# *VHF managers open meeting:*

# *IARU WRC activities & 23cm*

Mats, SM6EAN

# IARU coverage for WRC-23

| IARU Matrix for WRC-23 and WRC-27 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WRC-23 Agenda Items | | | | | | | WRC-27 Agenda Items | | | Non-WRC issues | | |
| | 1,2 | 1,12 | 1,14 | 1,18 | 9.1a | 9.1b | 10 | 2,1 | 2,6 | 2,13 | WPT & EMC | Noise | Small Sats |
| | IMT 3300-3400 MHz, 10.0-10.5 GHz | 45 MHz EESS | 231.5-252 GHz | NB sats 3300-3315, 3385-3400 MHz | Space weather sensors | 1240-1300 MHz RNSS/amateur | WRC-27 Agenda | 231.5-275 GHz | Space WX | NB sats | | | Handbook |
| **Overall coordination:** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **LA2RR** | **?** | **K1ZZ** | **LA2RR** |
| **AI Lead** | VE3QN | K1ZZ | K1ZZ | Vacant | K1ZZ | G4SJH | VE6SH | K1ZZ | K1ZZ | TBD | | | |
| **ITU** | | | | | | | | | | | | | |
| WP1A | | | | | | | | | | | G3BJ | | |
| WP3L | | | | | | | | | | | | G3BJ/W5ZN | |
| WP4A | | | | | | | | | | | | | PB2T |
| WP4C | | | | G4SJH | | G4SJH | | | | | | | |
| WP5A | | | | | | LA2RR/G4SJH | | | | | | | |
| WP5D | WB3ERA | | | | | | | | | | | | |
| WP7C | | NQ6Z | K1ZZ | | NQ6Z | | | | | | | | |
| CPM-2 | | | | | | | VE6SH/LA2RR | | | | | | |
| **CEPT/CPG** | G4SJH/EI3IO | G4SJH/EI3IO | G4SJH/EI3IO | G4SJH/EI3IO | G4SJH/EI3IO | G4SJH/EI3IO | G4SJH/EI3IO | | | | | | |
| PT1 (IMT) | G4SJH | | | | | | | | | | | | |
| PTA Science | | EI3IO/G6JYB | EI3IO/G6JYB | | EI3IO/G6JYB | | | | | | | | |
| PTB Space | | | | Vakant | | | | | | | | | |
| PTC Aero & Maritim | | | | | | G4SJH/DF2ZC | | | | | | | |
| PTD UHF | | | | | | | | | | | | | |
| **ASMG** | OD5TE | OD5TE | OD5TE | OD5TE | OD5TE | OD5TE | | OD5TE | OD5TE | OD5TE | As needed | | |
| **ATU** | 6W1KI | 6W1KI | 6W1KI | 6W1KI | 6W1KI | 6W1KI | | 6W1KI | 6W1KI | 6W1KI | AS needed | | |
| **RCC** | LZ1US | LZ1US | LZ1US | LZ1US | LZ1US | LZ1US | | LZ1US | LZ1US | LZ1US | As needed | | |
| **CITEL** | PY2ZX/XE1VP/ WB3ERA/VE3ICV | PY2ZX/XE1VP/ VE3ICV | PY2ZX/XE1VP/ VE3ICV | PY2ZX/XE1VP/ VE3ICV | PY2ZX/XE1VP/V E3ICV | PY2ZX/XE1VP/ WB3ERA/VE3ICV | | PY2ZX/XE1VP/V E3ICV | PY2ZX/XE1VP /VE3ICV | PY2ZX/XE1VP/ VE3ICV | PY2ZX/XE1VP /VE3ICV | | |
| **APT** | JA1CJP/YD1PRY/ JH1NBN | YD1PRY/JA1CJP/ JH1NBN | JA1CJP/YD1PRY / JH1NBN | YD1PRY/JA1CJP/ JH1NBN | YD1PRY/JA1CJP / JH1NBN | YD1PRY/JA1CJP/ JH1NBN | | JA1CJP/YD1PRY / JH1NBN | YD1PRY/JA1C JP/ JH1NBN | YD1PRY/JA1CJ P/ JH1NBN | JA1CJP/YD1P RY/ JH1NBN | | |

# Overview of relevant outcome WRC-23

- **AI-1.2**: More broadband in the 3.3 GHz and 10GHz (in Region 2). A difficult challenge on this as the amateur services are secondary – with numerous (mainly South American) countries allocating mobile broadband by way of footnotes. Instead of a region-wide designation for IMT at 10.0−10.5 GHz in Region 2 there is a footnote limited to a dozen countries.
- **AI-1.12**: 40 – 50MHz radar sounders. These have now been largely limited to the polar area.
- **AI-1.14**: 231.5−252 GHz re-allocations for Earth Sensing. Fortunately, our secondary 241 – 248 GHz allocation is unchanged and the primary allocation of 248 – 250 GHz is unaffected.
- **AI-9.1a**: on Space weather sensors was an item of major interest. Aa clear definition for such sensors was arrived at, with frequency protection being agreed as an agenda item for WRC-27.
- **AI-9.1b**: *23cm – separate slides*

# WRC-23: Agenda Item 9.1b

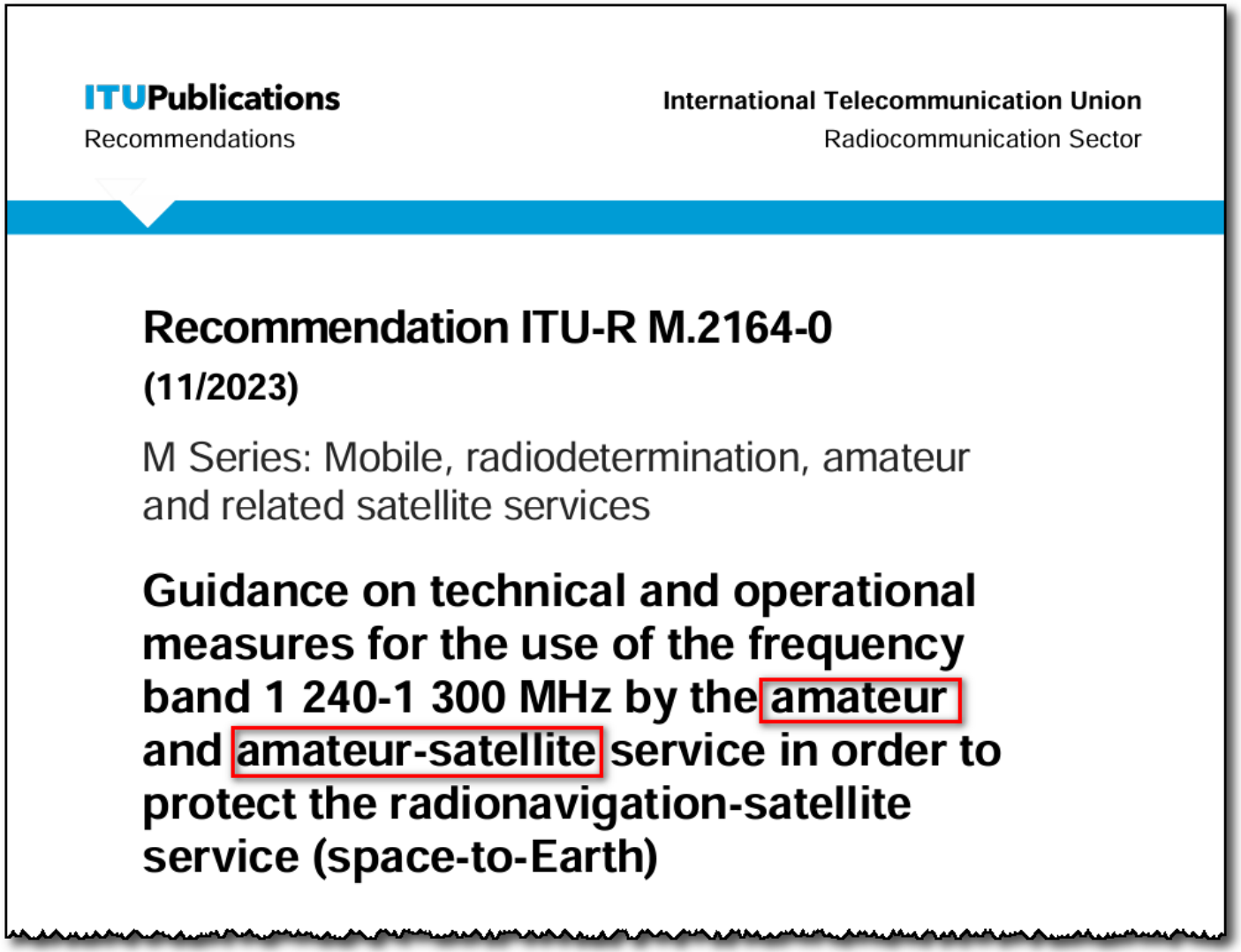
(9.1-b) Review of the amateur service and the amateur-satellite service allocations in the frequency band 1 240-1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service operating in the same band in accordance with Resolution 774 **(WRC-19)**

Amateur radio secondary in the band 1240 – 1300 MHz

| Allocation to services | | |
|---|---|---|
| **Region 1** | **Region 2** | **Region 3** |
| **1 240-1 300** | EARTH EXPLORATION-SATELLITE (active)<br>RADIOLOCATION<br>RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space)<br>5.328B 5.329 5.329A<br>SPACE RESEARCH (active)<br>Amateur<br>5.282 5.330 5.331 5.332 5.335 5.335A ADD 5.A91B | |

ITU Radio Regulations

# Recommendation ITU-R M.2164-0 (11/2023)



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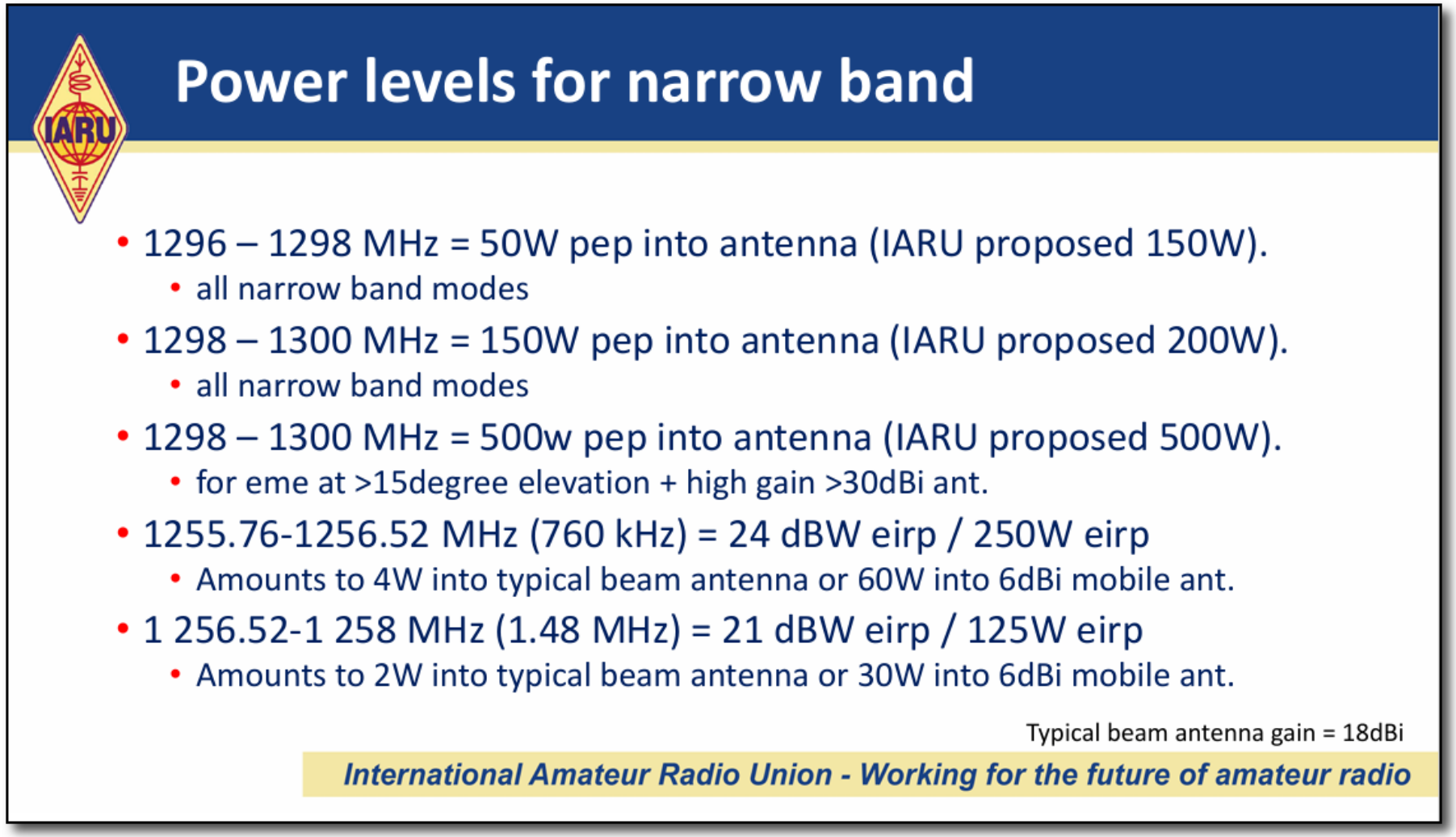

# Recommendation ITU-R M.2164-0 (11/2023)

## Power levels for broadband

- 1255.76-1256.52 MHz (760 kHz) = 24 dBW eirp / 150 kHz eirp
  - Amounts to 26W into typical beam antenna for 1MHz DATV signal.
- 1 256.52-1 258 MHz (1.48 MHz) = 21 dBW eirp / 150 kHz eirp
  - Amounts to 13W into typical beam antenna for 1MHz DATV signal.
- The IARU had proposed a 4MHz wide block between 1256 and 1260 MHz at 100W.

Typical beam antenna gain = 18dBi

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# Recommendation ITU-R M.2164-0 (11/2023)

## Power levels for narrow band satellite

- 1260 – 1262 MHz for all narrow band modes (<150 kHz):
  - Maximum value of e.i.r.p. =
  - −3 dBW for 0° to 15°
  - 17 dBW for 15° to 55°
  - 26.8 dBW for 55° to 90°
- 17 dBW eirp corresponds to 5W to a 10 dBi antenna

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# Recommendation ITU-R M.2164-0 (11/2023)

## Suppressing power levels

- 1 258-1 296 MHz: Maximum value of e.i.r.p. −17 dBW =20mW.
  - No viable narrow band or broadband operation.
- 1 240-1 255.76 MHz: −39.0 dBW in (150 kHz) = 1.26mW/150 kHz.
  - 21dB more stringent at high elevation angles.
  - No viable narrow band or broadband operation.
- Other Measures:
- Out-of-band emissions below 1 255.76 MHz, should be as defined above; i.e. −39.0 dBW in (150 kHz).
  - E.g. a 150kHz wide emission would seem to need to be 63dB down.
- Additional aeronautical considerations 1240-1256 MHz.

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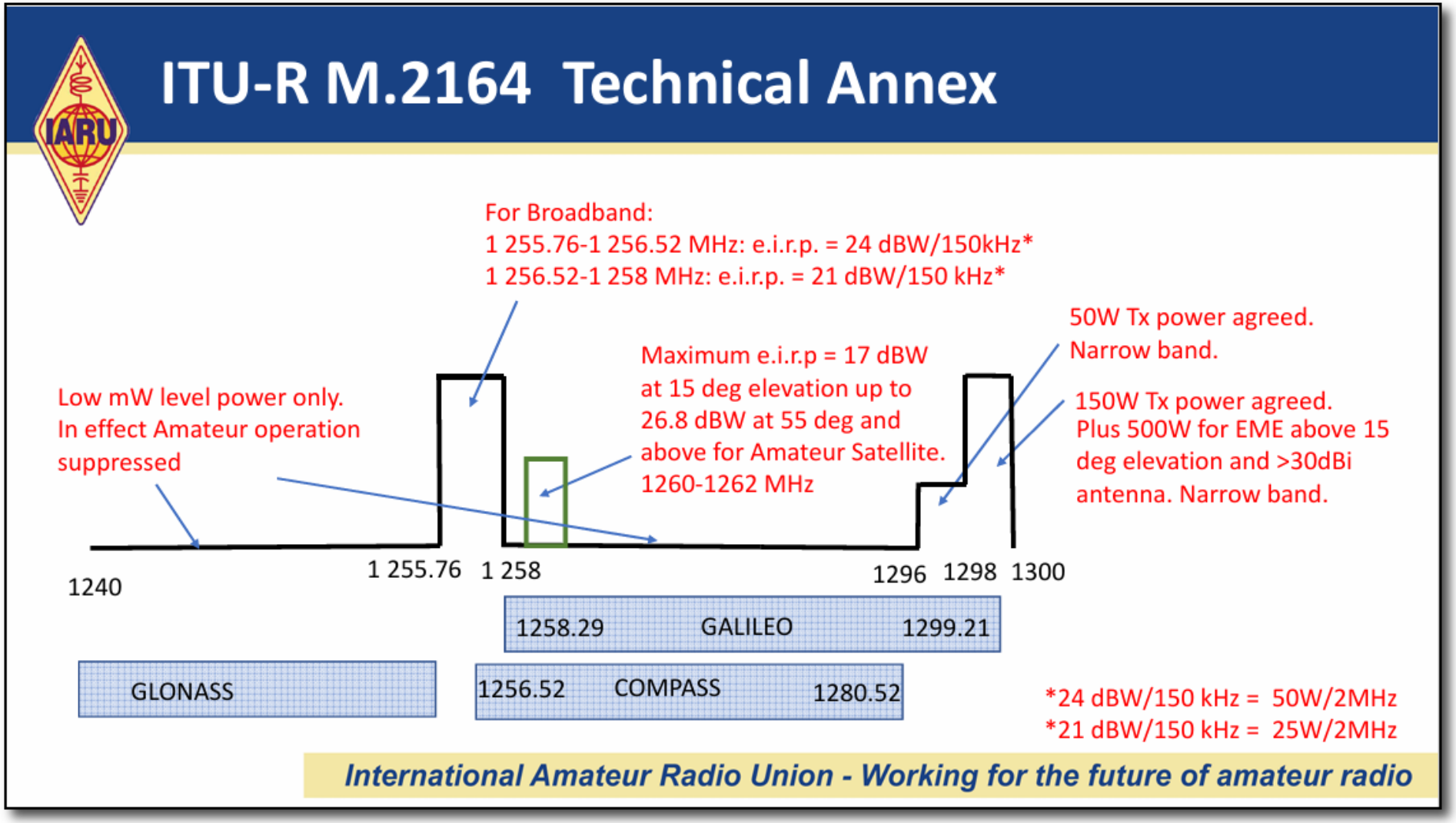
# Recommendation ITU-R M.2164-0 (11/2023)



# What’s next following the ITU-R recommendation?

- CEPT will discuss the ITU-R recommendation, starting May.
- Most NTO’s will probably await CEPT discussions before national regulations are updated.
- Anything IARU-R1 member societies can do?

**Yes:**

- Push for no less than what is recommended in ITU-R M.2164-0.
- Make proposals to IARU-R1 VHF committee for band plan updates. Interim recommendations can be made by the committee.

# Overview of relevant agenda items (AI) for WRC-27

- 1300 – 1350 MHz — A previous proposal for this band, adjacent to 23cm was suppressed, providing certainty for our secondary allocation.
- Space Weather – this potential AI was initially very concerning as both the 0.1−20 MHz and 28 and 50 MHz bands were initially under consideration, until concerns were raised, and a team effort resulted in these allocations being removed from the topic.
- Lunar Communications – the future agenda item initially included 70cm and other bands where EME could be restricted. Fortunately, the UHF aspect of this AI was modified to exclude 430 – 440MHz.
- 10GHz – we were fortunate that the band was withdrawn from another round of consideration for mobile broadband, especially in Region 1.

# Preliminary agenda items (AI) for WRC-31

- WPT Wireless Power Transmission – both near-field and beamed being considered as part of the ITU radio regulations, whilst minimising its impact from interference.
- 275 – 325 GHz Allocations – which will include an opportunity for the amateur and amateur-satellite service.

# MGM in NAC

- Nordic VUSHF 2023, Ånnaboda:

  Keep Tuesdays as is (allowing “all” modes), allow EME. Thursdays allow 4 character locator. User, robot or contest manager fill character 5 – 6 with MM = square center.

- IARU-R1 recommendation, from VHF Handbook 10.02

  **Operating modes**

  IARU recommends avoiding organising any contest where is permitted either the use of digital modes and analogue modes (phone-CW), with the main goal to increase the use of the spectrum efficiently during any contest activity. Member Societies are encouraged to follow for the Subregional Contests.

  **MONTHLY DIGITAL ACTIVITY CONTEST**

  Each MS organizes monthly digital weak signal mode activity contests as described above according to this schedule:

  - the 1st Wednesday of the month from 17:00 to 20:00 UTC on the 144 MHz band.
  - the 2nd Wednesday of the month from 17:00 to 20:00 UTC on the 432 MHz band.

# Thank you