

UNITED STATES FREQUENCY ALLOCATIONS

THE RADIO SPECTRUM

RADIO SERVICES COLOR LEGEND

AERONAUTICAL MOBILE	INTER-SATELLITE	RADIO ASTRONOMY
AERONAUTICAL MOBILE-SATELLITE	LAND MOBILE	RADIO TERRESTRIAL SATELLITE
AERONAUTICAL RADIONAVIGATION	LAND MOBILE-SATELLITE	RADIOLOCATION
AMATEUR	MARITIME MOBILE	RADIOLOCATION-SATELLITE
AMATEUR SATELLITE	MARITIME MOBILE-SATELLITE	RADIONAVIGATION
BROADCASTING	MARITIME RADIONAVIGATION	RADIONAVIGATION-SATELLITE
BROADCASTING-SATELLITE	METEOROLOGICAL	SPACE OPERATION
EARTH EXPLORATION SATELLITE	METEOROLOGICAL-SATELLITE	SPACE RESEARCH
FIXED	MOBILE	STANDARD FREQUENCY AND TIME SIGNAL
FIXED-SATELLITE	MOBILE-SATELLITE	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE

ACTIVITY CODE

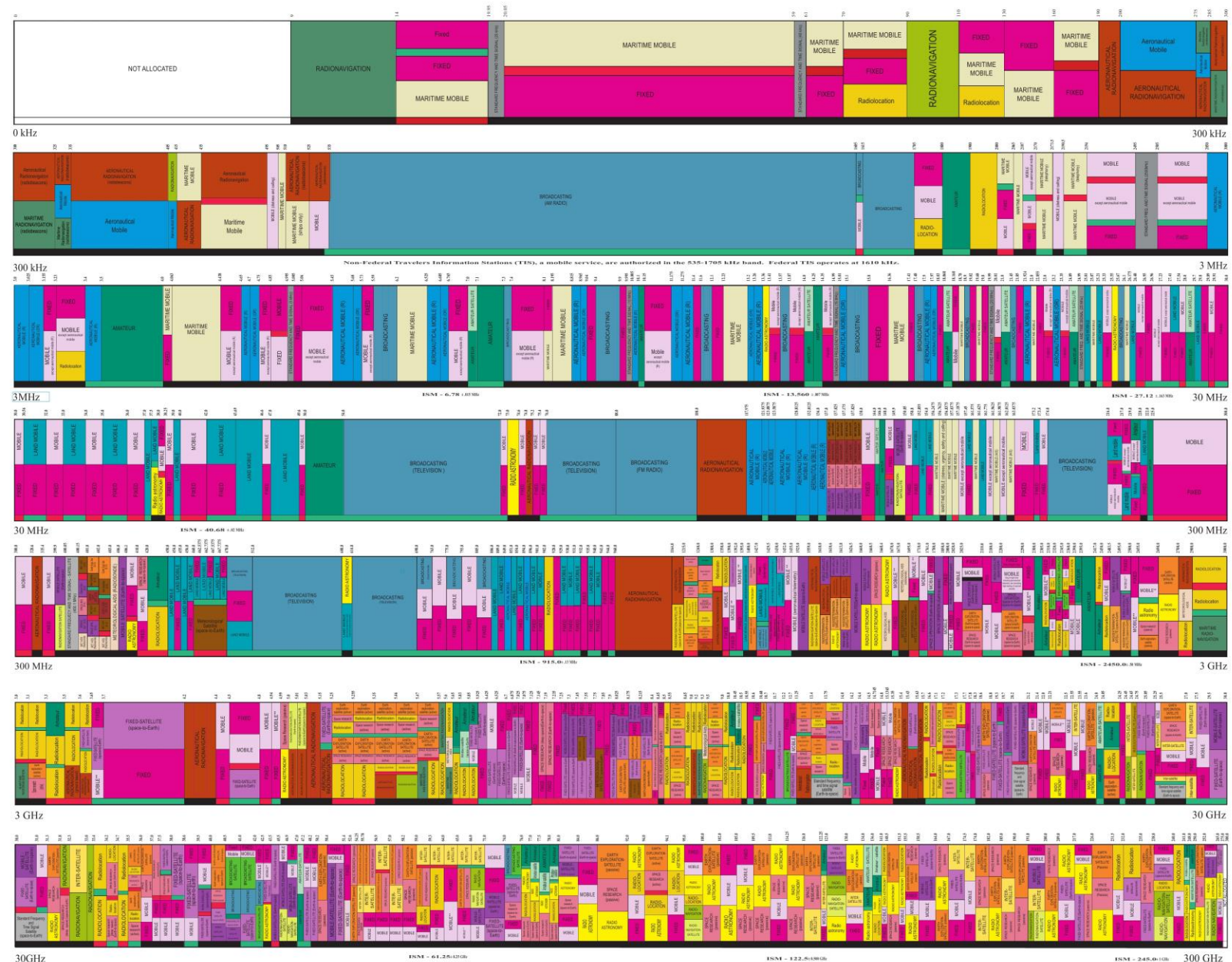
FEDERAL EXCLUSIVE	FEDERAL/NON-FEDERAL SHARED
NON-FEDERAL EXCLUSIVE	

ALLOCATION USAGE DESIGNATION

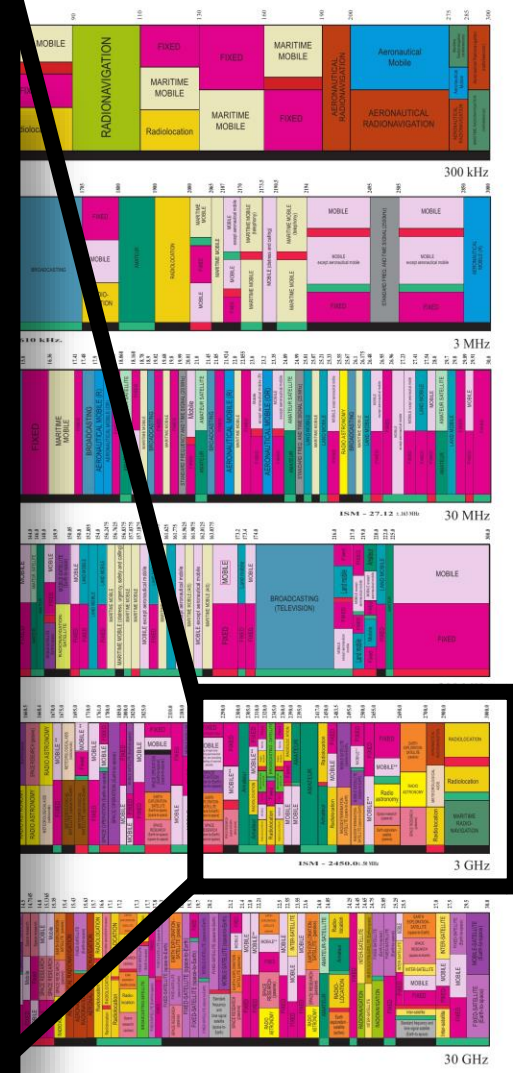
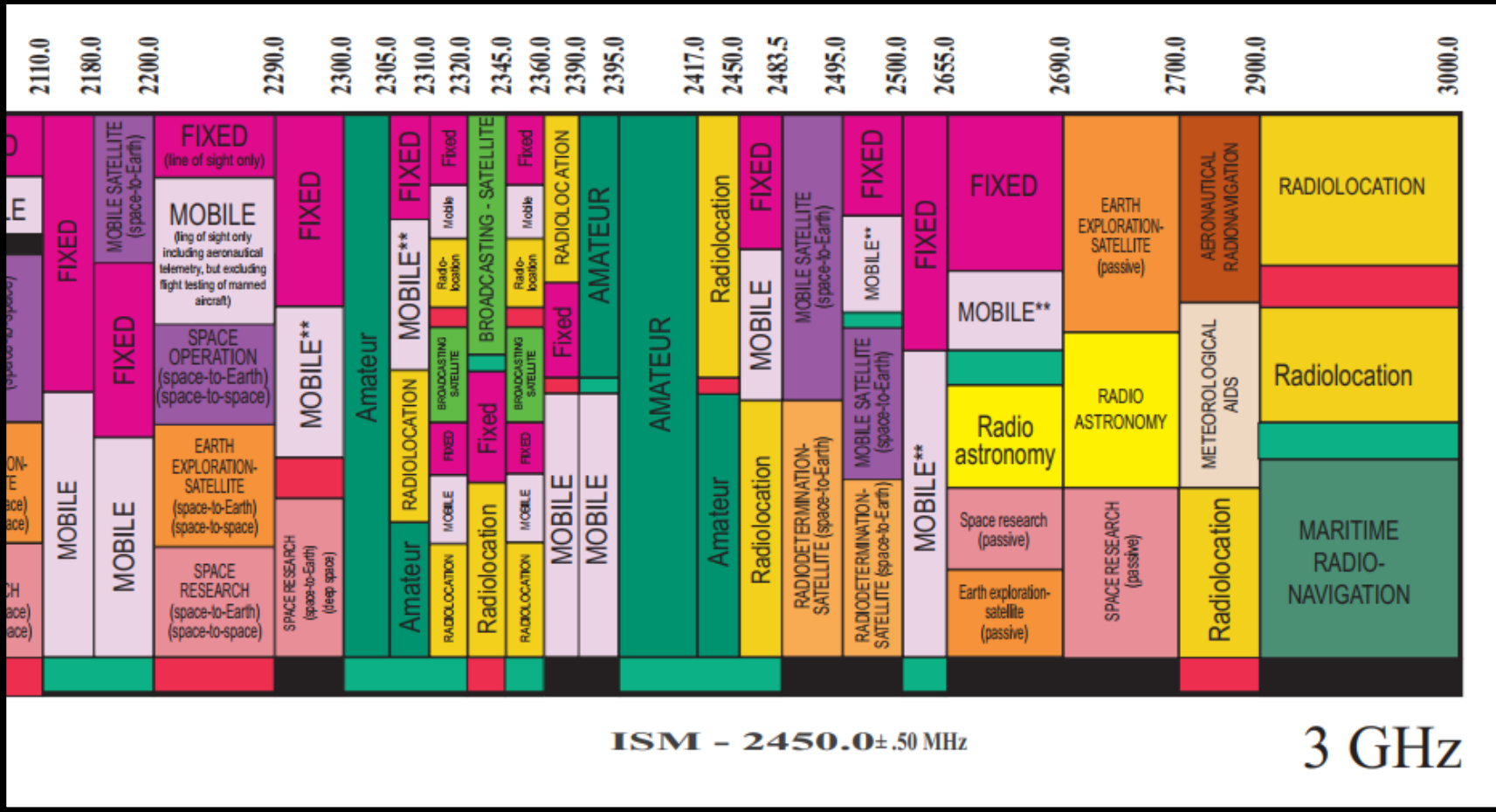
SERVICE	EXAMPLE	DESCRIPTION
Primary	FIXED	Capital Letters
Secondary	MOBILE	1st Capital with lower case letters

This chart is a graphic, single point-in-time portrayal of the Table of Frequency Allocations used by the FCC and NTIA. Such charts are copyright material of the agency, its services, its resources and other things made in the Table of Frequency Allocations. Therefore, for complete information, users should consult the Table to determine the current status of U.S. allocations.

U.S. DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Office of Spectrum Management
JANUARY 2016



PLEASE NOTE: THE OPENING-ALLOTTED BANDS IN THIS SPECTRUM CHART ARE NOT NECESSARILY THE ACTUAL BANDS OF USE THAT ARE OCCUPYING.



NON-FEDERAL EXCLUSIVE

ALLOCATION USAGE DESIGNATION

SERVICE	EXAMPLE	DESCRIPTION
Primary	FIXED	Capital Letters
Secondary	Mobile	1st Capital with lower case letters

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Filtro Passa-Baixa

- Um sistema de comunicação wireless opera na banda ISM de 2.4 GHz. No entanto, este sistema sofre uma interferência muito grande de transmissores marítimos que operam entre 2.9 e 3 GHz.
 - Projete um filtro passa baixa do tipo step-impedance (μ Strip) para uma “resposta maximamente plana” (*maximally flat response*). Utilize a figura 8.26 para determinar a ordem do filtro e a tabela 8.3 para determinar o valor dos elementos reativos. Garanta uma atenuação de pelo menos 10 dB em 2.9 GHz. Considere uma tecnologia onde a menor dimensão fabricável é de 300 μm .
 - Implemente o filtro utilizando componentes ideais (L e C).
 - Implemente o filtro utilizando linhas de transmissão (MLIN).
- Simule o filtro no Momentum (Layout – Generate Layout, adicione portas e substrato)
- Comente os resultados