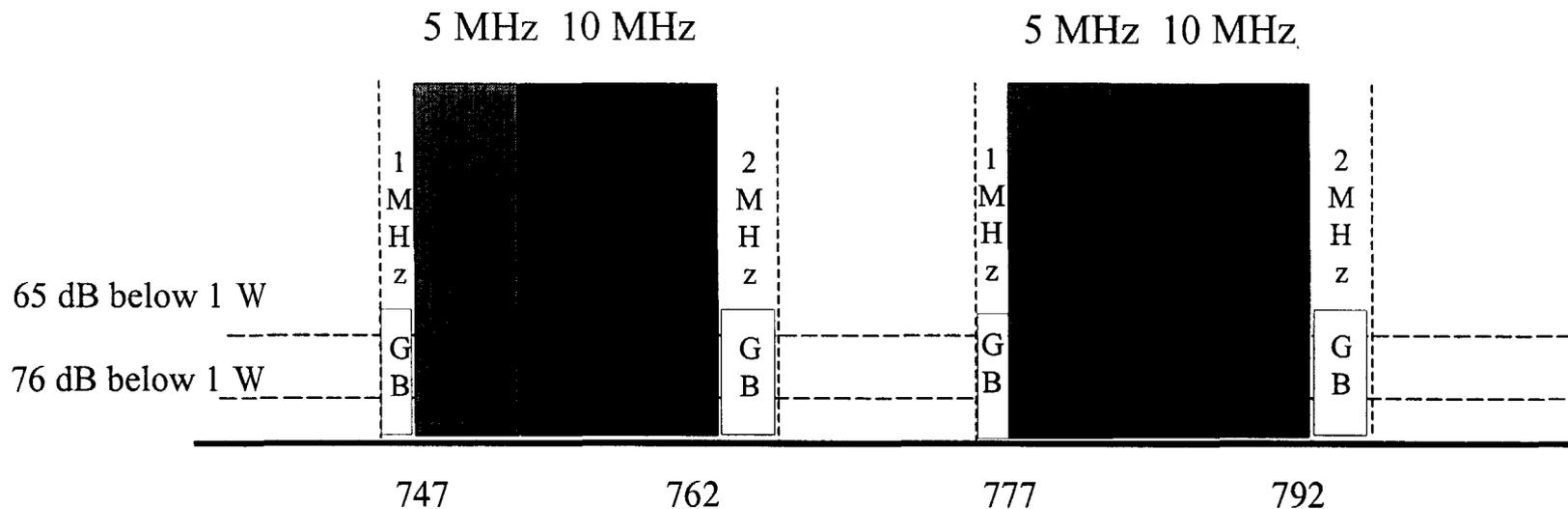
$$\text{Clutter loss} = 10 \text{ dB}$$

$$\text{Rx antenna gain} = 6 \text{ dBi}$$



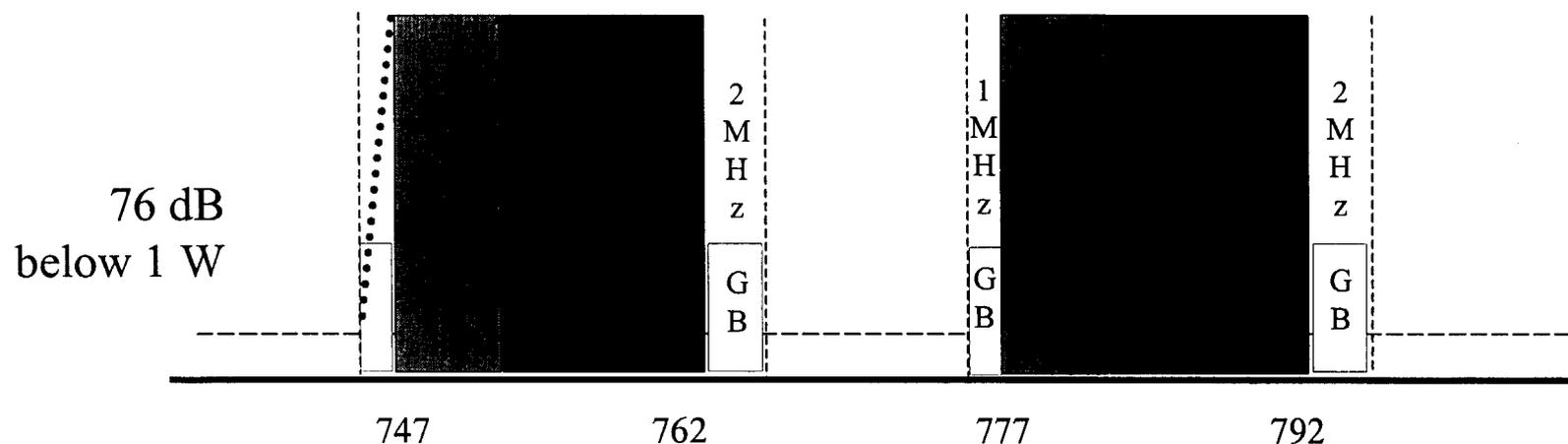
# FCC's Current Rules Already Accommodate Adaptive's Proposed OOB Limits for Some Services, e.g., Public Safety

Emissions outside licensed band into public safety band must be reduced to 76 dB below 1 W for base transmitters, and 65 dB below 1 W for mobile/portable equipment



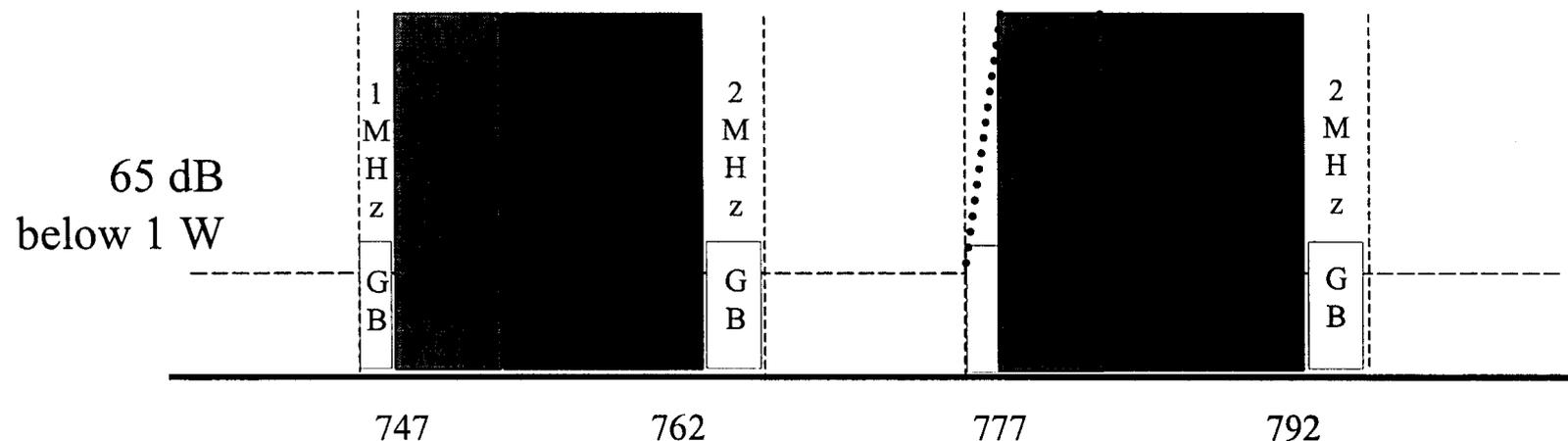
## Proposed Rules for Base Stations

- For base stations, emissions outside licensed band into adjacent bands must be reduced to 76 dB below 1 W within 1 MHz from each band edge
  - both top and bottom
- This is technically achievable, since it matches the existing OOBE rules for interference into the public safety bands by 700 MHz base station equipment



# Proposed Rules for Mobile/Portable Stations

- For mobile and portable stations, emissions outside licensed band into adjacent band must be reduced to 65 dB below 1 W when 1 MHz from each band edge
  - both top and bottom
- This is technically achievable, since it matches the existing OOB E rules for interference into the public safety bands by 700 MHz mobile and portable equipment



# Conclusion

- TDD is an innovative technology that can be used in the 700 MHz band to address the growing needs of consumers for broadband services while making efficient use of the available spectrum.
- The FCC should adopt the rule changes proposed to enable use of TDD technology in the 700 MHz band.

