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DEC 13 1995

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December 13, 1995

VIA HAND DELIVERY

Mr. William F. Caton
 Acting Secretary
 Federal Communications Commission
 1919 M Street, N.W. - Room 222
 Washington, D.C. 20554

- Re: (1) ET Docket No. 94-124
 (2) RM-8648
 (3) RM-8653

Dear Mr. Caton:

The attached "Statement of Ex Parte Contact" is submitted for the record pertaining to the above three references. This filing is made on behalf of and for the convenience of the Fixed Point-to-Point Section of the Telecommunications Industry Association (TIA), Mr. George Kizer, Chairman.

Respectfully submitted,

FLETCHER, HEALD & HILDRETH, P.L.C.



Leonard Robert Raish

LRR:cej

Enclosure

- cc: Mr. John Williams - FCC Office of Plans & Policies
 Mr. George Kizer - Alcatel Network Systems
 Mr. Denis Guill - Alcatel Network Systems
 Mr. Denis Couillard - Harris Corp. - Farinon Division
 Mr. Jimmy Hannan - Digital Microwave Corp.

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STATEMENT OF EX PARTE CONTACT

On December 1, 1995, the following participated in a briefing and discussion with Mr. John Williams of the Office and Plans Policies:

- (1) Mr. George Kizer - Alcatel Network Systems
- (2) Mr. Denis Guill - Alcatel Network Systems
- (3) Mr. Denis Couillard - Harris Corporation - Farinon Division
- (4) Mr. Jimmy Hannan - Digital Microwave Corporation
- (5) Mr. L. R. Raish - Fletcher, Healed & Hildreth

The above listed persons were speaking on behalf of the Fixed Point-to-Point Section of the Telecommunications Industry Association (TIA). Mr. George Kizer is Chairman of the Section.

The briefing dealt with two subject areas, viz,

- (1) Use of Radio Frequencies Above 40 GHz
- (2) High Performance Radio Local Area Network (HIPERPLAN)

With regard to (1) the presentation was made by Mr. George Kizer using the viewgraphs in Attachment A hereto. As regards (2) above, the presentation was done by Mr. Denis Couillard using the viewgraphs in Attachment B hereto. The ensuing discussion was focussed on the two Attachments, essentially on a page-by-page basis. The two presentations lasted approximately one hour.

Attachment A: "Use of Radio Frequencies above 40 GHz"

Attachment B: "HIPERPLAN"



Fixed Point-to-Point Microwave Section

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Use of Radio Frequencies Above 40 GHz

Presentation to the FCC OET

Washington, D. C.

December 1, 1995

Electromagnetic Radiation Frequencies

Frequency Range	Wavelength Range	Designation
3 to 30 Hertz	100 to 10 Megameters*	Subsonic
30 to 300 Hertz	10 to 1 Megameters	ELF-Extremely Low Frequency
300 to 3000 Hertz	1000 to 100 Kilometers	VF-Voice Frequency
3 to 30 KiloHertz	100 to 10 Kilometers	VLF-Very Low Frequency
30 to 300 KiloHertz	10 to 1 Kilometer	LF-Low Frequency
300 to 3000 KiloHertz	1000 to 100 Meters	MF-Medium Frequency
3 to 30 MegaHertz	100 to 10 Meters	HF-High Frequency
30 to 300 MegaHertz	10 to 1 Meter	VHF-Very High Frequency
300 to 3000 MegaHertz	100 to 10 Centimeters	UHF-Ultra High Frequency
3 to 30 GigaHertz	10 to 1 Centimeter	SHF-Super High Frequency
30 to 300 GigaHertz	10 to 1 Millimeter	EHF-Extremely High Frequency
300 to 3000 GigaHertz	1000 to 100 Microns•	Sublight and Infrared
3 to 30 TeraHertz	100 to 10 Microns	Light (Infrared)
30 to 300 TeraHertz	10 to 1 Micron	Light (Infrared)
300 to 3000 TeraHertz	10000 to 1000 Angstroms	Light (Infrared to Ultraviolet)
3 x 10 ¹⁶ to 3 x 10 ¹⁸ Hz	100 to 1 Angstrom	X-Rays
3 x 10 ¹⁸ to 3 x 10 ²⁰ Hz	1 to 0.01 Angstrom	Gamma Rays

* Earth's Average Diameter = 12.74 Megameters

• Average Hair's Diameter = 100 Microns

- Atmospheric effects more pronounced
- Quasi-optical properties
- Diffraction, scattering and absorption more pronounced

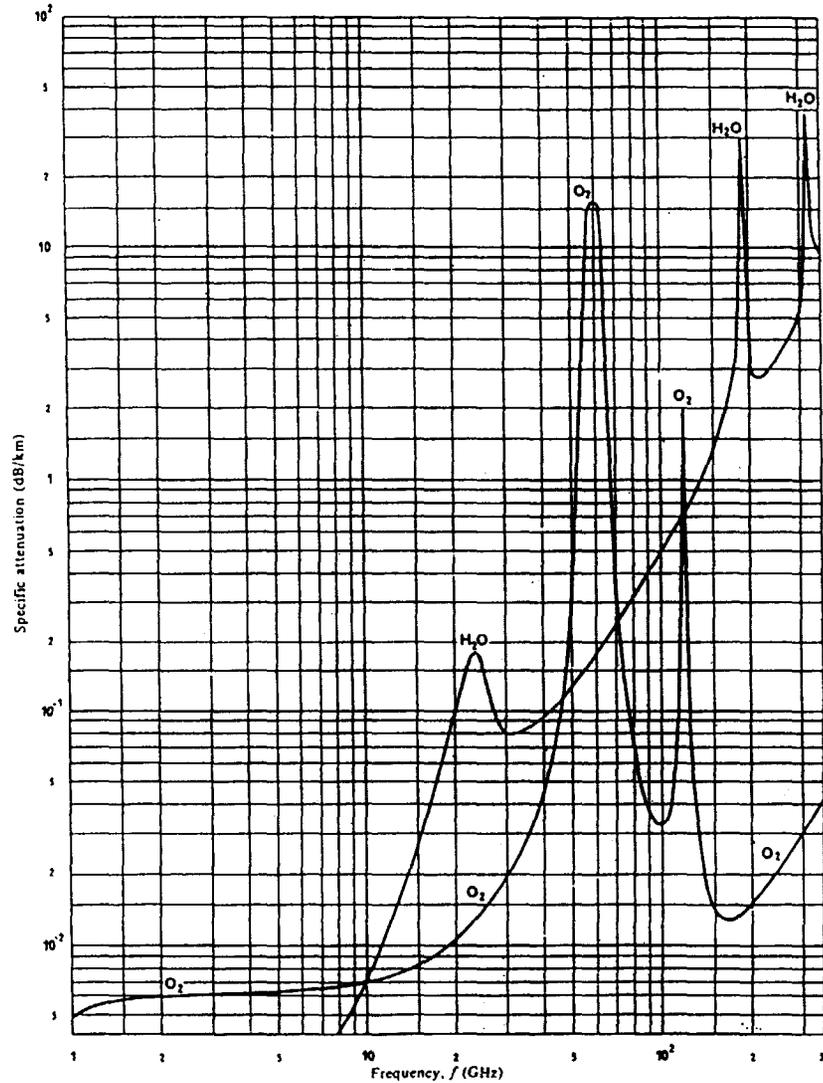


FIGURE 3 - Specific attenuation due to atmospheric gases

- High attenuation regions at roughly 60, 118 and 183 GHz
 - Typically used for very short or indoor systems
- Low attenuation regions at roughly 35, 94, 140 and 220 GHz
 - Typically used for outdoor applications

- Higher transmission throughput (due to wide bandwidth)
- Reduced component size
- Reduced antenna size with more practical options
 - reflectors, horns, lenses, planar arrays, dielectric rods
- High gain
- Enhanced immunity to interference
 - Due to higher path attenuation and narrow beamwidths

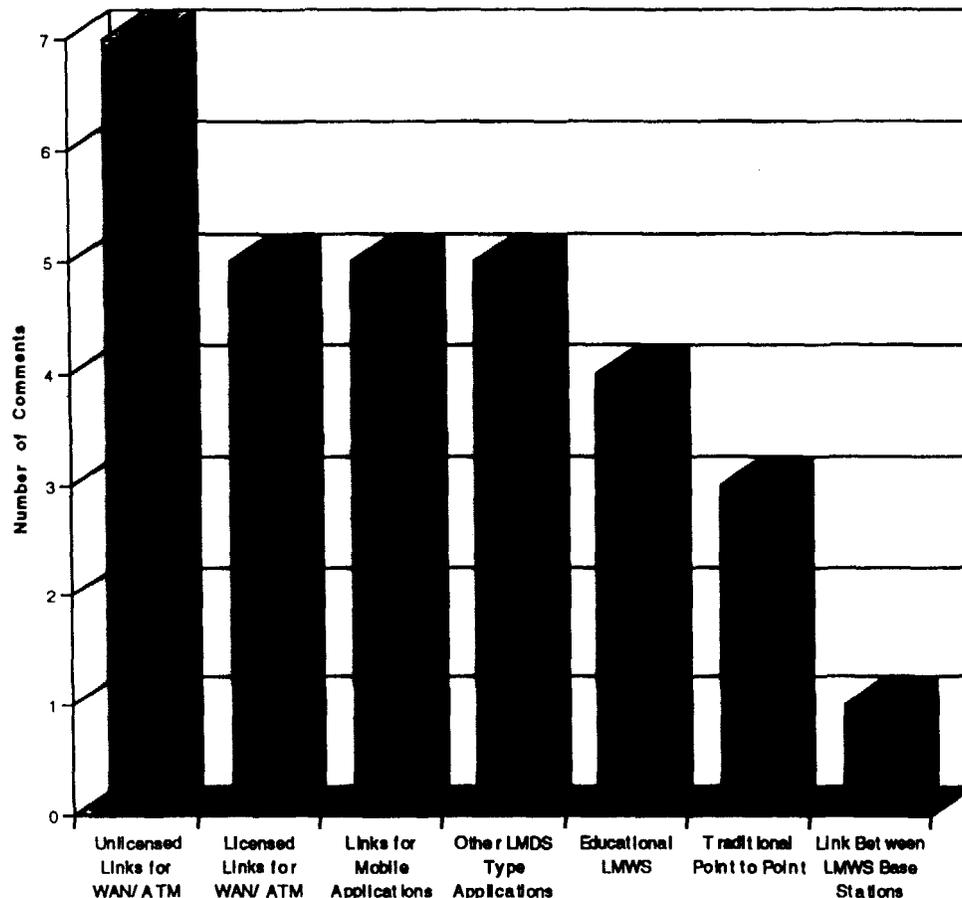
- Limited range
 - low transmit power
 - high noise figure
 - highly variable path attenuation
 - back scatter from rain and moving objects
- Difficulty in acquiring and maintaining path
(due to narrow beam widths)
- Cost and availability of components
- Cost of manufacturing (due to small size)

- Communication Systems
- Radar Systems
- Traffic control and monitoring
- Intrusion alarm and monitoring
- Optical like viewers (viewing through smog and fog)
- Radio Spectrography
- Instrumentation/Medical

- Traditional Private and Common Carrier
- Mobile voice and data networks
- WAN/LAN interconnection
- Super wideband (ATM/SONET) access
- Super wide bandwidth (uni- and bidirectional, point to point or multipoint) broadband distribution (T1/T3 ,access, multimedia, education, TV)
- Support for future telecom systems
 - Intelligent Transport System (ITS)
 - National Information Infrastructure(NII)

Fixed Point-to-Point Microwave Section

Proposed Applications



Above based upon comments to Use of Radio Frequencies Above 40 GHz (ET Docket 94-124, January 1995)



Support for global harmonization of radio frequency allocations:

- European Radiocommunications Committee (ERC) of European Conference of Postal and Telecommunications Administrations (CEPT)
- Fixed Point to Point Section of Telecommunications Industry Association (TIA)
- American Telephone and Telegraph (ATT)
- Teledesic Corporation

Above based upon comments to Use of Radio Frequencies Above 40 GHz
(ET Docket 94-124, January 1995)



Fixed Point-to-Point Microwave Section

Fixed Service Microwave should get high frequency allocations

FOR:

- Hughes Aircraft Company Communications Product Unit (HCP)
- Fixed Point to Point Section of Telecommunications Industry Association (TIA)

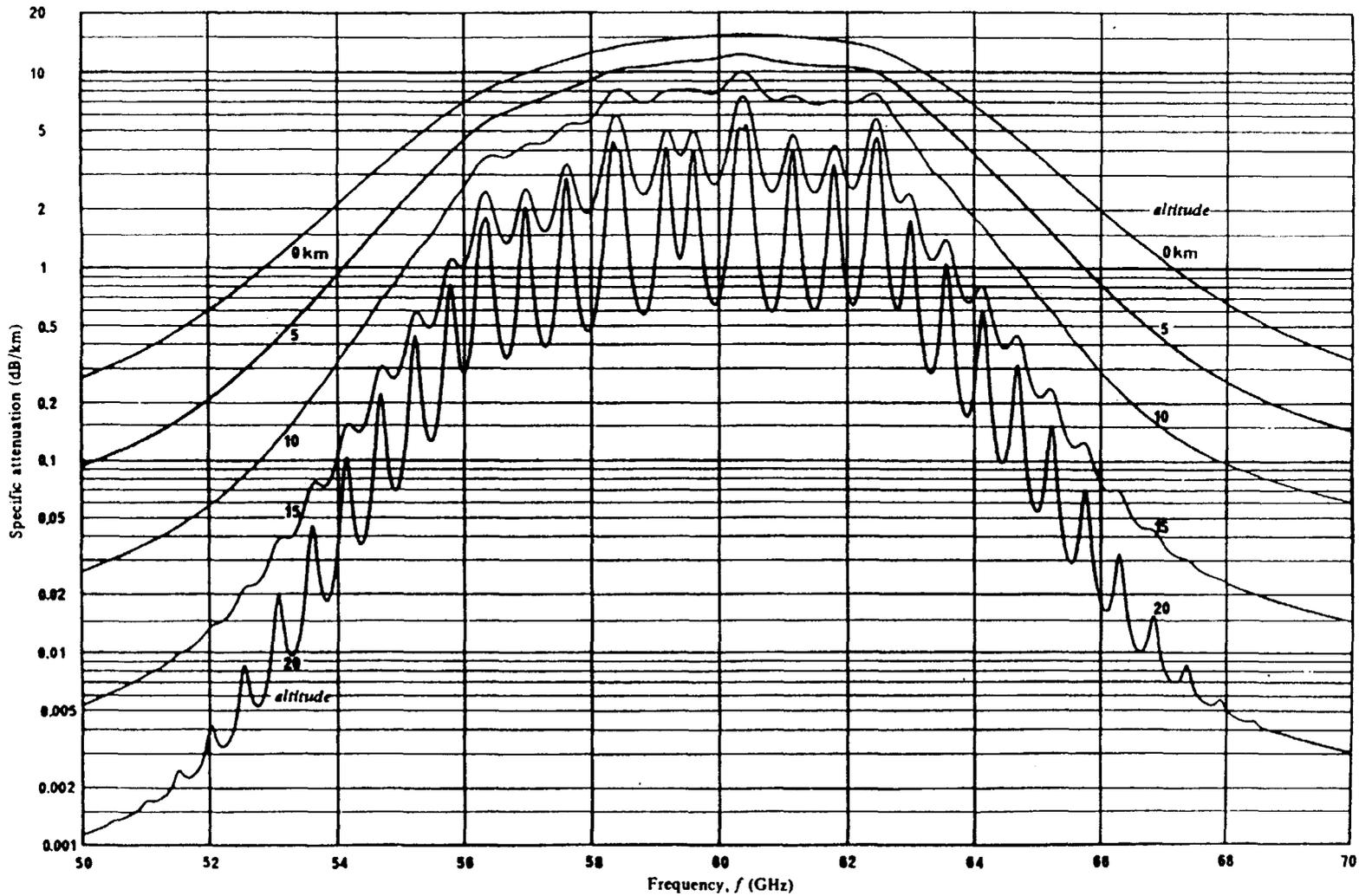
AGAINST:

National Aeronautics and Space Administration (NASA)

- TIA requested 48.5 to 51.4 GHz and 55.2 to 58.2 GHz
- NASA objected to 55.2 to 58.2 allocation
 - Absorption band needed for satellite earth studies
 - Europeans really not planning to use band

There's Absorption Band Room to Share!

Fixed Point-to-Point Microwave Section



Fixed Point-to-Point Microwave Section

ETSI Drafting Standards

ETSI



EUROPEAN
TELECOMMUNICATION
STANDARD

DRAFT
prETS 300 407
March 1994

Source: ETSI TC-TM

Reference: DE/TM-04006

UDC: 621.395

Key words: Radio, digital, analogue, video

Transmission and Multiplexing (TM);
Parameters for radio-relay systems for the transmission of
digital signals and analogue video signals
operating around 55 GHz

4.1.1 Frequency band

The frequency band is 54,25 GHz to 57,2 GHz.

ETSI

European Telecommunications Standards Institute
ETSI Secretariat

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ETSI



EUROPEAN
TELECOMMUNICATION
STANDARD

DRAFT
prETS 300 408
March 1994

Source: ETSI TC-TM

Reference: DE/TM-04007

UDC: 621.395

Key words: Radio, digital, analogue, video

Transmission and Multiplexing (TM);
Parameters for radio-relay systems for the transmission of
digital signals and analogue video signals
operating at around 58 GHz, which do not require
frequency planning

4.1.1 Frequency band

The frequency band is 57,2 GHz to 58,2 GHz.

ETSI

European Telecommunications Standards Institute
ETSI Secretariat

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Fixed Point-to-Point Microwave Section

<u>50 GHz</u>	<i>Zone of application</i>	<i>Applicable standard</i>
49200/50200 MHz	UK Mercury	MCL T0421
(The band is currently being redefined by the CEPT. The provisional band is:		
48500/51400 MHz	CEPT)
<u>55 GHz</u>	<i>Zone of application</i>	<i>Applicable standard</i>
54250/57200 MHz	CEPT	prETS 300-407
54250/57200 MHz	UK	MPT 1416
(The band is currently being redefined by the CEPT. The merging of 55 and 58 GHz bands is envisaged into 55200/58200 MHz)		
<u>58 GHz</u>	<i>Zone of application</i>	<i>Applicable standard</i>
57200/58200 MHz	CEPT	prETS 300-408
57200/58200 MHz	UK	MPT 1415
(The band is currently being redefined by the CEPT. The merging of 55 and 58 GHz bands is envisaged into 55200/58200 MHz)		

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- Frequencies above 40 GHz have many applications
- Internationally harmonized Fixed Service applications should be among them

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HIPERLAN

presentation to the FCC OET

by
the fixed point-to-point communications
section of TIA

Washington, Dec 1st, 1995

TELECOMMUNICATIONS
TIA
INDUSTRY ASSOCIATION

HI*GH ***PERFORMANCE ***R***ADIO ***L***OCAL ***A***REA ***N***ETWORK
(HIPERLAN)**

SERVICES AND FACILITIES

Source = ETSI ETR 069, February 1993

TELECOMMUNICATIONS
TIA
INDUSTRY ASSOCIATION

What is HIPERLAN?

- ◆ High speed short distance radio links between computer systems
- ◆ Untethered access to computer systems, whether located nearby or remotely
- ◆ Same performance as wired LAN

HIPERLAN APPLICATIONS:

Voice, Video & Data Services

- ◆ Office automation
- ◆ Financial services
- ◆ Medical & hospital systems
- ◆ Education and training
- ◆ Industrial automation
- ◆ Ad-Hoc networking

HIPERLAN CHARACTERISTICS:

- ◆ No explicit frequency planning or coordination
- ◆ Capable of handling up to 22 miles/hr mobility
- ◆ PCMCIA type III compatibility (low power allows portability)
- ◆ Common air interface
- ◆ Data services up to 20 Mb/s
- ◆ Range is 0.5 mile at 1 Mb/s
165 feet at 20 Mb/s