

Harmonised Frequencies for EME: Past, Present & Future

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International Amateur Radio Union – Region-1

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About Me

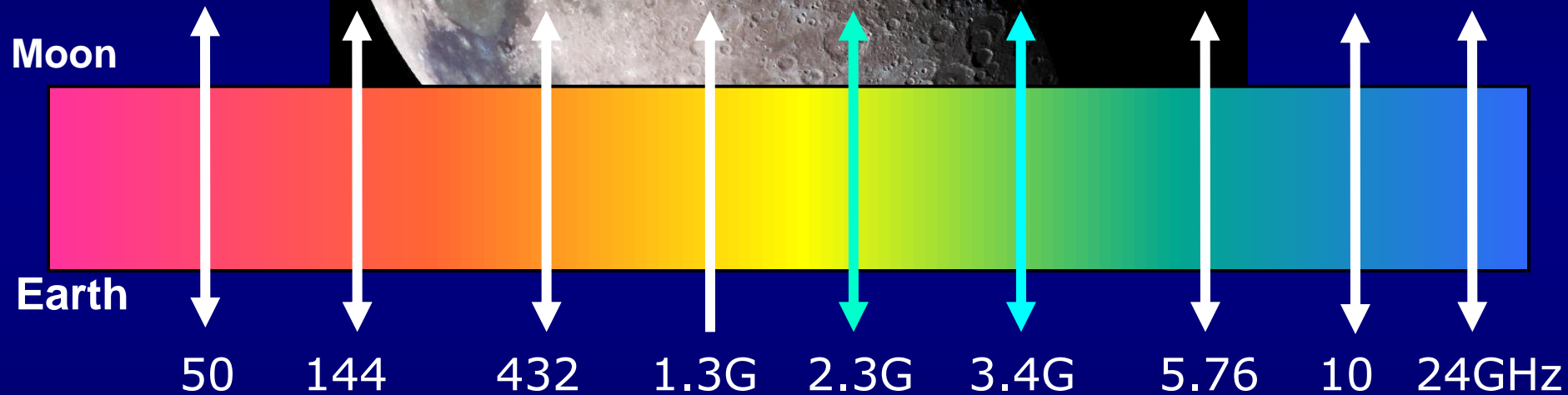
- RSGB Microwave Manager
- Member of the IARU Region-1 VHF/Microwave Committee
- Region-1 Lead for Future Spectrum in bands above 146MHz
- Other Jobs include training new amateurs and use of Amateur Freqs for a certain Sports Event...



This Talk

- This talk is very brief and is a backdrop to the Frequency Discussion Forum
- Covers Frequencies and the desire to harmonise and protect them
- 2.3GHz – more in next paper
- Full detail in the Conference Proceedings - highly recommended reading!!!

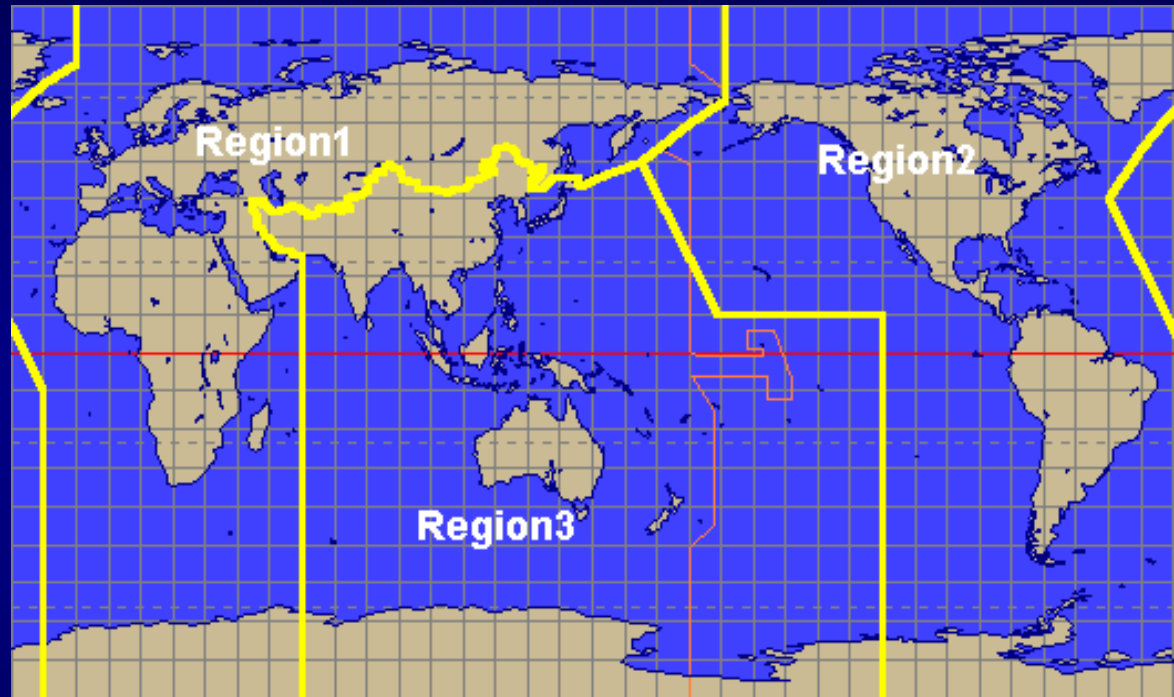
VHF/Microwave EME Allocations



- **Only 145 & 24G are Primary Allocation...**
- **1.3G – Shared with Radars & Navigation systems**
- **2.3G – Fragmented / threatened**
- **3.4G – Modest allocation in Region-1 Countries, but growing**

Background: The World is Split

- ITU Frequency Allocations are split into Regions



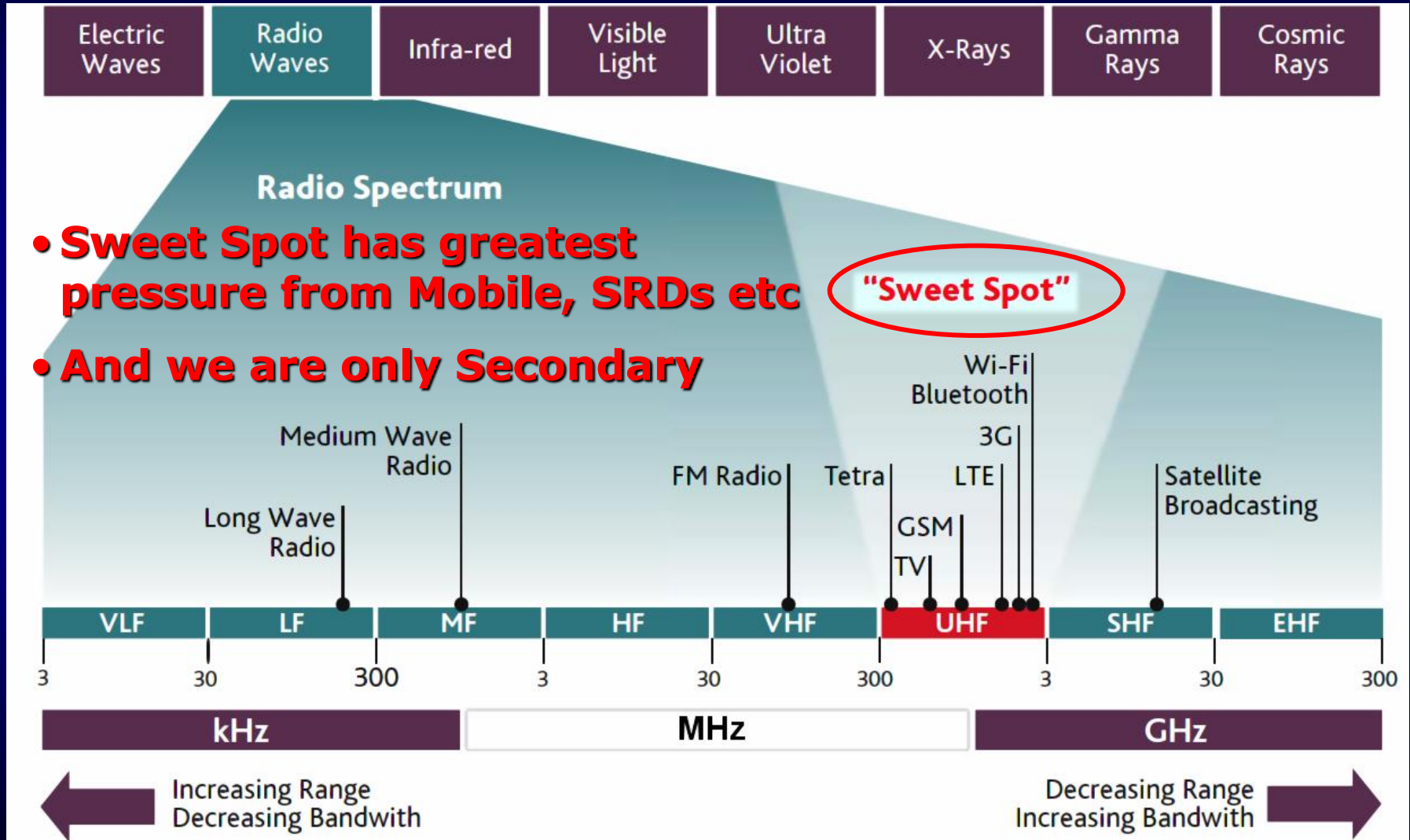
- IARU is organised along the same lines

- However Nations may still allocate or restrict at local level – eg 13cm

Remember...

- Spectrum is decided by Regulators
- Band plans are decided by Amateurs

Where is the Greatest Pressure... ?



Key Messages in Full Paper

- 1) Please help us to help you!
- 2) Broader outreach and PR needed to give due recognition of achievements
 - and that the EME frequencies are in use
- 3) Band Plans evolve over time. Please keep abreast of changes, and feed your own changes back to national society band planners so that both sides keep up-to-date.

Band Plans do evolve over time...

- EME Changes in:
50, 144, 1.3, 3.4,
24, 134...
- EME Ops need to let
band planners know if
they migrate over time!
- Note new 1240 reserve
in Region-1 for 1296

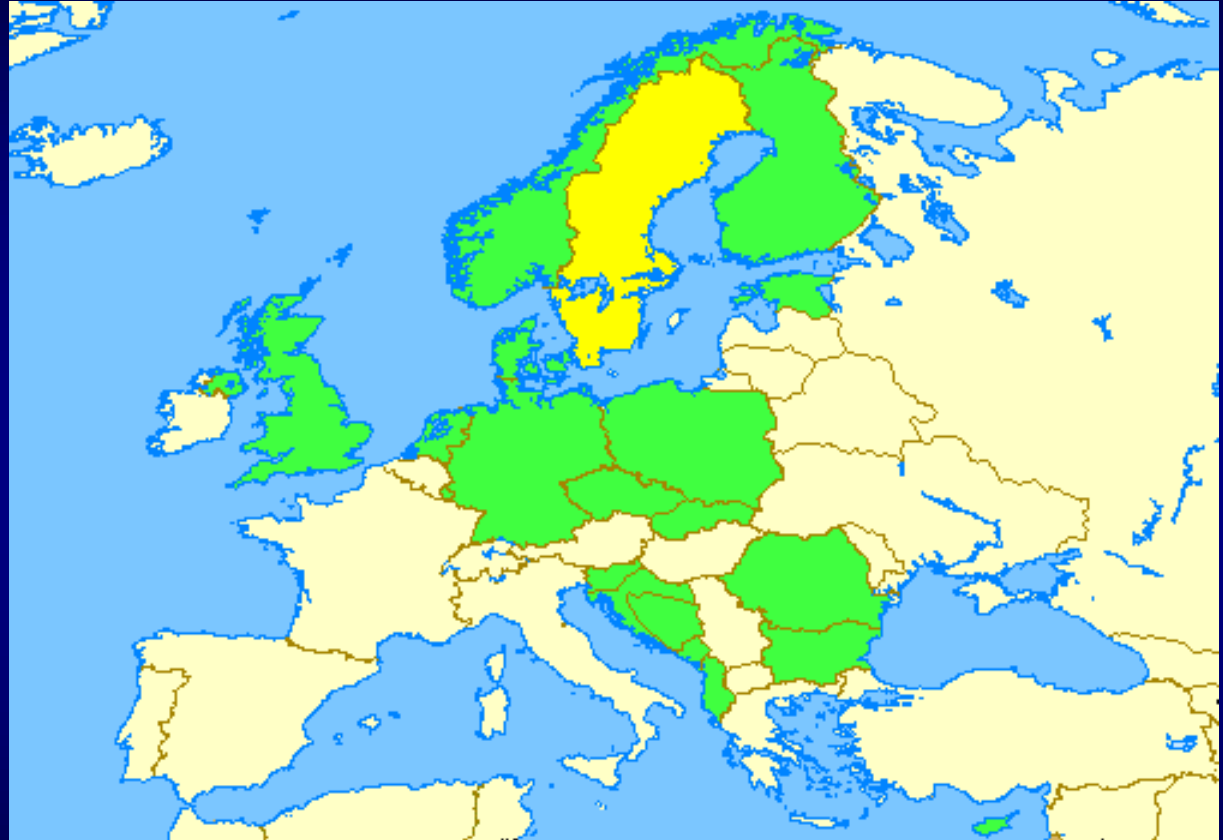
Band	Past	Present	Future	IARU Region 1 VHF Managers' Handbook v6**
50 MHz	Not defined	R1: 50.310–50.320 (Jan 2012) R2/3 - ??	R2 / R3 looking at new R1 plan	50.310–50.320 Major 6m Band Plan reform at IARU-R1 Sun City
70 MHz			?	Nothing so far
144 MHz	144.00 – 144.05	144.1+	May need a tidy up	CW: 144.000–144.110 MGM: 144.110– 144.160
220 MHz		US: 222.0–222.025		No allocation – Digital Broadcasting
432 MHz		US 432–432.070?		CW: 432.000–432.025
902 MHz		ARRL: 902.8–903.0		No allocation
1296 MHz		IARU: 1296.0– 1296.10 ARRL: 1296.00– 1296.05	R1: 1240 +1296 ARRL re-plan in progress	1296.00–1296.025 (Reserve within 1240.0–1240.5)
2300 MHz	2304	2302, 2304, 2320, etc	Less than we have now....	2320.0 –2320.025 CW only Other Narrowband usage noted at 2304–6 and 2308–2310
3400 MHz	3456	IARU: 3400.1 ARRL: 3400.0– 3400.3	Safe?	3400.100 activity centre Changed 2007/8 in R1, 2012 in USA
5760 MHz	5760	5760	RLANS, SRDs	No EME designation
10 GHz	10368	10368 / 10450(JA)		No EME designation WRC-15 threats
24 GHz	24192	24048.?	Primary only	No EME designation
47 GHz	47088	47088.?		No EME designation
76 GHz	–	UK: 75976 EU: 76032 US: 78192		WRC-15 AI-1.18 vs 77.5–78.0 (Primary)
134 GHz	134.001	R1: 134.928		134.928 (Aug 2011)

13cms: The Challenge

- 2300 is Allocated worldwide to Mobile as Primary and is designated (NOT allocated) for International Mobile Telecomms (IMT)
- Amateur allocations are global too at this top Level
- It is national restrictions that have caused problems
- Restrictions and frequency release/sales increasing
- For forum session:-
 - If we are to survive in this band, fragmentation must be reduced – possibly by trading rest of band
 - Do we focus on the very bottom of the band? (adjacent to protected <2300 freqs)

9cms: Progress Continues

- Region-2&3 have full ITU Amateur allocations
- Focus now on 3400-10 MHz as rest will be mobile
- Region-1 based on EU17...



- **Latest Allocations: Poland, Estonia, Albania – more please!**
- **EME 9cm ops moved - ARRL/FSC assume 3400 not 3456**

More Messages...

- 4) It's more than just 'Use or Lose' our EME frequencies. **We need to show more visibly what resources are being used.** Please assist with Web content etc.
- 5) **Watch the Politics** as well as the Engineering. We need to **demonstrate** our own 'economic and **societal value**' in these arenas too.
- 6) Stay alert for any new restrictions / allocations and inform all your contacts; eg in 1.3, 2.3GHz - and keep 3400 MHz active!
- 7) Let us know of any new threats or ideas – or new volunteers!

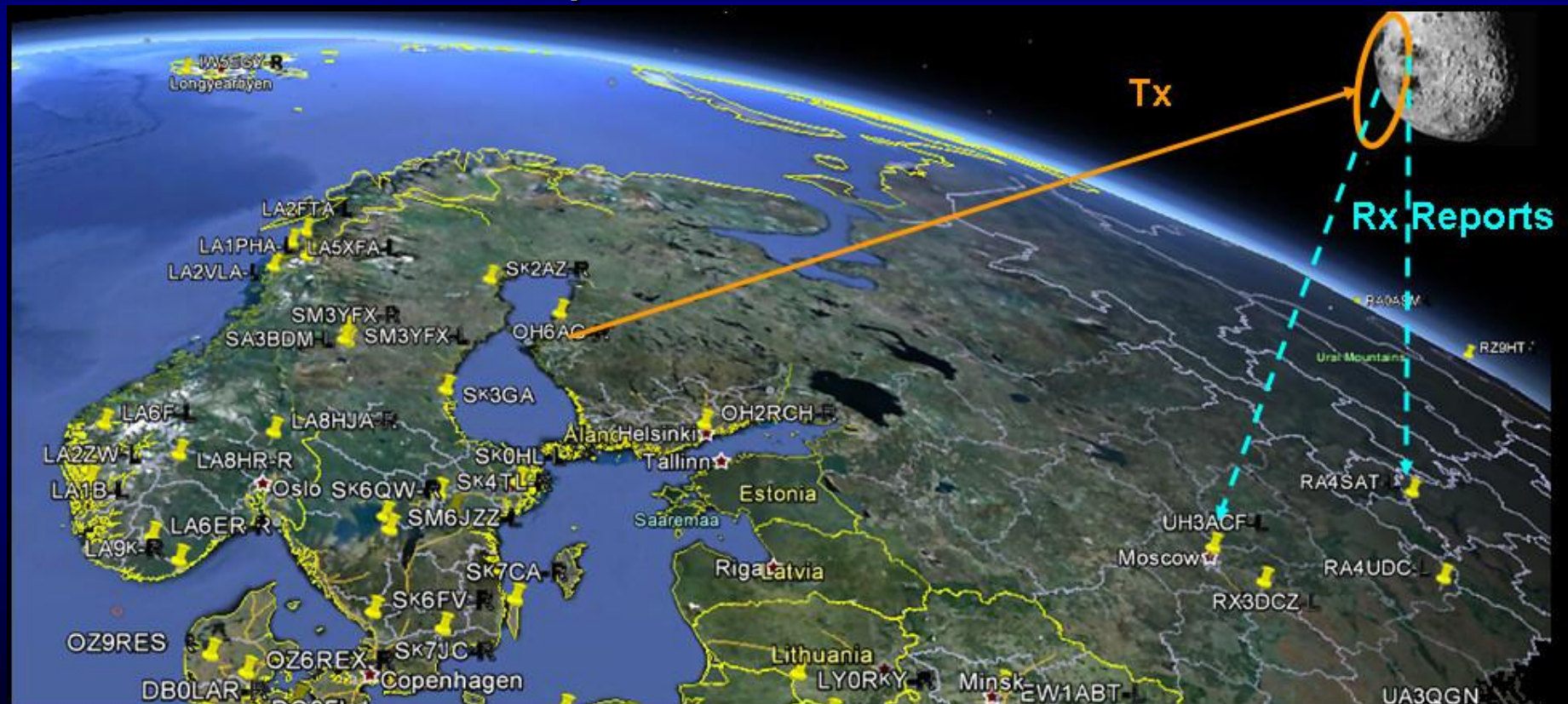
Future Spectrum Committee

- Study set up in 2011 by the IARU- Administrative Council – the top body
- Summary of Remit: **Requirements and ANY strategy for bands above 146MHz**
- Has reps from three regions:-
 - R1: Murray Niman G6JYB
 - R2: Brennan Price N4QX
 - R3: John Martin VK3KM
- **Common narrowband, EME & Satellite allocations are key considerations**



Message-8: Visibility – 'EMESpot'

- An operating and an outreach aid that would also help the future - Volunteers?



Summary

- EME is one of the technical pinnacles of amateur radio.
- Frequency managers are keen to promote and protect activity
 - but they need your help.
- Ensure that EME is as visible and accessible as possible; - to assist yourselves and inspire the next generation
- **Please help us to help you...**