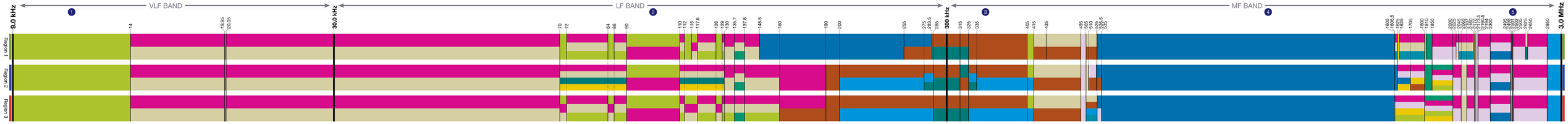
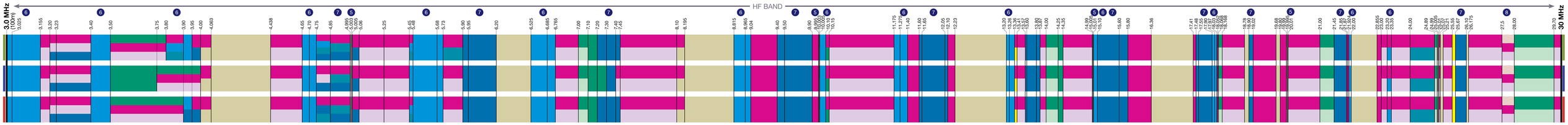
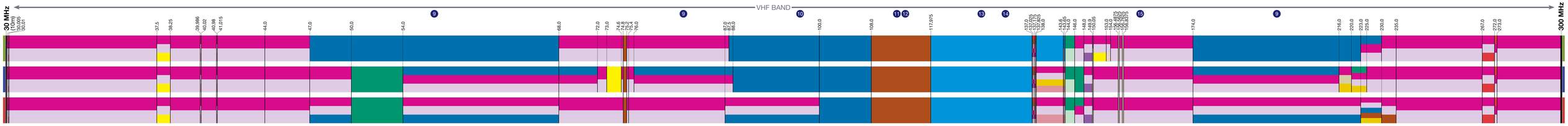
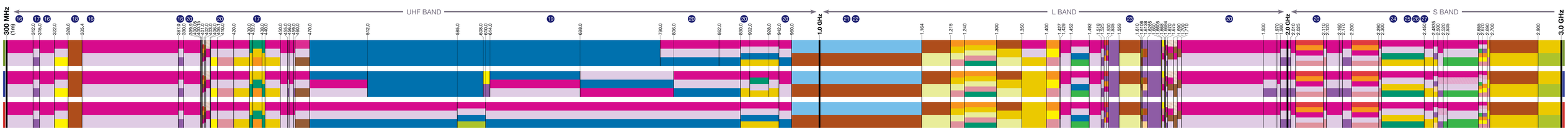
Worldwide Spectrum Allocations Courtesy of Tektronix

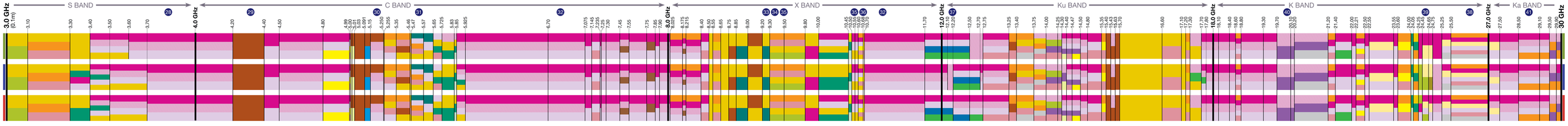
9 kHz











- Aeronautical Mobile
- Aeronautical Mobile Satellite
- Aeronautical Radionavigation
- Amateur
- Amateur Satellite
- Broadcasting
- Broadcasting Satellite
- Earth Exploration Satellite
- Fixed
- Fixed Satellite
- Inter-Satellite
- Land Mobile
- Land Mobile Satellite
- Maritime Mobile
- Maritime Mobile Satellite
- Maritime Radionavigation
- Meteorological Aids
- Meteorological Satellite
- Mobile
- Mobile Satellite
- Radio Astronomy
- Radiodetermination Satellite
- Radiolocation
- Radiolocation Satellite
- Radionavigation
- Radionavigation Satellite
- Space Operation
- Space Research
- Standard Frequency & Time Signal
- Standard Frequency & Time Signal Satellite

SELECTED POINTS OF INTEREST:

1. Underground Cable Locating Equipment
2. LORAN C Navigation
3. ADF Non-Directional Beacons (NDB)
4. AM Radio Broadcast
5. WWV Time Standard Signals
6. Major World Air Route Areas (MWARA)
7. International Shortwave Broadcasters
8. Citizen Band Radios (CB)
9. VHF Television (TV)
10. FM Radio Broadcast
11. VHF Omni-directional Range (VOR)
12. Instrument Landing System (ILS – LOC)
13. Civil Aircraft Communications Radio
14. Emergency Locator Transponders (ELT)
15. International Maritime Channels
16. Garage Door Openers
17. Automobile Remote Keyless Entry (RKE)
18. Aircraft Landing Glide Slope (GS)
19. UHF Television (TV)
20. Cellular Phone Bands
21. Distance Measurement Equipment (DME)
22. Aircraft ATC Radar Transponders
23. Global Positioning System (GPS, L1)
24. Broadcast Satellite Radio Services
25. Wireless Local Area Networks 802.11b & g
26. Bluetooth Personal Area Networks (PAN)
27. Microwave Ovens
28. Satellite Television Broadcast
29. Aircraft Radar Altimeters
30. Wireless Local Area Networks (WLAN) 802.11a
31. Weather Radar – Large Aircraft
32. Point-to-Point Telecom Infrastructure
33. Weather Radar – Small Aircraft
34. Maritime Radar
35. Police Radar Speed Measurement
36. Radar Motion Detectors (Doors & Alarms)
37. Direct Broadcast Satellite
38. Inter-Satellite Frequency & Time Standard Reference
39. Inter-Satellite Radiolocation
40. Fixed Satellite Service: Space-to-Earth All Regions
41. Fixed Satellite Service: Earth-to-Space All Regions

"Selected Points of Interest" are based on popular allocation applications, and may not be exhaustive or applicable for all nations.
This chart represents a single point in time of the International Telecommunications Union (ITU) worldwide spectral allocations summarized in the US FCC Code of Federal Regulations. As such, it does not completely reflect all aspects such as footnotes and recent changes. Users should always consult their national regulatory body for current allocations.
This chart does not differentiate between Co-PRIMARY and Secondary allocations. Allocations are listed from top to bottom in the order they appear in table 2.106. Horizontal logarithmic scale has been exaggerated on some very narrow bands for readability.

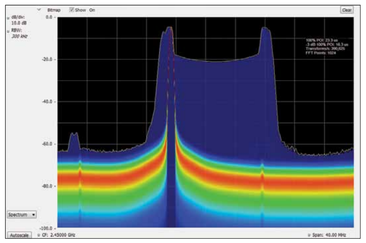
PRIMARY
Co-PRIMARY or Secondary

Source: US FCC Online Table of Frequency Allocations, Code of Federal Regulations – Title 47, Section 2.106 Revised on May 12, 2008

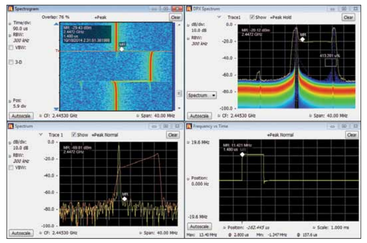
30 GHz

Tektronix Real-Time Spectrum Analyzers

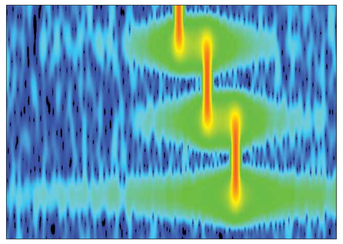
Discover much more



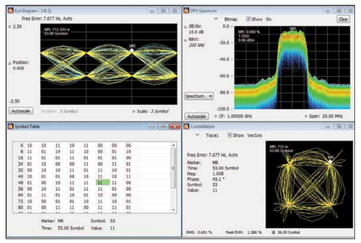
Trigger on frequency changes



Capture seamlessly into memory



Analyze multiple domains



Common Worldwide Wireless Technologies

Cellular Communication Networks

TECHNOLOGY	CHANNEL SPACING	COMMON FREQUENCIES	REGIONS
LTE-FDD	1.4 MHz 3 MHz 5 MHz 10 MHz 15 MHz 20 MHz	LSMH A/B/C/D/E, USMH C/D: 700 MHz 800 MHz (EUDD / SMR) 850 MHz (CLR/ECLR) 900 MHz (E-GSM) 1500 MHz (US FDC) 1800 MHz (L-Band) 1700 MHz (AWS) 1800 MHz (DCS) 1900 MHz (PCS / EPCS) 2000 MHz (S-Band) 2100 MHz (IMT) 2500 MHz (IMT-E)	Regions 2 & 3 Worldwide Regions 2 & 3 Regions 1 & 3 Japan USA Region 2 and Japan Worldwide except N. Amer. Region 2 USA Regions 1 & 3 Worldwide
LTE-TDD	1.4 MHz 3 MHz 5 MHz 10 MHz 15 MHz 20 MHz	700 MHz 1900 MHz (PCS) 1990 MHz 2100 MHz (IMT) 2300 MHz 2500 MHz (BRS/EBS) 2600 MHz (IMT-E) 3500 MHz 3700 MHz	Asia Region 2 China Europe / Asia / Oceania Worldwide except N. Amer. N. America / Asia Worldwide except Oceania and N. America Worldwide except Africa and Oceania Europe
GSM/GPRS/EDGE *Global System for Mobile Communications/General Packet Radio Service/ Enhanced Data Rates for GSM Evolution*	200 kHz	GSM 900: 890-915 MHz (UL); 935-960 MHz (DL) DCS 1800: 1710-1785 MHz (UL); 1805-1880 MHz (DL) GSM 850: 824-849 MHz (UL); 869-894 MHz (DL) PCS 1900: 1850-1910 MHz (UL); 1930-1990 MHz (DL)	Regions 1 & 3 except Japan and Korea Regions 1 & 3 except Japan, Korea and China Region 2 – Americas Region 2 – Americas
W-CDMA/HSDPA/ HSUPA *Wideband Code Division Multiple Access/High-Speed Downlink Packet Access/ High-Speed Uplink Packet Access*	5 MHz	Band I: 1920-1980 MHz (UL); 2110-2170 MHz (DL) Band V: 824-849 MHz (UL); 869-894 MHz (DL) Band II: 1850-1910 MHz (UL); 1930-1990 MHz (DL)	Regions 1 & 3 Region 2 – Americas Region 2 – Americas
CDMA/One/ CDMA2000/1xEV-DO *CDMA/One System Code Division Multiple Access/CDMA2000® (1xRTT – Radio Transmission Technology)/1xEV-DO (1x Evolution-Data Only High Rate Packet Data)*	1.25 MHz	800/850 MHz band: 824-849 MHz (MS); 869-894 MHz (BS) Japan Cellular band: 887-925 MHz (MS); 832-870 MHz (BS) PCS 1900: 1850-1910 MHz (MS); 1930-1990 MHz (BS) IMT 2000 band: 1920-1980 MHz (MS); 2110-2170 MHz (BS)	Region 2 & 3 – Primarily Americas, Korea, China Region 3 – Japan Region 2 – Americas Region 3 – Japan and China

Personal Area Networks (PAN)

TECHNOLOGY	CHANNEL SPACING	COMMON FREQUENCIES	REGIONS
IEEE 802.15.4a (ZigBee)	2 MHz (815 MHz) 5 MHz (2.4 GHz) 500 MHz-1355 MHz	250-750 MHz 784, 868, 915 MHz 2.40 GHz (ISM band) 3.10-4.80 GHz 6.00-10.60 GHz	Worldwide
IEEE 802.11ad (WiGig)	2 GHz	60 GHz (ISM band)	Worldwide
ANT	1 MHz	2.4 GHz (ISM band)	Worldwide
IEEE 802.15.1 (Bluetooth)	1 MHz (hopping)	2.4 GHz (ISM band)	Worldwide

Local Area Networks (LAN)

TECHNOLOGY	CHANNEL SPACING	COMMON FREQUENCIES	REGIONS
IEEE 802.11 a/b/g/n *Wireless Local Area Network*	a/b/g: 10 MHz (overlapped) 20, 25 or 30 MHz (non overlapped) n: 20 or 40 MHz p: 5, 10, or 20 MHz ac: 20, 40, 80, or 160 MHz	a/b/g: 2400-2483.50 MHz a: 4900-5825 MHz (varies) n: 2400-2483.50 MHz; 5150-5825 MHz (varies) p: 5850-5925 MHz (varies) ac: 2400-2483.5 MHz (USA); 2400-2500 MHz (Japan); 5150-5845 (varies)	Worldwide

Tektronix Real-Time Spectrum Analyzers: Solving your RF challenges from the bench to the field

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* **If the European phone number above is not accessible, please call +41 52 675 3777**

Contact List Updated June 2013

For Further Information
Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com**

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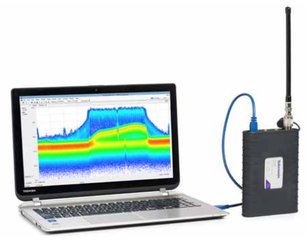

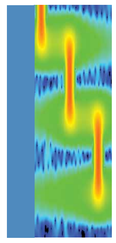

Worldwide Spectrum Allocations

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