



International Amateur Radio Union Region 1

A survey of the number of active (transmitting) amateur stations using the band 1240 – 1300 MHz at the busiest times in some countries within the CEPT region

Introduction

The band 1240-1300 MHz (also known as the 23cm band) is a particularly important and interesting band to the amateur service. It sits at the boundary between the established VHF/ UHF bands and the microwave GHz bands. It is considered an important springboard into the higher microwave bands that attract a great deal of technical and operational experimentation.

The European Commission and the European regulators have initiated a work item within CEPT to examine the amateur usage of the band 1240-1300 MHz and consider what steps might be necessary to ensure continued coexistence between these usages and the co-frequency Galileo radio navigation satellite service (RNSS). A wider topic (covering all the relevant RNSS systems in this band) has been agreed in the ITU-R for consideration under agenda item 9.1 to WRC-23.

The European work is being developed within the appropriate committees of the CEPT and the IARU is actively engaging on the topic on behalf of the amateur community.

As well as taking into account the technical parameters associated with the amateur transmitters, it will be key to consider the number and geographical spread of active amateur transmitters that could interfere with the Galileo service users at any specific time. Although there are many tens of thousands of licensed amateurs in most large European countries and many hundreds that take an interest or may be equipped for the 23cm band, only a fraction of those are actively transmitting in the band at any one specific time.

This paper refers to published information and surveys the number of active transmitting stations recorded from the perspective of home and temporary portable simplex stations using narrow band and wide band modes. It does not deal with operation into repeater stations or the output signals from repeater stations (both narrow band and wideband ATV).

Readily available data from a number of CEPT countries has been consulted but of course stations are operational in all CEPT countries.

Amateur Activity Periods in 1240-1300MHz

In order to incentivise radio station development, regular national and regional contests and activity periods are organised throughout the year by the local national societies and interest groups . These activity periods are identified for narrowband terrestrial simplex communication applications as well as for more specialised activities like earth-moon-earth communications or broadband amateur TV.

These contest and activity periods attract by far the largest number of simultaneous users (and therefore transmissions) onto the 23cm band compared with other times when random transmissions might occur.

As contests require adjudication, the active station logs are submitted to a central source (usually the national radio society or contest organiser) and summaries are published in result tables. These summary tables can be consulted to estimate the number of active stations (and therefore transmitters) over the activity period.

Narrow Band Activity in the range 1296 – 1298 MHz

In many countries monthly activity periods are scheduled during a specific weekday evening usually lasting around 2.5 hours. In addition there are two main Europe-wide contest sessions scheduled during the spring and autumn time that last for 24 hours. The results from these periods can be surveyed to identify the busiest sessions in order to evaluate the maximum number of stations active on the band.

Active stations during the busiest period in some CEPT countries:

Country	Active Stations
UK	100
Germany	139
France ¹	88 - 127
Italy	36
Netherlands	19
Switzerland	9

Note 1: Over each of the last 5 years. Power level data not available.

However not every active station will submit their activity log for adjudication and by way of an example:

- The 23cm UK society contest manager reported that 155 different callsigns were active throughout 2019 at some point.
- The Dutch society VHF manager indicated that 87 different callsigns were active during 2019 as a whole.

To be conservative the numbers in the table above could be increased by 50%.

Resources consulted:

GB - <https://www.rsgbcc.org/cgi-bin/vhfresults.pl?Contest=1.3GHz%20UKAC&year=2019>

CH - <https://www.uska.ch/amateurfunkpraxis/contest/schweizer-contest-uhfvhf/>

IT -

http://www.ari.it/index.php?option=com_content&view=article&id=6051&Itemid=352&lang=it

DE - <https://www.darc.de/der-club/referate/conteste/ukw-conteste-start/archiv-ukw-conteste/>

Earth-Moon-Earth (EME) Activity in the range 1296 – 1298 MHz

There are five major activity contest periods scheduled each year by interest groups in Europe, USA and Italy. Each scheduled period is 24hrs although the moon will only be visible for around 15 hours from any single location.

Again these activity periods are the focus for activity and result in the busiest times on the band.

Active 23cm EME stations in the CEPT countries represented in the results:

Country	Active Stations
Russian Federation	7
Czech Republic	5
Sweden	5
Germany	4
Fr / IT/ Poland	3 each
+ 8 more countries	1 each

In total 38 active stations across the CEPT region are noted for the specific event analysed. In addition another 19 stations across the CEPT region are noted as “multiband”. These stations will be active on frequencies in the lower VHF and UHF ranges as well as the 23cm band.

Resource:

<https://contests.arrl.org/ContestResults/2018/EME-2018-FinalFullResults.pdf>

Wide Band Activity (ATV) around 1260 MHz

There is one major regional activity contest period scheduled each year by the amateur TV community in Europe. This is a 30 hour event over a weekend. In addition some national societies organise scheduled activity weekends once a month.

Again these activity periods are the focus for activity and represent the busiest times on the band.

Recorded number of active stations by CEPT country:

Country	Active Stations
Italy	24
Netherlands	24
UK	15
Sweden	5
Spain	4
France / Germany	2 each
Switzerland	1

In total 77 active stations across the CEPT region are noted for the 30hr regional activity contest. Using the UK as an example, the published results show that 8 of the 15 active stations were temporary “portable” stations.

Resource:

https://wiki.batc.org.uk/images/c/ce/IARU_Region_1_ATV_Contest_2018_Results.pdf

Conclusion

Published activity and contest period results have been reviewed for a selection of CEPT countries. These periods are the busiest times on the 23cm amateur band and illustrate that despite there being many thousands of licensed amateurs in most CEPT countries only a small proportion of those are actually active and transmitting at any time in the 23cm band.

The IARU believes this provides evidence that the potential for widespread interference from home and temporary portable stations using narrow band and wide band modes in a simplex fashion (i.e. not with the use of a repeater station) into primary users in the band is minimal.