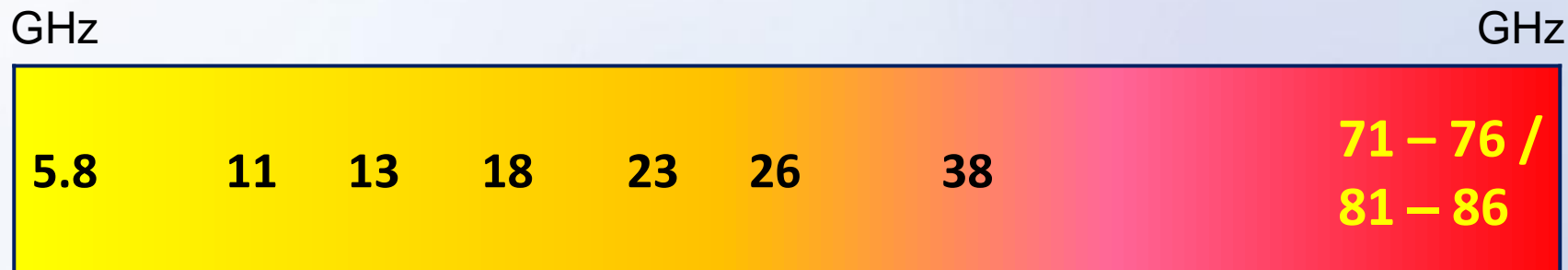


# **Radio Spectrum and Technical Standards Advisory Committee**

## **SSAC Paper 3/2014 for Discussion: Proposed Use of E-band (71-76 GHz/81-86 GHz) for Digital Fixed Links**

Office of the Communications Authority  
January 2014

# Frequency Bands for Microwave Fixed Links in Hong Kong



Frequency bands currently being used for microwave fixed links by operators

- Increasing demand for broadband data
  - Increasing deployments of small cells
- ➔ Increasing bandwidth demand for mobile network backhaul

E-band (71-76 GHz / 81-86 GHz) may be released in HK for microwave fixed links

# Use of E-Band in Other Countries



## European Union

- Allocated E-band for fixed service
- Channel arrangements specified in in ECC Recommendation (05)07
- Many EU countries have opened up the E-band for fixed links

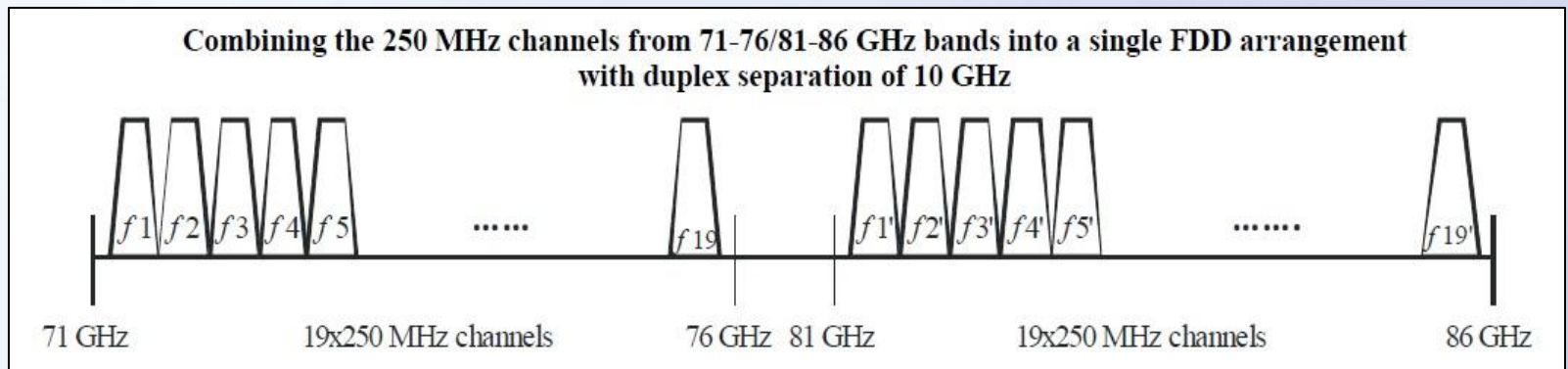


## United States of America

- Allocated E-band for fixed service
- Technical requirements specified in FCC Code of Federal Regulations Title 47 Part 101

# ITU-R Rec F.2006 Channel Arrangement

- Frequency bands: 71 – 76 GHz / 81 – 86 GHz
- Channel Plan:



- Channel bandwidth:  
250 MHz  $\times$   $n$ ,  $n = 1$  to 18 (max. 4500 MHz)

# Applications and Characteristics of E-Band

- **Applications:** high bit rate relay or backhaul of wireless communications networks, e.g. small cell backhaul
- **Bandwidth:** large bandwidth available
- **Range:** short (typically a few hundred metres) due to relatively high rain attenuation in Hong Kong
- **Re-user factor:** high
- **Line of Sight:** required
- **Antenna:** small size (typically 0.3m / 0.6m)
- **Interference:** low potential due to short range and more focused antenna beam

# Advice Sought

- Demand of operators on E-band spectrum
- Bandwidth requirement
- Coordination arrangement for interference mitigation
- Any other comments?

# Thank You