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CONTESTING

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1. IARU-R1 RULES IARU R1 50/70 MHZ, 145 MHZ AND UHF/µW CONTESTS

rules for 2021

1.1 Objective

The main objectives are to make as many contacts as possible and to have fun. Other objectives may include improving your operating skills, testing new equipment configurations and techniques, expanding your horizons by operating on the microwave bands and exploring radio propagation.

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.

1.2 Definitions

• **Station:** set of antennas, transmitters and receivers used during the contest on each frequency band (i.e. multiband setups are composed of multiple stations).
• **Location:** geographical area with diameter of no more than 500 meters where the station resides during the contest
• **Call Sign:** identification of the station during the contest. Added prefix and/or suffix do not generatedifferent call sign (i.e. S50AAA/p or DL/S50AAA are the same call sign as S50AAA).

- **Operator:** an individual that operates the station during the contest using the station's call sign.Operator may reside inside (local operator) or

outside (remote operator) the location. During thecontest an operator may operate only stations that form one entry

Entries:

o MULTI operator: stations from the same location, operated by more than one operator and using one callsign on all bands.

o SINGLE operator: stations from the same location, operated by the same operator and using one callsign on all bands, with no operational assistance of another person during the contest.

- 6 HOURS: stations from the same location, operated by any number of operators and operating according to the 6 hours' time rule. The 6 hour time segment can be divided into maximum two periods. The time of the first QSO sets the start time of the first period. When operating in two periods, the pause between the periods must be longer than 2 hours. The first time difference of 2 hours or more between two consecutive QSOs marks the pause segment. Only the QSOs that fall into the combined 6 hour time segment will be counted for points. Participants are welcome to operate longer than 6 hours and in such case they shall send their complete log (the contest robot will automatically extract the 6 hours part from the log, while the rest of the log entries will be used for cross-checking purposes).

  o LOW POWER: multi or single operator entries, transmitting with total of up to 100 W PEP from the transmitter and using only one directional or omnidirectional antenna system. The sameantenna must be used for transmit and receive. Directional antenna system is a single directional antenna or a group (array) of single directional antennas, grouped together to achieve maximum obtainable gain in a given direction (that is, all the antennas in the group shall be pointed in the same direction). Omnidirectional antenna is an antenna with a radiation pattern that has approximately the same gain in all azimuth directions.

1.3. Conditions for entrants: All licensed radio amateurs in Region 1 may participate in the contest. The entrants must operate within the letter and spirit of the contest. Entrants must operate according to the license conditions of the country where the station resides. Stations operating under special high power license can only entry as check logs.

IARU-R1 Contests rules

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1.4 Date of contests:

Date of contests

- IARU Region 1 50 MHz MGM Contest will begin on the third Saturday of April
- IARU Region 1 70 MHz MGM Contest will begin on the third Saturday of May
- IARU Region 1 50 MHz (CW-SSB Only) Contest will begin on the third Saturday of June
- IARU Region 1 70 MHz (CW-SSB Only) Contest will begin on the third Saturday of July
- IARU Region 1 145 MHz contest will begin on the first Saturday of September
- IARU Region 1 UHF/Microwaves contest will begin on the first Saturday of October.

Each contest will commence at 14:00 UTC on the Saturday and end at 14:00 UTC on the Sunday

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1.5. Contest sections

1.5 Contest sections:

The contests shall comprise the following sections for:

1.5.1 50MHz Contests

- IARU Region 1 50 MHz MGM Contest will begin on the third Saturday of April
- IARU Region 1 70 MHz MGM Contest will begin on the third Saturday of May
- IARU Region 1 50 MHz (CW-SSB Only) Contest will begin on the third Saturday of June
- IARU Region 1 70 MHz (CW-SSB Only) Contest will begin on the third Saturday of July
- IARU Region 1 145 MHz contest will begin on the first Saturday of September
- IARU Region 1 UHF/Microwaves contest will begin on the first Saturday of October.

1.5.2. 70MHz Contests

- SINGLE (SO): single operator entries only CW/SSB)

- MULTI (MO): multi operator entries (only CW/SSB)
- 6HOURS (6H): 6 hours entries (only CW/SSB)
- SINGLE (SO-MGM): single operator entries MGM
- MULTI (MO-MGM): multi operator entries MGM
- 6HOURS (6H-MGM): 6 hours entries (MGM)

1.5.3. 145MHz Contests

- SINGLE (SO): single operator entries.
- MULTI (MO): multi operator entries.
- SINGLE LOW POWER (SO-LP): single operator low power entries.
- MULTI LOW POWER (MO-LP): multi operator low power entries.
- 6HOURS (6H): 6 hours entries.

1.5.4. 435 MHz Band:

- SINGLE (SO): single operator entries.
- MULTI (MO): multi operator entries.
- SINGLE LOW POWER (SO-LP): single operator low power entries.
- MULTI LOW POWER (MO-LP): multi operator low power entries.
- 6HOURS (6H): 6 hours entries.

1.5.5. 1.3 GHz, 2.4 GHz, 3.4 GHz, 5.7 GHz, 10 GHz bands and for the Millimetre group (the combined group of amateur bands above 10 GHz):

- SINGLE (SO): single operator entries.
- MULTI (MO): multi operator entries.

1.6. Operating

Only one signal on the band is allowed at any time.
Station must operate from the same location throughout the contest time.

1.7. Contacts

Each station may only be worked once per band. If a station is worked again on the same band, only onecontact may count for points. Any duplicate contacts should be logged without claim for points and clearlymarked as duplicates.

Contacts made via active repeaters and EME contacts do not count for points.

Competitors are obliged to follow the common definition for a valid QSO (as defined in the VHF Managers Handbook and replicated below). The contest exchange (call, report, QSO number and locator) shall be sent and confirmed on the band where the contact started and only during the contact.

No attempt should be made during the QSO or after the contest to obtain any part of the required exchange information via other communication methods such as the Internet chat channel, WEBDSR and remote receiver outside 500 metres diameter from the station location, DX Cluster, talk-back on another amateur band, telephone etc.. Such a secondary method invalidates the contest QSO.
Correction of logged exchanges after the contest, by use of any database, recordings, email or other method, is not allowed. The log should contain what happened (sent and received) in the band during the contest.(VGC 2020)

Self-spotting is permitted on all media except the DX Cluster (sending lots of self-spots to chat rooms is not recommended and is discouraged).

1.7.1. Acceptable examples when using a secondary method:

- “Shall we make a sked on 144.388?"
- "I have QRM, let's move to 144.218 kHz and start again"
- "Nothing received, please try again" and the QSO starts again
- "Thank you for a nice QSO" - Note: Only after the QSO has completed on the radio!

1.7.2. Unacceptable examples when using a secondary method:

- "I need your serial number"
- "Please repeat all information"
- “Please confirm <report>, <serial number>, <locator> etc.”

1.7.3. Definition for a valid contest QSO:

A valid contact is one where both operators during the contact have:
• mutually identified each other
• received a contest exchange, and
• received a confirmation of the successful identification and the reception of the contest exchange.

1.8. Type of emission

Contacts may be made in A1A(CW), J3E(SSB) or F3E(FM) (G3E(PM)).
MGM (Machine Generated Mode) modes are allowed **only** during the 50/70 MHz contest. Every MGM contact shall be properly marked in the LOG with EDI mode code 7.

1.9. Contest exchanges

1.9.1. CW, SSB or FM/PM modes

Code numbers exchanged during each contact shall consist of the RS or RST report, followed by a serial number commencing with 001 for the first contact on each band and increasing by one

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for each successive contact on that band. This exchange must immediately be followed by the complete QTH locator (6 digit) of the sending station (examples: 59003 JO20DB or 579123 IN55CC).
All times must be logged in UTC.
Call signs logged must be the same as those exchanged over the air by the entrants during the QSO.
For contacts on 50 MHz, outside of Region 1, the received locator can be 4 digits and "MM" will be added as 5th and 6th digit.
Correction of logged exchanges after the contest, by use of any database, recordings, email or other method, is not allowed

1.9.2. MGM modes

Code numbers exchanged during each contact shall consist of the report (as appropriate for the mode in use) and 4-character QTH locator (e.g. IO91). Serial number is not required.
All times must be logged in UTC.
Call signs logged must be the same as those exchanged over the air by the entrants during the QSO.Correction of logged exchanges after the

contest, by use of any database, recordings, email or other method, is not allowed.

1. 10. Scoring

1.10.1. 50 and 70 MHz CW/SSB only, 145 MHz and UHF/Microwave Contests

For the amateur bands up to 10 GHz inclusive, points will be scored on the basis of one point per kilometre, i.e. the calculated distance in kilometres will be truncated to an integer value and 1 km will beadded. The centre of each locator square is used for distance calculations. In order to make contest scorescomparable, for the conversion from degrees to kilometres a factor of 111.2 should be used when calculating distances with the aid of the spherical geometry equation. All QSOs including those with unique stations shall count for points (unique station is a station that appears in the log of only one contest entrant). For the combined higher bands (Millimetre group) the score will be the sum of the points scored on each of the bands, using the following multiplication factors for the number of kilometres scored on each band:

- 24 GHz 1 x
- 47 GHz 2 x
- 76 GHz 3 x
- 122 GHz 4 x
- 134 GHz 8 x
- 245 GHz 10 x

1.10.2. 50 and 70 MHz MGM Contests

The points will be scored on the basis of one point per kilometre, i.e. the calculated distance in kilometres will be truncated to an integer value and 1 km will be added.

The centre of the Large Locator Square (e.g. IO84MM to IO91MM) is used for distance calculations. In order to make contest scores comparable, for the conversion from degrees to kilometres a factor of 111.2 should be used when calculating distances with the aid of the spherical geometry equation. A QSO between stations in the same Large Locator Square will count for 50 points. All QSOs including those with unique stations shall count for points (unique station is a station that appears in the log of only one contest entrant). The final score is total kilometres worked multiplied by the number of large Locator Squares (e.g. IO91) worked. E.g. 10.000 (total qrb points) x 20 Large Locator Square = Final Score of 200.000 points

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1.11. Entries

11.1. 50 and 70 MHz CW/SSB only, 145 MHz and UHF/Microwave Contests

The entries must be set out in EDI digital/electronic form (refer to VHF Managers Handbook, Part 3 section 5) separately for each frequency band. EDI header shall as a minimum contain the following fields:

- Callsign and WWL used (PCall and PWWLo)

• Section and band (PSect and PBand)
• Operators callsigns (RCall for SO entries, RCall and Mope1, Mope2,… for MO entries)
• E-mail address (RHBBS)
• TX power in watts (SPowe)
• Antenna (SAnte); it shall be clearly identifiable how many antenna systems were in use
Logs shall be sent no later than the second Monday following the contest weekend. Late entries will be accepted as check logs.

By submitting the contest or check log, an entrant agrees that he / she has:

• understood the contest rules and agrees to be bound by them,
• operated according to all the rules and regulations that pertain to his and/or station license,
• agreed the cross-checked log may be made open to the public, except for the personal data in PAdr1, PAdr2, RName, RAdr1, RAdr2, RPoCo, RCity, RCoun, RPhon and RHBBS lines of EDI file format,
• agrees the contest organizer can score, amend, publish, republish, print, and otherwise distribute (by any means including paper or electronic) the entry either in its original format, in any other suitable format with or without modifications or combined with the entries from other contestants for entry into the specific contest, other contests, or for other reasons including training, development and advancement of amateur radio,
• accepts all decisions of the contest organizer as final.

1.11.2. 50 and 70 MHz MGM Contests

Since MGM modes need proper software packages that can't export their logs in EDI format, it has been decided to permit the upload of WSJT-X and MSHV ADIF files. For the 2021 year, ADIF files can be directly uploaded to the entry robot at https://iarulogs.rsgbcc.org/cgi-bin/vhfenter.pl (thanks to RSGB); participants shall declare on the same page all the necessary fields to convert the ADIF file into a valid EDI format :
• Callsign and WWL used (PCall and PWWLo)
• Section and band (PSect and PBand)
• Operators callsigns (RCall for SO entries, RCall and Mope1, Mope2,… for MO entries)
• E-mail address (RHBBS)
• TX power in watts (SPowe)
• Antenna (SAnte);
From 2022 the IARU Region 1 Contest Robot will be ready to allow ADIF upload.
Logs shall be sent no later than the second Monday following the contest weekend. Late entries will be accepted as check logs.
By submitting the contest or check log, an entrant agrees that he / she has:
• understood the contest rules and agrees to be bound by them,
• operated according to all the rules and regulations that pertain to his and/or station license,
• agreed the cross-checked log may be made open to the public, except for the personal data in PAdr1, PAdr2, RName, RAdr1, RAdr2, RPoCo, RCity, RCoun, RPhon and RHBBS lines of EDI file format,
• agrees the contest organizer can score, amend, publish, republish, print, and otherwise distribute

(by any means including paper or electronic) the entry either in its original format, in any other suitable format with or without modifications or combined with the entries from other contestants for entry into the specific contest, other contests, or for other reasons including training, development and advancement of amateur radio,

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- accepts all decisions of the contest organizer as final.

1.11.3. Stations eligible to win a prize

In every category of all the IARU Region 1 Contests the stations willing to win their categories must submit their logs individually to the IARU R1 Contest Robot within the 23:59 UTC of the Wednesday midnigth after the contest (34 hours); only these stations will be eligible to the victory and prizes.

If the first station in the classification did not send his log before the deadline to be eligible for the victory (34 hours), then the first station which sent his log within the 34 hours deadline will be the winner. (VGC 2020)

1.12. Judging of entries

All logs are checked using custom software and human judgement.
The claimed contact shall be disqualified for any error in the information logged by the entrant. When there is high evidence that the error is due to the wrongly logged information of the transmitting station (i.e. wrong date/time or call/UL) such a LOG shall not be used for adjudication purposes.
The final judging of the entries shall be the responsibility of the contest organizer whose decision shall be final.
Entrants deliberately contravening any of these rules, attempting fraud or flagrantly disregarding the IARU Region 1 band plans shall be disqualified.
Each VHF Manager and/or national Contest Committee can propose to the contest organizer disqualification or penalization of an entrant.

1.13. Awards

1.13.1. Section winners:

Certificates will be issued by the contest organizer to the winners of the sections on each band up to 10 GHz and for the Millimetre group.

1.13.2 Overall winners for UHF/Microwave contest:

The overall winner of the IARU Region 1 UHF/Microwaves contest will be declared separately for the SO and MO sections.
For the overall results tables, the scores of the entrants operating on at least two of the following bands will

be combined, using an adaptive multiplier system:

1.13.3 Millimetre group

Note: SO entries to the 6H section on 435 MHz will be included in the Overall SO classification if the entries on all bands are SO. MO entries to the 6H section on 435MHz will be included in the Overall MO classification.

The band multipliers for the overall score are calculated as follows:
• The multiplier for 435 MHz is one.
• The multiplier for each of the other bands is equal to the winning score on the 435 MHz band divided by the winning score on each band. The multiplier on each band for the SO and MO sections are determined separately.
• Example:
o Winning score in SO on 435MHz is 200,000 points
o Winning score in SO on 1.3GHz is 20,000 points
o The multiplier for SO on 1.3GHz is 200,000 divided by 20,000 = 10
o So, all scores in SO on 1.3GHz are multiplied by 10 for the Overall SO results table
• The overall millimetre group scores are calculated according to rule 9 before the multiplier for the millimetre group is calculated.

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2. RULES IARU REGION I ATV CONTEST

2.1. Goal

Stimulation of ATV activity by organizing a yearly international ATV contest.

2.2. Terms and Definitions

ATV contest: Competition of licensed or receive-only ATV stations in a certain period of time, on each VHF/UHF/Microwave band on which ATV transmissions are allowed, using the mode(s) authorised for that band. The distance between stations that make contacts on several bands define the number of earned points.

Repeater: A public (amateur) service that (re)transmits received signals that are intended to be received by more than one person.

Station: Any person (or group of persons using one call sign) within IARU Region 1 that is able to transmit and/or receive Amateur Television signals from their own location or remotely, without being a repeater. No more than one transmitter may be in use at the same time. The equipment used by one station must not be shared with another station participating in the contest.

Rover station: Any station that is not fixed to one location that moves at least a minimum of fivekilometres. Every time location is changed the moving station should be considered as a new station with the same call sign. For that reason a new log sheet and four digit code should be used by the movingstation. Roving stations are limited to 4 locations (which may include their home location) during the contest.

Four digit code: Four random chosen digits. The digits shall neither be the same (e.g. 2222) nor consecutive (e.g. 4567 or 5432). Contact: Contacts are considered to be valid when a four digit code that is transmitted by another ATV station is received. Contacts made via repeaters or transponders are not considered as a contact. IARU locator: The six, eight or ten digits of the IARU locator which is related to the longitude and latitude coordinates of the actual position of the antennae that are used during the contact.

Contact: Contacts are considered to be valid when a four digit code that is transmitted by another ATV station is received. Contacts made via repeaters or transponders are not considered as a contact.

IARU locator: The six, eight or ten digits of the IARU locator which is related to the longitude and latitude coordinates of the actual position of the antennae that are used during the contact. Vision report: The internationally recognized codes P0 to P5

	Analogue	Digital
P0	No picture received	No picture received
P1	Synchronisation with little picture content	Only occasional blocks visible
P2	Only large images (call sign etc.) perceivable	Sufficient blocks to read call signs
P3	Picture noisy but some detail resolved	Some blocking
P4	Picture slightly noisy, but with good detail and resolution	Occasional blocking
P5	Noise-free picture	Solid picture

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Log file: An Excel spreadsheet containing all the information that is needed to judge the contacts made and claimed points. It consists of a standard cover sheet and data sheets for every individual band

• A standard cover sheet contains the essential information required to judge the contest entry. Thefollowing information shall be submitted:

o name and address of the (first) operator,
o station call sign,
o IARU locator,
o bands used, with the transmitted four-digit code group used for each band,
o claimed score for each band.
The coversheet should show the typed name of the (first) operator certifying the correctness of the log(s) submitted. The typed name is the alternative of the signature.

• Data sheets for every individual band containing the following columns in the order named:

- date,
- time in UTC,
- call sign of the station worked/seen,
- report sent: P# report followed by serial number,
- report received: P# report followed by serial number,
- (seen) four digit code,
- IARU locator received,
- number of points claimed.

2.3 Responsibilities

Contestants: Operate within the letter and spirit of the contest and in accordance with the licences of their country. Stations operating under special high power licenses shall do so "hors concours".
Completion and delivery of the entry to the National ATV Manager National ATV manager, National VHF manager or the National Contest **Committee:** Judge logs intime, send the results within four weeks after the contest to the IARU ATV manager.IARU ATV contest manager: Organize, publish blank log file at least 3 weeks before the contest, judge logs in time, issue results within six weeks after the contest.

2.4 Date of contest: The contest will be held in the second full weekend of June.

Duration of the contest: The contest will commence at 12:00 UTC on the Saturday and will end at 18:00UTC on the Sunday. It is recommended that the national societies will run their ATV contests at the same time as the IARU Region 1 ATV contest takes place.

Contacts: For contest scoring purposes a participating station may be worked or viewed only once on each band. A roving station is considered as a new station, every time it has changed its location.

Contest exchanges: The following information shall be exchanged during a contact:

• Four digit code. For each band used, a transmitting station shall transmit the four digit code that shall not change throughout the contest. Roving Stations that have changed their location should change their transmitted codes for each new location. There is no requirement for stations contacted to change their codes..
• THIS FOUR DIGIT CODE SHALL BE EXCHANGED IN VIDEO ONLY AND SHALL NOT BE TRANSMITTED BY ANY OTHER MODE THAN VISION.
• Call sign
• Vision report

• **IARU locator** (the location of the receiving or transmitting antennae does define the location of the station),

• Contact serial number, starting with 001 on each band used and increasing by one for each successive contact on that band, starting from one for the new log sheet in use by roving stations). Scoring. A two-way exchange of the four-digit code group by vision using a permitted transmission ATVmode together with the exchange of the other information shall score

RU locator (the location of the receiving or transmitting antennae does define the location of the station),
• Contact serial number, starting with 001 on each band used and increasing by one for each successive contact on that band, starting from one for the new log sheet in use by roving stations).

Scoring. A two-way exchange of the four-digit code group by vision using a permitted transmission ATV mode together with the exchange of the other information shall score

Band	Mults
50 MHz	2
435 MHz	1
1.3 GHz	1
2.3	2
3.4	2
5.7	3
10	3
24	6
47	8
76	8
122	10
134	12
241 and higher	14

If only one station received the four-digit code group, and the other information was exchanged, the scores for both stations shall be reduced by 50%. Note: for scoring purposes all valid contacts shall be deemed to have taken place over a distance of at least 5 kilometres, even if the two stations in contact have the same or adjacent IARU locators.

Scoring Sections: Two separated classes for each band : Single-site Stations and Roving Stations.

Entries: The entries must be set out on completed log files. A copy of the logs fils shall be sent to the national ATV Manager, national VHF Manager or the national Contest Committee, not later than the third Monday following the contest weekend. The submission of the logs files implies that the entrant accepts these contest rules. Stations in countries without national coordinators should send log files directly to atv@iaru-r1.org Judging of entries: The judging of the entries shall be the responsibility of the IARU Contest Manager, whose decision shall be final. Entrants deliberately contravening any of these rules or flagrantly disregarding the IARU Region 1 band plans shall be disqualified. Minor errors may result in loss of points. The claimed contact will be disqualified for an obviously wrongly stated locator, call sign, code number or a time error of more than 10 minutes Awards: The winner on each band and the overall leading station shall receive a certificate. The IARU Contest Manager may also send certificates to all entrants if they wish.

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3.PROCEDURE FOR ORGANISING IARU-R1 1 VHF/UHF/µWAVE CONTESTS

The organisation of the IARU contests have been changed during the IARU General conference in Landshut(2017).

It is proposed to create a team of experienced VHF contesters and contest robot owners/de-signers to define common checking rules for automatic contest adjudication applications.

3.1. Terms of reference for the contest working group

3.1.1. Objectives

- Organisation and conduct of IARU-Region 1 VHF/UHF/SHF contests including:
  - o Collecting logs
  - o Evaluating and judging of the received logs
- Publication of official results in a timely manner
- Preparation of awards and certificates
- Encouragement of new participants, modes, activity and use of the higher frequency bands
- Promotion of IARU-Region 1 VHF/UHF/SHF to encourage participation - by website and other means such as social media

3.1.2. Responsibilities

- To engage contesters both electronically and at major events such as Friedrichshafen where an annual forum and awards ceremony might occur
- To maintain and modify contest rules as appropriate
- To further develop contest organisation
- To decide when and how the changes to the contest rules and contest organisation would be implemented
- To maintain an appropriate 'Contesting Handbook' that would be the master refer-ence for theOrganisation and Rules of IARU Region-1 VHF/UHF/SHF Contests - including any directly associated procedures and items such as log file formats
- To arrange for contest information, rules and results to be easily found online
- To coordinate the development of the contest robot
- Annual budgeting and expenditure, in cooperation with the C5 Chairman. This budget needs to be approved by the EC.
- To provide a yearly report to EC
- To provide reports to C5 meetings
- To operate in an open and transparent way including:

o Regular consultation of contest managers and contesters
o Ensure that there is at least 6 months' notice period before any agreed contest rule changes are implemented
o In case of serious problems, appeals (or strategic issues), C5/EC would continue to be the arbiter

3.1.3. Group Membership

The Working Group consists of:
• C5 Contest Co-Ordinator
• C5 Chair
• up to seven additional ordinary members
• Members shall be active contesters. Of the ordinary members, at least one needs to be:
o Robot/IT expert
o VHF/UHF specialist
o Microwave specialist

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3.1.4. Actual membership

• C5 Contest Co-Ordinator : IV3KKW
• C5 Chair: PA2DW
• Project manager: PE1ITR
• Members: OE1MCU, OK1VAO, F5LEN, S53WW, OM3BH, HA0LC, G0FCT.

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3.2. Financing and management of the contest robot (VGC2020)

• The contest robot is operated by the ÖVSV for the IARU under Austrian law
• The programming will be continued by Indiware (Barbara Langwieser)
• We appoint PE1ITR from the C5CWG to the project leader and single contact person to Indiware for the necessary adoptions and improvements, within the approved budget.
• PE1ITR will provide a transparent system with a backlog and work list of all improvements and bugs.
• PE1ITR gets access to the technical specifications and structure of the current IARU Contest robot.
• PE1ITR bring in a request from CHF 2150,-- + CHF 2200,-- = CHF 4350,-- into the C2 meeting.
• The expectation is that is that an annual amount of CHF 2150,-- is needed that must be supported by the actual backlog and work list.
Sub-regional VHF/UHF/µWave contest coordination within IARU-R

3.3. Sub-regional VHF/UHF/µWave contest coordination within IARU-R1

It is recommended that the national and sub-regional activity contests rules should be complementary and that those contests should be open to all (National and International contesters) to encourage and promote activity on the VHF, UHF and SHF bands.
In order to avoid confusion and improve efficiency, the submission of contest entries shall be no later than the second Monday after the contest, which is in accordance with the rules approved by IARU Region 1.
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4. 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.
The contest managers share the QSO records in the logs for cross checking.
If it is not possible for an MS to organize this activity contests herself, she will at least advertise this activity in her publications.

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5. MGM CONTEST OPERATING PROCEDURES

5.1. Introduction

MGM is now a mainstream mode alongside SSB and CW for the exchange of contest in-formation,facilitated by the widespread and low cost availability of PCs and free soft-ware.

• The main purpose of this guide is to provide a protocol for the efficient exchange of con-testinformation when using MGM. However, you will not be penalised for using a differ-ent protocol solong as the complete contest exchange only takes place over the air.
• The protocol is an extension of standard meteor scatter procedures to include contest information, and the description is based around the standard WSJT-10 messages and modes (the most commonly used in contests), although the same messages may be used with other Machine Generated Modes such as PSK which are not included in the WSJT suite.
• This Guide does not describe the interconnections between PC and transceiver, since such information is readily available on the internet. All that is required is PTT control via the PC and line in/out connections for transmit and receive audio.
• This Guide does not describe how to set up or optimise the use of MGM software, nor does it compare the merits of different software applications.

5. What needs to be logged?

In VHF contests the following needs to be received over the air and logged accurately by both parties to a contest exchange:

- both calls
- report (as appropriate for the mode in use)
- Large Square Locator (4 digit e.g. IO91)

Serial number is not required

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6. VHF& UP TROPHY

C5CWG propose to use 2021 year to start to collect all the information needed, prepare the contest robot, then start with the official IARU Reg. 1 VHF & Up Trophy in 2022.

6.1. Objective

The main objective is to increase the contest activity during the entire year in all the IARU Region 1 countries on all the bands from 145 MHz to microwaves.

6.2. Dates and bands

- 1st weekend of March : 1st Subregional contest 145 MHz & Up
- 1st weekend of May: 2nd Subregional contest 145 MHz & Up
- 1st weekend of June : Microwave Subregional Contest 1296 MHz and up
- 1st weekend of July: 3rd Subregional contest 145 MHz & Up
- 1st weekend of September : IARU Region 1 145 MHz contest
- 1st weekend of October : IARU Region 1 UHF & Up Contest (435 MHz & up)
- 1st weekend of November : Marconi Memorial Contest 145 MHz (Only CW)

6.3. Rules

- The normal rules like described in the contest rules of the IARU Region 1 VHF Handbook (Part 3, Section

1) are applicable.
• If participating in the one of the contests in the list in multiple bands, a different log is needed per band.
• You need to participate on the same band and category on at least all the contests in the calendar except one.
• The final score is the sum of the points of each contest where the station participated.

6.4 Categories:

6.4.1. 144 MHz band:
• SINGLE (SO): single operator entries.
• MULTI (MO): multi operator entries.
• SINGLE LOW POWER (SO-LP): single operator low power entries.
• MULTI LOW POWER (MO-LP): multi operator low power entries.
• 6 HOURS (6H): 6 hours entries.

6.4.2. 435 MHz band:
• SINGLE (SO): single operator entries.
• MULTI (MO): multi operator entries.
• SINGLE LOW POWER (SO-LP): single operator low power entries.
• MULTI LOW POWER (MO-LP): multi operator low power entries.
• 6 HOURS (6H): 6 hours entries.

6.4.3. 1.3 GHz, 2.4 GHz, 3.4 GHz, 5.7 GHz, 10 GHz bands and for the Millimetre group (the combined group of amateur bands above 10 GHz):
• SINGLE (SO): single operator entries.
• MULTI (MO): multi operator entries.
In the IARU R1 Trophy the Overall category is not included

6.4.4. Stations eligible to win a prize

• The stations willing to win the VHF & Up Trophy must submit their logs individually to the IARU R1 Contest Robot not later than three days after the event (Wednesday 23:59:59 UTC); only these stations will be eligible to the victory and prizes

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7. ELECTRONIC CONTEST LOG EXCHANGE

7.1. Introduction

At its meeting in Vienna 1998 the VHF/UHF/Microwaves Committee has recommended the use of theElectronic Contest Log distribution format for the exchange of log information concerning IARU Region 1Contests. This recommendation has been endorsed by the IARU R1 EC at its 1998 meeting.The aim of the common file format is to make contest log programmers able to deliver a standard outputfile from their programs, to enable contest managers to receive logs via data transfer system (e.g.diskettes, Internet) introduce electronic log processing and ease submission for participants.What media to use is not specified, and is up to the contest manager. If Internet is a reliable medium it is agood choice, however, that does not solve yet the legal issue with the responsible operators signature yet
required for IARU Region 1 contests. When a contest manager invites to a contest she/he should state if electronic log submission is possible, in what way (e.g. INTERNET) and where (managers E-mail address), just like own mailing address. Contest managers must have a validation program to make a complete validation including cross checking etc.
Contest participants can use the electronic data file format to submit their logs to the contest manager in time. To be able to do this, participants must use a contest program capable of generating a REG1TEST file.

Note: Many logging programmes do not yet accept a non-numeric character for the T part of the report. Users shall check this according to the recommendation in section.

7.2.Logbook programs supporting EDI

- http://www.rudius.net/oz2m/taclog/
- http://www.ucxlog.org/
- http://www.win-test.com/
- http://lea.hamradio.si/~s52aa/vhfctest4win/
- http://saigacontest.gmxhome.de/
- http://www.n1mm.com/
- http://www.uba.be/sites/default/files/uploads/downloads/WinOnContest.zip
- http://www.ok2kkw.com/programs.htm
- https://www.ik3qar.it/software/qartest/it/download/
- http://tucnak.nagano.cz/old/tucnak1en.html

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7.3. Standard format for Electronic Contest Log Exchange (Vienna 1998)

Electronic Data Interchange - EDI-file format for contests in Region 1 above 30 MHz. This document is the specification for the Region 1 above 30 MHz contest file formats. Examples for commonly known contests are shown in the appendix. The aim is to make contest-log programmers able to deliver a standard (file) format from their programs, to enable contest managers to receive log data through various types of digital communication systems e.g. diskettes, e-mail, etc; for electronic evaluation purposes. (Prepared by: Bo Hansen, OZ1FDJ, Søren Pedersen, OZ1FTU)

7.3.1. Format

[REG1TEST;1]File identifier; file version
TName= Contest name
TDate= Beginning;ending date of contest
PCall= Callsign used
PWWLo= WWL used
PExch= Exchange used
PAdr1= Address line 1 from where the contest took place
PAdr2= Address line 2 from where the contest took place
PSect= Section in which station participates
PBand= Band used during the contest
PClub= Club station where points can be accumulated
RName= Name of responsible operator
RCall= Callsign of responsible operator
RAdr1= Address line 1 of responsible operator
RAdr2= Address line 2 of responsible operator
RPoCo= Postal code of responsible operator
RCity= City of responsible operator
RCoun= Country of responsible operator
RPhon= Phone number of responsible operator
RHBBS= Home BBS of responsible operator
MOpe1= Multi operator line 1
MOpe2= Multi operator line 2
STXEq= TX equipment
SPowe= TX power [W]
SRXEq= RX equipment
SAnte= Antenna
SAntH= Antenna height above ground level [m];height above sea level [m]
CQSOs= Claimed number of valid QSOs;Band multiplier

CQSOP= Claimed number of QSO-points
CWWLs= Claimed number of WWLs;Bonus per each new WWL;WWL multiplier
CWWLB= Claimed number of WWL bonus points
CExcs= Claimed number of Exchanges;Bonus per each new Exchange;Exchange multiplier
CExcB= Claimed number of Exchange bonus points
CDXCs= Claimed number of DXCCs;Bonus per each new DXCC;DXCC multiplier
CDXCB= Claimed number DXCC bonus
CToSc= Claimed total score
CODXC= Call;WWL;distanceBest DX contact
[Remarks]Remarks identifier
Remarks lines

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[QSORecords;Number of QSO records following]QSO records identifier;number of QSO records following Date;Time;Call;Mode code;Sent-RST;Sent QSO number;Received-RST;Received QSO number; Received exchange;Received-WWL;QSO-Points;New-Exchange-(N);New-WWL-(N);New-DXCC-(N);Duplicate-QSO- (D)

7.3.2. Explanation of keywords in header

Keywords are defined as the word in front of the actual argument. The keyword is separated from the argument with an equal sign (=).
[REG1TEST;1]
REG1TEST;1 is the file identifier and the file version. It serves as indicator for which format and version is being used and where data begins.
TName
Argument describes the name of the contest in which the station participated.
TDate
Arguments describe the beginning and ending dates of the contest. Arguments are separated with a semicolon (;). Arguments are written as YYYYMMDD.
PCall
Argument describes the callsign used during the contest.
PWWLo
Argument describes own World Wide Locator (WWL, Maidenhead, Universal Locator) used during thecontest. Maximum length is six characters.
PExch
Argument describes own Exchange during the contest. This can be any type of information, e.g. Province,DOK, County, State, Power, Name. Maximum length is six characters.
PAdr1
Argument describes the address of the QTH used during the contest, line 1.
PAdr2
Argument describes the address of the QTH used during the contest, line 2.

PSect
Argument describes in which section the station is participating. Synonyms to the meaning Asection@ are:
class, category, group etc.

Section	PSection
SINGLE SO,	SINGLE, SINGLE-OP
MULTI	MO, MULTI, MULTI-OP
6 HOURS SINGLE	SO-6H, SINGLE-OP-6H
6 HOURS MULTI	MO-6H, MULTI-OP-6H
SINGLE with MGM	SO-MGM, SINGLE-OP-MGM
MULTI with MGM	MO-MGM, MULTI-OP-MGM

PBand
Argument describe which band was used during the contest. Please note the bands and which frequency range they represent in the table below:

Frequency	*PBand*
50 - 54 MHz	50 MHz
70 - 70,5 MHz	70 MHz
144 - 148 MHz	145 MHz
430 - 440 MHz	435 MHz
1240 - 1300 MHz	1,3 GHz
2300 - 2450 MHz	2,3 GHz
3400 - 3600 MHz	3,4 GHz
5650 - 5850 MHz	5,7 GHz
10,0 - 10,5 GHz	10 GHz
24,0 - 24,25 GHz	24 GHz

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47,0 - 47,2 GHz	47 GHz
75,5 - 81 GHz	76 GHz
120 - 120 GHz	120 GHz
142 - 148 GHz	144 GHz
241 - 250 GHz	248 GHz

PClub
Argument describes the callsign of the radio club where operator(s) are member. Can be used if points are accumulated to the club etc.
RName
Argument describes the given- and surname of the responsible operator.
RCall
Argument describes the callsign of the responsible operator.
Adr1
Argument describes the address of the responsible operator, line 1.
RAdr2
Argument describes the address of the responsible operator, line 2.
RPoCo
Argument describes the postal code of the responsible operator.
RCity
Argument describes the city of the responsible operator.
RCoun
Argument describes the country of the responsible operator.
RPhon
Argument describes the telephone number of the responsible operator.
RHBBS
Argument describes the Bulletin Board System or electronic mail address of the responsible operator.
MOpe1
Arguments describe the operators participating in the contest, line 1. All arguments separated with a semicolon (;). Responsible operator is not needed in this argument.
MOpe2
Arguments describe the operators participating in the contest, line 2. All arguments are separated with a semicolon (;).Responsible operator is not needed in this argument.
STXEq
Argument describes the transmitting equipment used during the contest.
SPowe
Argument describes the transmitting power used during the contest, unit is Watt.
SRXEq
Argument describes the receiving equipment used during the contest.
SAnte
Argument describes the antenna system used during the contest.
SAntH
Arguments describe the antenna height above ground level and sea level, unit is meter. All arguments separated with a semicolon (;).
CQSOs
Arguments describe the claimed number of valid QSOs and the band multiplier. All arguments are separated with a semicolon (;).

CQSOP
Argument describes the claimed total number of QSO-points. The format does not specify that QSO-points can only be based upon distances.
CWWLs
Arguments describe the claimed number of WWLs worked, the number of bonus points claimed for each new WWL and the WWL multiplier. All arguments are separated with a semicolon (;).

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If no bonus points are claimed then bonus points per each new WWL are set to zero (0). If no multiplication is used for each new WWL the multiplier is set to one (1).
CWWLB
Argument describes the claimed total number of WWL bonus points.
CExcs
Arguments describe the claimed number of Exchanges worked, the number of bonus points claimed for each new Exchange and the Exchange multiplier. All arguments are separated with a semicolon (;). If no bonus points are claimed then bonus points per each new Exchange are set to zero (0). If no multiplication is used for each new Exchange the multiplier is set to one (1).
CExcB
Argument describes the claimed total number of Exchange bonus points.
CDXCs
Arguments describe the claimed number of DXCCs worked, the number of bonus points claimed for each new DXCC and the DXCC multiplier. All arguments are separated with a semicolon (;). If no bonus points are claimed then bonus points per each new DXCC are set to zero (0). If no multiplication is used for each new DXCC the multiplier is set to one (1).
CDXCB
Argument describes the claimed total number of DXCC bonus points.
CToSc
Argument describes the total claimed score. The format does not specify how the total score is calculated.
CODXC
Arguments describe the claimed ODX contact call, WWL and distance. All arguments are separated with a semicolon (;).
[Remarks]
The [Remarks] identifier is used to mark where the Remarks begins. All lines following, until [QSORecords;Number of QSO records following], are remarks. If no remarks are written identifier must still be present.
Remarks lines
Remarks lines are where the station may write comments to the test. The number of lines is variable. All lines in between [Remarks] and [QSORecords;Number of QSO records following] are remarks.
[**QSORecords**;Number of QSO records following] The [QSORecords;Number of QSO records following] is the QSO record identifier used to mark where
QSO records begins, and how many consecutive QSO records to follow.

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7.3.3. QSO record definition

Date;Time;Call;Mode code;Sent-RST;Sent QSO number;Received RST;Received QSO number;Received Exchange;Received-WWL;QSO-Points;New-Exchange-(N);New-WWL-(N);New-DXCC-(N);Duplicate- QSO-(D) All arguments are separated with a semicolon (;).All fields in the QSO record is written on the same line, and ending with ASCII characters 13 and 10 (CR LF).

Field	*Content*	*Maximum*
Date	YYMMDD, 6 characters	6
Time	UTC, 4 characters, with leading zeros	4
Call	3 to 14 characters	14
Mode code	0 or 1 character	1
Sent-RST	0 or 2 or 3 characters	3
Sent QSO number	0 or 3 or 4 characters, with leading zeros	4
Received-RST	0 or 2 or 3 characters	3
Received QSO number	0 or 3 or 4 characters, with leading zeros	4
Received Exchange	0 or 1 to 6 characters (see also PExch)	6
Received WWL	0 or 4 or 6 characters, World Wide Locator	6
QSO points	1 to 6 characters, including bandmultiplier	6
New-Exchange	0 or 1 character, "N" if QSO is a new exchange	1
New-WWL	0 or 1 character, "N" if QSO is a new WWL	1
New-DXCC	0 or 1 character, "N" if QSO is a new DXCCL	1
Duplicate-QSO	0 or 1 character, "D" if contact is a duplicate QSO	1

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+ field separators, 14 = 75

Mode code

The mode code is used to show which modes were used for the QSO. Below is a list of the code with corresponding modes.

Mode code	TX mode	RX mode
0	none of below	none of below
1	SSB	SSB
2	CW	CW
3	SSB	CW
4	CW	SSB
5	AM	AM
6	FM	FM
7	RTTY - MGM	RTTY – MGM (Varna 2014)
8	SSTV	SSTV
9	ATV	ATV

If the mode is not important it can be left blank, i.e. not stated in rules/invitation.

7.3.4. Characters

Used characters are in accordance with the 7-bit ASCII alphabet and only characters with the following decimal number are allowed 10, 13, 32-127.

7.3.5. Line length

If line length is already specified it must not be exceeded, other lines must not exceed a length of 75 characters. Length is limited due to Packet Radio transferral.
All lines, in the format description, with the "F" denote that entry is a free format. This means that any of the above characters in the 7-bit ASCII alphabet can be used.

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All other entries are forced format and characters, as above, are in capital. All numbers in forced format are positive integers and non-exponential notation and entry cannot be left empty, i.e. 0 (zero) or greater. All forced formats must be in accordance with SI-units (Système International).

7.3.6. Separator (;)

This separator semicolon (;) is written to separate multiple information on same line. If the format is used for a contest which does not use some of the QSO exchanges, i.e. QSO no., WWL and Exchange, these fields are left blank. Proper interpretation must be ensured by manager program.

7.3.7. Faulty QSOs

A duplicate QSO is marked with a "D" in the Duplicate-QSO field, and the QSO-points field is set to 0 (zero). The format does not define when a QSO is a duplicate. An incomplete QSO is written with the information received, and the QSO-points field is set to zero (0). In case of a mistake, an error mark must be inserted in the Callsign field to keep a correct flow in the number of QSOs records. The error mark must be an "ERROR" and the other fields except Time and Sent QSO no., if used, can be left empty. In case the empty field is accumulated, e.g. QSO-points, it is set to 0 (zero).

7.3.8. QSO numbers

The format does not define in what order the QSO numbers must be listed. It is possible to use the format to submit logs for contests requiring consecutive numbers for all QSOs, even if they are on different bands.

7.3.9. Missing information

If a contest log program cannot fill in all the information, the missing information can be left blank, except if information is needed for claiming/calculating scores, e.g. log program cannot identify WWLs, DXCCs etc. If the information is required for the scores this log program cannot be used for this particular contest anyway.

The following section describes different EDI-files for various commonly known contest types.

7.3.10. Example: Region 1 Contest, standard type

```
[REG1TEST;1]
TName=IARU Region 1, March contest VHF
TDate=19950304;19950305
PCall=OZ1FDJ
PWWLo=JO65FR
PExch=
PAdr1=Herlevgaardsvej 32 A, st. tv., DK-2730 Herlev
PAdr2=
PSect=Multi operator
PBand=144 MHz
PClub=OZ2AGR
RName=Bo Hansen
RCall=OZ1FDJ
RAdr1=Herlevgaardsvej 32 A, st. tv.
RAdr2=
RPoCo=DK-2730
RCity=Herlev
```

RCoun=DENMARK
RPhon=(+45) 42 91 53 98
RHBBS=OZ6BBS

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MOpe1=OZ1FTU
MOpe2=
STXEq=FT-225RD+MRF247
SPowe=90
SRXEq=FT-225RD+MuTek+BF981 1,5 dB NF
SAnte=9 elements OZ5HF
SAntH=14;41
CQSOs=24;1
CQSOP=11579
CWWLs=19;0;1
CWWLB=0
CExcs=0;0;1
CExcB=0
CDXCs=7;0;1
CDXCB=0
CToSc=11579
CODXC=OY9JD;IP62OA;1302
[Remarks]
Nice with the Aurora, made it possible to work more than usual
in a 24 h contest. Nice to hear Jon (OY9JD) again, but, many
stations calling so no time for chat.
Besides the Aurora there was only little activity, as usual, in Scandinavia.
[QSORecords;26]
950304;1445;OZ9SIG;1;59;001;59;006;;JO65ER;6;;N;N;
950304;1446;DL5BBF;1;54;002;59;023;;JO42LT;396;;N;N;
950304;1449;OZ1HLB/P;1;59;003;59;015;;JO55US;48;;N;;
950304;1450;DL6FBL;1;53;004;51;092;;JO40XL;608;;N;;
950304;1454;DF0TAU;1;54;005;59;084;;JO40QO;606;;;;
950304;1508;DJ3QP;1;55;006;59;095;;JO42FB;485;;;;
950304;1510;DG5TR;1;53;007;53;006;;JO53QP;242;;N;;
950304;1519;DL0WU;1;55;008;53;108;;JO31OF;609;;N;;
950304;1528;DL3LAB;1;59;009;59;046;;JO44XS;191;;N;;
950304;1532;DL5XV;1;56;010;59;033;;JO53AO;283;;;;

950304;1544;OZ8RY/A;1;56;011;57;010;;JO66HB;39;;N;;
950304;1553;OZ1AOO;1;59;012;59;001;;JO65FR;1;;;;
950304;1603;ERROR;;;013;;;;;0;;;;
950304;1618;DL0WX;1;53;014;52;174;;JO30FQ;688;;N;;
950304;1626;SM4HFI;2;53A;015;54A;019;;JP70TO;573;;N;N;
950304;1631;GM4YXI;2;57A;016;55A;015;;IO87WI;911;;N;N;
950304;1636;OH2AAQ;2;52A;017;59A;015;;KO29FX;851;;N;N;
950304;1640;OH2BNH;2;55A;018;57A;024;;KP20LG;891;;N;;
950304;1641;LA2AB;1;59A;019;57A;027;;JO59FV;479;;N;N;
950304;1646;SM5BSZ;2;55A;020;57A;029;;JO89IJ;480;;N;;
950304;1700;SK5BN;2;51A;021;55A;026;;JP80UE;585;;N;;
950304;1720;DL9LBA;2;529;022;559;056;;JO44UP;213;;;;
950304;1730;SK6NP;2;559;023;539;029;;JO68MB;262;;N;;
950304;1736;OH1MDR;2;52A;024;57A;023;;KP01VJ;830;;N;;
950304;1739;OY9JD;2;51A;025;52A;011;;IP62OA;1302;;N;N;
950304;1826;OZ9SIG;1;59;026;59;006;;JO65ER;0;;;;D

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7.3.11 **Example** :

AGCW DL VHF Contest (contest manager: DJ2QZ)
[REG1TEST;1]
TName=AGCW contest 2 m
TDate=19950318;19950318
PCall=OZ1FDJ
PWWLo=JO65FR
PExch=C
PAdr1=Herlevgaardsvej 32 A, st. tv., DK-2730 Herlev
PAdr2=
PSect=C
PBand=144 MHz
PClub=OZ2AGR
RName=Bo Hansen
RCall=OZ1FDJ
RAdr1=Herlevgaardsvej 32 A, st. tv.
RAdr2=

RPoCo=DK-2730
RCity=Herlev
RCoun=DENMARK
RPhon=(+45) 42 91 53 98
RHBBS=OZ6BBS
MOpe1=
MOpe2=
STXEq=FT-225RD+MRF247
SPowe=90
SRXEq=FT-225RD+MuTek+BF981 1,5 dB NF
SAnte=9 elements OZ5HF
SAntH=14;41
CQSOs=24;1
CQSOP=11579
CWWLs=19;500;1
CWWLB=9500
CExcs=3;0;1
CExcB=0
CDXCs=7;0;1
CDXCB=0
CToSc=11579
CODXC=OY9JD;IP62OA;1302
[Remarks]
Nice with the Aurora, made it possible to work more than usual.
Nice to hear Jon (OY9JD) again, but, many stations calling so no time for chat.
Besides the Aurora there was only little activity, as usual, in Scandinavia.
[QSORecords;26]
950318;1600;OZ9SIG;2;599;001;599;006;B;JO65ER;6;N;N;N;
950318;1602;DL5BBF;2;549;002;599;023;C;JO42LT;396;N;N;N;
950318;1607;OZ1HLB/P;2;599;003;599;015;C;JO55US;48;;N;;
950318;1609;DL6FBL;2;539;004;519;092;C;JO40XL;608;;N;;
950318;1614;DF0TAU;2;549;005;599;084;B;JO40QO;606;;;;
950318;1618;DJ3QP;2;559;006;599;095;C;JO42FB;485;;;;
950318;1625;DG5TR;2;539;007;539;006;A;JO53QP;242;N;N;;
950318;1628;DL0WU;2;559;008;539;108;C;JO31OF;609;;N;;
950318;1630;DL3LAB;2;599;009;599;046;C;JO44XS;191;;N;;
950318;1632;DL5XV;2;569;010;599;033;C;JO53AO;283;;;;
950318;1644;OZ8RY/A;2;569;011;579;010;A;JO66HB;39;;N;;
950318;1653;OZ1AOO;2;599;012;599;001;A;JO65FR;1;;;;
950318;1703;ERROR;;;013;;;;;0;;;;
950318;1718;DL0WX;2;539;014;529;174;C;JO30FQ;688;;N;;
950318;1726;SM4HFI;2;53A;015;54A;019;C;JP70TO;573;;N;N;
950318;1731;GM4YXI;2;57A;016;55A;015;C;IO87WI;911;;N;N;

950318;1736;OH2AAQ;2;52A;017;59A;015;C;KO29FX;851;;N;N;

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7.4 AUTOMATIC CONTEST ADJUCTION SOFTWARE

In this section we will explain the working of the contest robot and give guidelines for other member societies who want to make their own contest robot. (Vienna 2016)

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