Ham RADIO News

Newsletter of the Amateur Radio Society of India (Indian Affiliate of IARU)
July 2019 Issue

When all else fails, there is Ham Radio!

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President's Message

On June 7th this year a momentous notification was issued by WPC doing away with the onerous requirement of taking prior permission to operate our radios from any place other than the address given in our license.

ARSI has been approaching WPC for almost a decade to change this regulation which is not there in other countries.

A meeting with the Secretary Telecom a few weeks earlier finally bore fruit as positive action was taken and the notification issued that, apart from a few especially notified areas, Indian radio amateurs could operate from anywhere in India.

This means ability to carry our equipment wherever we go, fit radios into our vehicles, conduct Field Days and Hilltopping exercises without applying for or taking prior permission. This brings us in line with other countries where no such restriction was in place. This also makes us be ready at all times to help out in times of emergencies.

A couple of years ago we were also able to get the onerous and time consuming process of security clearance before issue of licenses also removed. New licenses are now being granted after ASOC qualification, in a matter of weeks, unlike earlier years, and sometimes never, as the paperwork was lost!

These two were major achievements removing unwarranted restrictions on amateur radio operation and development in India.

The NFAP also opened up several new bands to us amateurs. While there are some anomalies which we are working on, it pretty much brings us on par with other countries in IARU Region 3.

These are major achievements of ARSI

At the end of July the AGM of ARSI will take place in Bengaluru and a fresh set of Office bearers will take charge. As there were only as many nominations as vacancies, no election is required.

After being on the Governing Council for more than 15 years and later as President since 2006, I decided that I would not like to continue any further.

OM Ramesh Kumar, VU2LU, who has been on the GC for several years in different positions, will be unanimously elected as your President for the next 2-year term, and I am sure he and his co-members on the GC will receive your unstinted support in furthering the work of ARSI in the coming years.

The main requirement is to increase membership and I am sure the incoming GC will address this vital need. Unfortunately the bulk of licensed amateurs in India do not see the need to support ARSI and its work by joining and seem to feel that *"someone will spend their money and take care of it - so why should we bother to join?"*

This will be my last message to you as President and I would like to express my sincere thanks to everyone who worked with me in moving ARSI forward. There were some achievements but a lot more has to be done.

Good luck to all of you.

73

Gopal Madhavan VU2GMN

From the Editor's desk

Hearty congratulations to the new ARSI Team and my best wishes. I am sure we will continue the great job carried out by the old Team.

Due to the tireless efforts of our president Gopal VU2GMN - and his team, the WPC has finally permitted us to operate field days, demonstrations, and other such remote operations without having to apply for special permission. This makes it so much easier for us to promote this fascinating hobby by holding demos at schools, colleges and such other locations.

As a consequence, we may need to gear up to be able to hold Morse and theory classes for the aspirants. I am sure the Secretary has plans to arrange that - and more.

As usual, Ham Radio went to the rescue when Rajesh VU2EXP and his niece Shyama VU3WHG set up an emergency communication station at Porbandar on a request from the Gujarat Police when the cyclone VAYU was expected to hit the coast. A report from Rajesh is included in this issue.

The Sun is quiet - a total of 109 days *or 61%* of this year have been without any sunspots. Band conditions continue to be poor with sporadic openings on 20 and 15 during late evenings. 40 meters has been dead for long now – affecting the various nets and ragchews while the 80 meter net on 3600 at 7:15AM seems to be catching up.

73, de Ganesh VU2TS

ARSI - ELECTIONS-2019:

The following members, nominated for the posts of President, Vice-President, Treasurer, Secretary, and the Governing Council, were elected unopposed, to the respective posts.

President:	K G Ramesh Kumar VU2LU
Vice President:	G.Saravanan VU2ETS
Secretary:	Govind Girimaji VU2GGM
Treasurer:	R. Krishna Kumar VU3UNO

Governing Council Members

Ramiah Ramachandra	VU2RCR
Huzefa H. Merchant	VU2HIT
Jatin H. Shah	VU2KWJ
Sanjay Madhavan	VU2SJD
S.Venkatesh	VU3IMV
M.T.Kesari	VU2MTK
R.Sarath Babu	VU3RSB

Best wishes to the new ARSI Team!

Hams provide communications during the recent cyclone VAYU crisis in Gujerat

During recent VAYU Cyclone crisis around Gujarat coast, I, Rajesh Vagadia VU2EXP, and Shyama Vagadia VU3WHG (my niece) were deployed to Porbandar for Ham Radio Emergency Communication service. The Gujarat Police & Divyabhakshar invited us for EmCom services.

We were deployed on short notice to Porbandar on the evening of 12th June 2019. Early next morning we installed HF/VHF Antenna & Radio setup. I had included digital communication setup also in my gear, for studying its effectiveness during such emergencies. Our operating plan & frequency usage were co-ordinated with GIAR & ARSI.

In spite of poor propagation, we were able to establish successful radio contacts with various cities across the country, including Gandhinagar, Ahmedabad, Surat, Rajkot, Mumbai, Kolhapur, and Thrissur. Good number of hams made contacts with us and were standing by on our emergency frequency for assistance. Periodically, we updated our activities with ARSI, GIAR, Police department, the National Disaster Relief Force, the weather forecasters and the media.

We handled a number of enquiries over phone and social-media; as the mobile network & electricity were available most of the time. Fortunately the cyclone VAYU changed its course and the landfall didn't hit the coast of Gujarat, and finally the situation was declared safe.

We observed commendable safety measures and the action taken by the authorities and the other rescue agencies during the entire period.

After the situation was declared normal & safe, we returned to Rajkot on midnight of 13th June 2019.

It was a great learning experience for us on all aspects of preparedness, installation, operating, and coordination with the others. We were fortunate to to get this opportunity to offer a bit of our contribution to the society.

I am thankful to Addl. DGP Shri Sanjay Srivastava Sir, SP Porbandar Shri Parth Gohil Sir, Ranparia Sir (Wireless PI), Shri Pravinbhai Valera VU2CPV (GIAR) & Divyabhakshar group for extending full support.

Thanks & 73,
Rajesh Vagadia VU2EXP
Rajkot - Gujarat (India)

GWALIOR, MADHYA PRADESH

Role of Ham Radio during Disasters

A program was organized in LNIP College, Gwalior where Jayu VU2JAU gave a presentation on the role of HAM Radio during disasters, on 10 June 2019 from 2.00 pm to 5.00 pm. Thirty six Professors from AMITY University Gwalior attended the program. Everyone showed keen interest. Many have shown their interest to appear in the HAM Radio license examination and asked questions about it. A demonstration of the use of VHF handies and proper operating procedure was also given. It was very nice gathering of learned people from great University.

The second session on the Role of Amateur Radio during Emergency and Disaster in LNIP, Gwalior was conducted on Friday 14 June 2019 where more than thirty professors of AMITY University Gwalior and outstation attended the program.

It was explained to them that what HAM Radio operators can do in most difficult situation during disaster including handling the different types of massages and agencies at the same moment. It was also explained to them that what are the other activiries Amateurs can do including satellite communication and the different types of satellites like weather, communication and many more.

The use of ISS for HAMs was also explained. A practice session of speaking on handy was organized, to pass on the massages in minimum time. A basic knowledge of Morse code was also given to them showing the importance of Morse code in communication. All of them too very keen interest and have shown their interest to obtain amateur licences.

A special meeting of the Amateur Radio Club Gwalior was organized on the evening of 2nd May 2019, at Shri Sant Kripalsingji Ashram. Om Jayu VU2 JAU was master of ceremonies.

Om Harsh Chaturvedi VU2HRR, Secretary, welcomed all the members. Jayu VU2JAU briefed the members about the past activities and future plans. Since our past club president left permanently, he proposed that Shri Sant Kripalsingji VU3ODA for the post of president, all the members approved it.

Members who attended the meeting were OMs Subodh VU3UTS, Durgesh VU3DUB, Tuniya VU3TNG, Ashok Bhatnagar VU3YAF, and SWLs Chaturbhuj Makhija and Amit Agrawal. It was also discussed to do more activities on HAM Radio in near future. In the end he gave an acceptance speech. Om Kailash VU3CTP gave vote of thanks. The meeting adjourned with snacks and tea.

PUNE, MAHARASHTRA

Role of Ham Radio in Disaster Management

The monthly eyeball QSO of Pune Hams was attended by 27 Hams and SWLs on Sunday, 5th May 2019. The **students from MIT COEP** joined the meet to understand Ham Radio. They have ambitious plan of launching their own Satellite. Pune Hams assured the students the required support

The theme of the meet was ***Role of Ham Radio in disaster management*** with special focus on recent cyclone **FANI in Odisha**

The meeting started with presentation by **Dr Jevanp akash Kulkarni,** formerly of the Indian Meteorological Deptt., Pune. He presented a detailed history of various cyclones, and the pre and post cyclone activities with very good slides. The IMD. predictions of recent FANI cyclone were very accurate. Hence the Odisha government could take timely measures and avoid casualties by timely evacuation of people. The entire world appreciated the Government's efforts in Disaster management. The Q&A session was very interesting.

Pune Hams plan to visit IMD office and lab to understand various facilities very shortly.

Mr Milind Vaidya, VU3MOU, the director introduced the NGO - **All India Institute of Local Self Development. Pune** and their role in disaster management. He added, with associations of Pune Hams their activities will be strengthened with radio communication during disaster mitigation. Pune Hams too appreciated Mr Milind Vaidya's offer and support in all respects

Milind Patil VU3MOU also introduced the new FT8 digital mode with details.

Pranit VU3IMB and SWL Rahul demonstrated **Fox operation** for proposed Fox hunt on 19th May 2019. The Fox Hunt will be sponsored by Ocean Cadet Academy's summer camp. A day long event is planned at Camp site near Chikhli 30 Kms from Pune.

Mr Dilip Bapat VU3UEL and SWL Aphale demonstrated recently bought SSB portable Receivers for monitoring Ham bands. VU3YBU OM Shripad demonstrated his web Radio...Radio Shripad

The meeting ended with snacks and Tea.

Pune Hams thank All India Institute of Local Self Development. Pune for all the efforts taken for making the Eyeball QSO meet a grand success.

We have a daily morning VHF net on Repeater VU2ETD 144.800 (Simplex and Negative Shift repeater frequency) from 08:15-08:30 Hrs everyday morning, and evening 20:30 / 21:30 Hrs onward since last one year. **The Net controller is VU3YBY OM Shripad Kulkarni.**

The Repeater is on 24 x 7. The Repeater is installed by Ajinkya DY Patil University VU2DYP near Pune Airport.

Pune Hams meet every first Sunday of the month 10:30 AM for EYEBALL QSO

The Fox Hunt

Pune Hams organised Fox Hunt on Sunday 19th May 2019 in Ocean Cadet Academy's annual 10 days Camp at Chikhli, 30Kms away from Pune..The Academy is run b SWL Gopi Shetty and his xyl Gauri Shetty. Gauri recently cleared ASOC Exam and waiting for the ticket.

Ocean Cadet Academy run training courses for age group 12-18 yrs. The course duration is 4 yrs. It operates every Sunday for aspirants of Indian Navy, Army and Air force.

This year's Annual Training Residential Camp is scheduled at Dadamaharaj Natekar Vrudhashram, Chikali from 12 may to 21 may 2019. Pl visit following web site for more details. ***www.oceancadetacademy.org***

Fox Hunt Theme

We renamed fox hunt as a Military operation. The Fox was the **enemy observation post** that was transmitting observations to the HQ. The Fox Hunt exercise was the detection of enemy location through radio signal by Radio Direction Finding Technique.

More than 100 cadets participated and thoroughly enjoyed searching and finding the enemy observation post.

The 20mW Fox was specially developed for the event using Raspberry Pie with Mobile Power bank as power source by OM Mangesh VU3OUM within one day. It was transmitting MP3 message for two minutes and resting for 3 minutes. The antenna used was Telescopic.

The 3 element Tape Yagi Antennas made last month's workshop/meeting were used by batch of 5 Cadets. Thanks to OM Pranit VU3IMP for the well made Antennas. Every one got opportunity to participate. The winners were very much excited and developed interest in Ham Radio. The Ocean Cadet Cadet Academy will conduct ASOC classes very shortly and at least 50 Cadets will participate.

VU2VPR OM Vilas gave Introduction to Ham Radio and explained role of Hams in society. How to become Ham was explained in details with Q&A.

SWL Sahil gave presentation on Drones, and gave a demonstration by flying a mini Drone. The cadets shown keen interest in working of drone.

The following Hams participated in the Fox Hunt

VU2VPR – Vilas. VU3OUM – Mangesh, VU3BQB- Milind, VU3YWP - Kute Patil, VU2FXD - George, VU2DVW Deepak Zemse, VU3UJO – Koustubh, SWL Sahil Drone Flyer.

ANTENNA WORKSHOP

The VHF Tape Antenna Workshop organised by Pune Hams on 7th April 2019 had overwhelming response from 16 Hams and SWL participating.

OM Pranit VU3IMB, a new licencee, a Banker by profession, conducted the said workshop for 2 Hrs with 10 Kits prepared by himself. Hats off to the Pranit for such a neat and professional

Two callsign holding teachers from Pawar Public School (PPS) VU3OSG OM Prashant and VU3XDK OM Samiran joined the workshop and learnt VHF Antenna tuning. The Daiwa VHF/UHF SWR meter and MFJ Antenna Analyser were used for proper Antenna tuning. OM Milind VU2MSB demonstrated the proper tuning of the VHF tape Antenna and brought down the SWR to 1:1.3. It was very good learning session for the new hams.

US Ham Sean Kelly W5SPK joined the workshop and shared the activities of local Ham club and their newsletter. OM Sean shared about recent hell storm and how Hams handled the situation maintaining good vhf communication. He appreciated the efforts of Pranit VU3IMB who created the Tape Antenna kits. OM Sean gifted Pranit 3 latest QST magazines as a token of appreciation.

OM Sean will be back in India in June 2019 to share more technical presentations.

***The World Ham Radio day* was celebrated by Pune Hams at *Pawar Public School* Hinjajwadi Plase III - Pune**

More than 100 students, parents and teachers participated in this exciting event. Pawar Public School is the first school in Maharashtra which has a modern HAM Radio Center with four teachers having the license to operate HAM Radio Equipment*.

In this program, focus was given on teachers & students participation in schools under ***Make In India & Skill Development*** missions. In every school and college, guidance will be given by Pune Hams for starting a 24 hours working laboratory with HAM Radio Club. **HAM Radio is included in the CBSE school syllabus for 9th standard.**

Prashant, VU3OSG - Computer teacher, introduced chief guest *Mr Vishwas Kale* to the august gathering.

VU2VPR Vilas welcomed all on behalf of *Pune Hams* for proposed celebrations and introduced the topic *Radio Yesterday, Today & Tomorrow* and it's relevance to Ham Radio. The video about Morse Code was shown and students were taught 7 alphabets on Morse. It was most exciting and participated event.

OM Mangesh VU3OYM gave a demo of Ham Radio communication on VHF. Few students gave modulation test and got excited about this truly scientific Hobby. Mangesh proposes to teach digital communication focusing on FT8 mode for school Ham Teachers shortly.

SWL Vishwas Kale, *Electronic Engineer and Businessman* gave very interesting presentation with collection of rare photo about Radio history. The evolution of communication, Radio Technology and it's exciting journey motivated most of the participants. The Q&A session exceeded time limit, indicating the success of the presentation by SWL Vishwas.

Physics Teacher and YL Ham Priyanka Singh VU3UIS gave excellent presentation on *What is Ham Radio* and how to start this hobby. Lot of students have already enrolled and preparations have started for ASOC exam. **Pune Hams promised school principal to extend full support for activities planned*. Priyanka said ,* HAM Radio is a worldwide scientific hobby. Millions of people

in the world communicate with each other everyday using HAM Radio Equipment. They share and exchange information about different projects and experiments.

In this hobby, people of different age groups take part - from a 12 year old young child to grandpa and grandma. *The hobby helps to achieve skill development along with deep scientific knowledge*.

The school principal proposed vote of thanks.

Each year brings new enthusiasm to Contester's world. While, I am still awaiting for nominations for other awards which are based on the nomination and supporting data, It is my pleasure to announce "The BigCQ Award" winner for 2019 based on the CQ contest record for 2018 published at CQWW.com/CQWWRTTY.com website and minimum scoring requirements mentioned at http://arsi.info/the-bigcq-award-for-cqww-contest

Please join me in congratulating **VU2ZMK - Mahendra Kannavar** as winner of BigCQ award for his Rookie entry performance. We wish him many more great scores ahead from his Goa QTH! . Uniquely designed plaque will be sent to him in next couple of weeks.

This year, plaque for this award is sponsored by VU2LBW Lakshman 'Lucky' Bijanki. Thank you Lucky for your kind gesture.

The VU2AJ Contester Of The Year 2019

It is my pleasure to announce **VU2IBI Prakash** as winner of VU2AJ Contester of the Year"" 2019.

Following is the score table maintained and submitted by Prakash. Congratulations Prakash for this consistent performance, I wish all the best in 2019 as well.

2018	VU2IBI			
	QSO's	Score	Weitage	Weightage points
CQ-WPX-RTTY	83	16415	0.4	33.2
CQ-WPX-SSB	114	21328	0.4	45.6
CQ-WPX-CW	0	0	0.4	0
AA-CW	0	0	0.4	0
AA-SSB	148	16280	0.4	59.2
IARU-HF	11	264	0.4	4.4
CQ-40M SSB	22	22	1.0	22.0
CQ-40M-SPRINT	3	12	1.0	3.0
CQ-WW-RTTY	336	121407	0.6	201.6
CQ-WW-SSB	134	33695	0.6	80.4
CQ-WW-CW	140	35369	0.6	84
	991	244792		533.4

Award Stats:

1. VU2AJ Contester of the year : # of nominations received 1 , winner announced 1 (VU2IBI)

2. Young Contester of the Year: # of nominations received **0**

3. VU2VWN Homebrewer of the Year: # of nominations received **0**

4. BigCQ Award: Auto qualification based on CQWW records website- 1, Awarded 1 (VU2ZMK)

Upcoming ARSI Contest/ participation :

IARU Contest - July 13th/14th

CQVU 40 mixed Sprint - August 15th

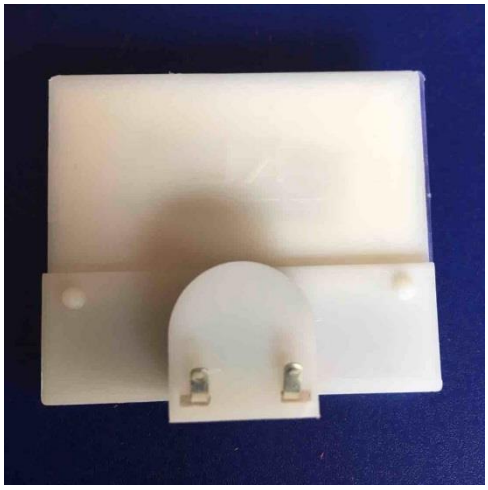
73, de VU2XE Kiran
Contests and Awards Manager ARSI

Digital S-meter

By Daniel Romila VE7LCG

When building or modifying radio amateur equipment many times it is useful to have an indication of the strength of a certain signal – generally referred as S-meter in the case of receivers.

The immediate solution for the hobbyist is to use an analogue mechanical instrument. They are available in different sizes and sensitivities. They look nice on the panel. Cheap plastic such instruments can be bought with around 2.00 CAD:



Once such instrument was selected with more than sufficient sensitivity it is easy to put in series and in parallel resistors, in order to meet the exact necessity for that circuit sensitivity and range. 50 micro amps sensitivity instruments are available, but for around 5.00 CAD. They can be already marked as voltmeters and modified internally by the manufacturer/seller by having a resistor in series with the ammeter.

The main problems with such instruments are their size and their mounting on the panel. When seeing the back of such instrument, one can understand the effort required to cut the panel and mount the instrument, effort that will require more than a drill machine and easy to use small drills.

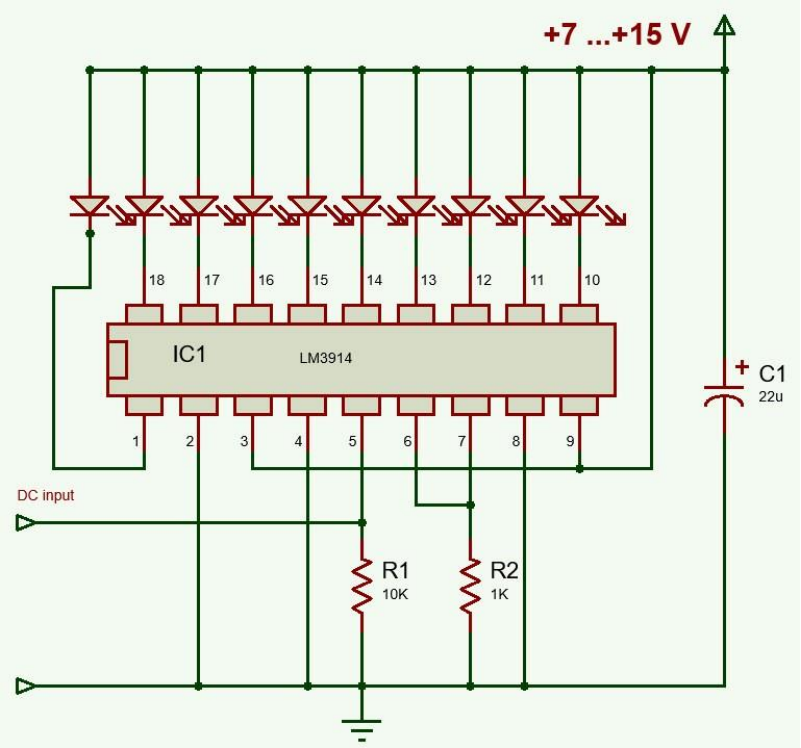
The digital solution was widely exploited in the disco music period, when many LEDs were lightening the life of listeners in the shape of VU-meters and all kind of fun panels.

I researched what kind of dedicated integrated circuits are available to buy now, in 2018. I had in mind:

- Price
- Range of power supply voltage – to work for sure at 12 V, but it would also be nice if they can work at 5 volts or even 3 Volts.
- Sensitivity – to be able to see some indication starting somewhere at 200 millivolts DC, or better

- A good range of values indicated, at least 5 LEDs but 10 LEDs would be better (if I do not need 10 I can always let them disconnected).
- To be easy to use and reliable.

I selected the integrated circuit LM3914. It costs around 0.2 CAD. It can drive 10 LEDs, in bar or graph display. The power supply can be from 3 Volts to 25 Volts. It accepts input over-voltages plus minus 35 Volts. It is good to know it cannot be easily damaged. In a simplest use it requires just 2 resistors, the 10 driven LEDs and a capacitor between the plus and the ground:

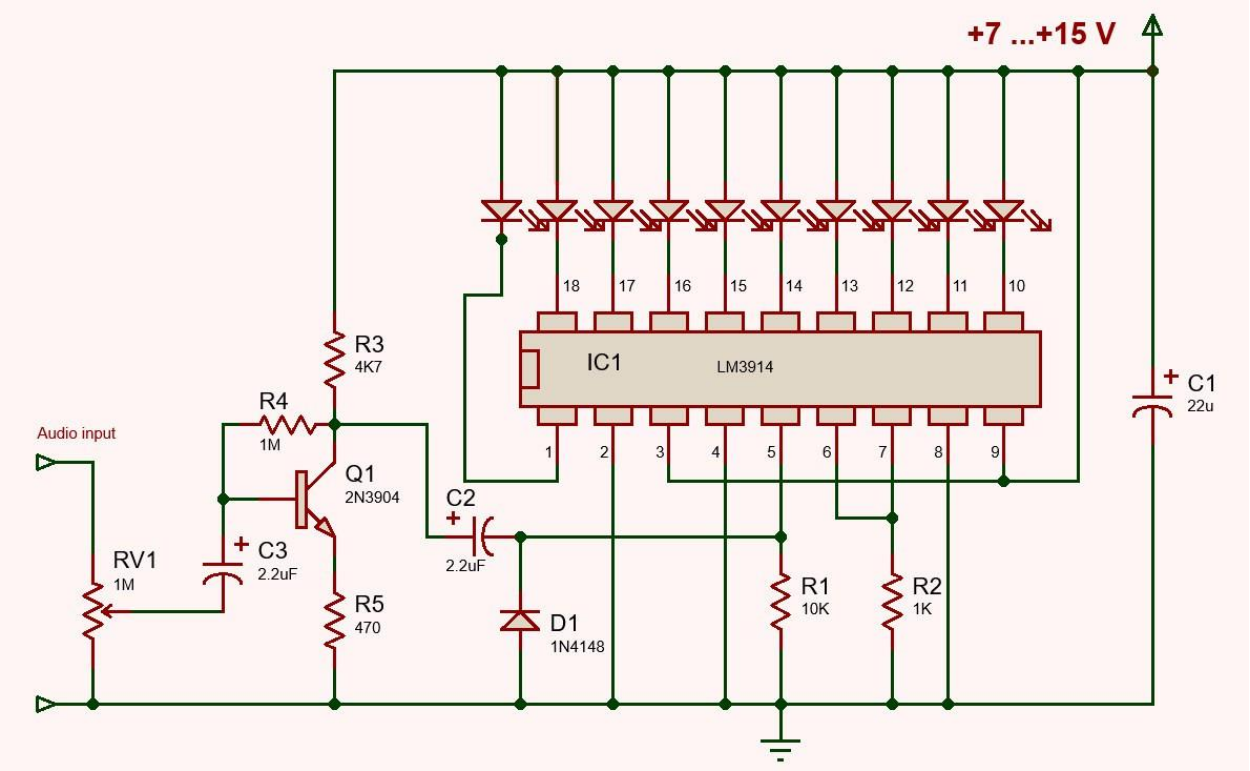


In my built the power supply can range from 7 to 15 Volts without seeing changes in the LEDs light intensity. According to the IC datasheet the current is dictated by a resistor connected between the pins 7 and 8. In my particular built pin 8 is at the ground, so the 1K resistor dictates the intensity through the LEDs.

The first LED to switch ON is the LED connected to the pin 1. This LED is the most left one.

At 0.14 Volts DC only one LED is ON. At 0.26 Volts DC two LEDs are ON. All 10 LEDs are ON at 1.26 Volts DC input. The verified step between all LEDs is 0.12 Volts DC, with the lower threshold to activate the whole schematic being 0.14 Volts DC, as already mentioned. This schematic has already a good sensitivity and range to be connected as is directly to the AGC (automatic gain control) voltage of a receiver. My own built, presented in the above picture, chose the bar type of display. If you prefer a moving dot just let pin 9 in the air. Do not connect it anywhere, just let it in the air – this is exactly what the datasheet recommends and it works.

I also played with a version of this S-meter connected to the AC audio signal, as VU-meter:

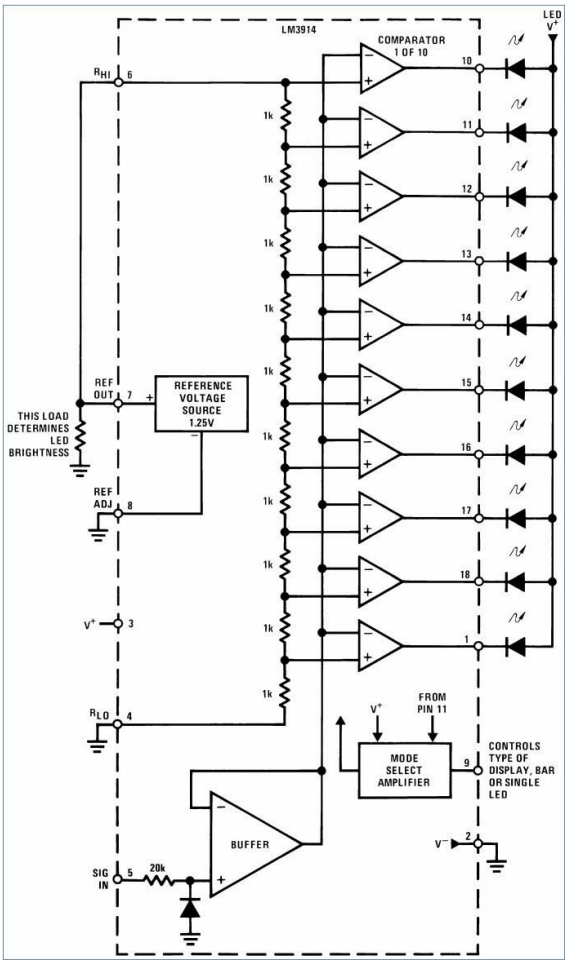


I made a rectifier with only one diode, D1, 1N4148. Germanium diodes would improve a little the lower AC threshold, but the circuit is reliable with any kind of diodes, including rectifiers like 1N4007. It was possible to use a single diode because internally the integrated circuit has at the input a 20K resistor, followed by a buffer protected by a diode against inverted voltages. This also means the circuit would have simply worked without any diode D1, which it actually does. I just felt like putting it as an extra precaution, especially when testing and risking wrong connections.

Q1 transistor is a NPN type. I have some hundreds 2N3904, so this is what I used. It was necessary to put a 470 ohm resistor in its emitter for making wider the AC voltage input range for indication and for stability. The collector current is somewhere between 0.9 and 1 mA.

The threshold voltage for switching ON the first LED (connected to pin 1 of LM3914) is 20 mV AC amplitude. That is 14.14 mV AC RMS. For every 20 mV AC (amplitude) more another LED will switch ON, too. With 180 mV AC amplitude input all LEDs are ON. That is 360 mV AC peak and also is 127.27 mV AC RMS, respectively. In those measurements the input potentiometer was let in the position not to influence the results (maximum resistance of 1M between input and ground).

For those wanting to play with LM3914 in electronics engineering computer simulation programs I must say there will be a big disappointment. The free KiCAD does not have LM3914 in its library. NI Multisim, a very strong program costing thousand dollars is in the same situation. To the best of my knowledge, only Circuit Wizard and Proteus, both of them paid programs, have LM3914 in their libraries.



Even so, the drawing on the schematic will not look like my schematics presented here. I always try to use in schematics the real package representation of integrated circuits, with the pins in their real position, in order to be easier to make the circuit on breadboard and eventually solder into a non-dedicated PCB. Expensive simulation programs like Proteus have a different representation than the natural one for LM3914.

A simulation of LM3914 (not done by me) in Proteus can be seen at:

https://www.youtube.com/watch?v=v8zTtCgeG3Y

A simulation of LM3914 (not done by me) in Circuit Wizard can be seen at:

https://www.youtube.com/watch?v=7CWhIMjHqHs

Most probably my schematics and similar can be already found on the Internet, together with other variants. I also found on the Internet mistaken ones. The presented schematics work and were tested. Remember the first LED to light ON is connected at pin 1 of LM3914.

(Reprinted with permission from Daniel Romila VE7LCG)

Islands On The Air - (IOTA Islands) is an award program for radio amateurs interested in making contacts with stations located on islands worldwide. The program was launched in 1964 and since then has become one of the most popular award programs in amateur radio. During the IOTA Forum this year, Roger G3KMA announced the following six new IOTA groups:

- AS-206; JA0, 1, 2, 7, Honshu's Coastal Islands East, Japan

- AS-207; R0K, Chukchi Sea Coast Centre group, Chukotskiy Avtonomnyy

  Okrug, Russia - Asia

- OC-298; FO, Tatakoto Atoll, Tuamotu Islands, French Polynesia

- OC-299; V6, Yap East group, State of Yap, FSM

- OC-300; T31, McKean and Nikumaroro Atolls, Phoenix Islands, Central

  Kiribati, Kiribati

- SA-101; CE0, Alejandro Selkirk Island, Juan Fernandez Archipelago, Chile

The addition of these six groups takes the total of groups that have confirmed or provisional IOTA numbers to 1172 and of these 1131 have been activated, the remaining 41 have not.

IOTA is managed by Islands On The Air (IOTA) Ltd. for the Radio Society of Great Britain (RSGB) who provide an introductory page to the program on their website.

Ganesh VU2TS

ARE WE LOSING THE 2 METER BAND?

The hot subject being discussed worldwide just now is the proposed 2 meter band allocation.

Members must be aware that there is a proposal filed with the WRC-19 preparatory group at CEPT that WRC-19 should decide on feasibility studies for additional Aeronautical-Mobile-Services(AMS) allocations in the range from 144 MHz to 22.2 GHz. This means we might lose the 144 - 146 MHz band. All our repeaters are on this band, and the 2 meter band is the most

popular band for local ragchews, nets, disaster management. Most of the amateur satellites are on 2 meters too. It is unimaginable!

IARU is intensively working on executing their influence within the current process and trying to keep the 2 m band as it is now. By the way, the cost of this activities is covered by the funds resulting from the contributions of the IARU member societies. **So it is imperative that VU amateurs enrol as members of ARSI.** Without the commitment and the funds the amateur radio community would have little influence in that process.

You will agree, amateur radio needs to speak with a single voice.

Therefore, Bernd DF2ZC, the designated Frequency Manager DARC requests everybody to refrain from using maybe good personal contacts to your government or the EU. This would weaken our position and take away power and vigour from the systematic approach by IARU and country amateur radio societies. This particularly applies for online petitions which, by the way, are not even based on a correct facts background.

From out part, we can only request the Ministry of Communications / WPC to file their non-acceptance to the proposal, with the IARU.

Ganesh / VU2TS

New Record Set on VHF DX

144 MHz DX - FT8 signal received over 5102 km path.

The VHF DX site “Many More Miles on VHF” reports that on June 9, 2019, D41CV in Cape Verde was received on 144 MHz FT8 in Austria a distance of 5102 km.

PSK reporter showed that at least a dozen Italian stations have received/worked D41CV using the digital mode FT8

https://www.mmmonvhf.de/es.php?year=2019&month=06&day=09

The solar wind is a stream of energized, charged particles, primarily electrons and protons (plasma), flowing outward from the Sun. The Inter-planetary magnetic field is embedded within the solar wind. Solar storms occur when the Sun emits huge bursts of energy in the form of solar flares and coronal mass ejections. These streams are called coronal mass ejections, or CMEs and are more common when sunspots are present. When CMEs hit the Earth, they can cause geomagnetic storms that disrupt satellites and electrical power grids.

A lack of solar particles from the Sun is a sign of a solar minimum, and one of the natural impacts of decreasing solar activity is the weakening of the solar wind and the corresponding magnetic field which, in turn, allows more and more cosmic rays to penetrate the solar system.

During a solar maximum, the Sun is hotter and littered with sunspots. Less heat in a solar minimum is due to a decrease in magnetic waves. The temperature of the photosphere (the surface of the sun as seen by us) is 5,500°C but when there are more sunspots, it gets cooler because the area covered by the sunspots are cooler - like 4000°C. Fewer magnetic waves equates to the Sun being slightly cooler, and experts are predicting the solar minimum to deepen even further before it gets warmer again. With less magnetic waves coming from the Sun, cosmic rays find it easier to make their way to Earth.

Now, with cosmic rays at an all-time high, scientists know the Sun is about to enter a prolonged cooling period, and scientists predict that more cosmic particles hitting Earth can have serious impacts for our planet, especially the climate. According to experts, the intensification of cosmic rays can affect Earth's cloud cover, the safety of air travellers and even as a trigger for lightnings. And of course, a prolonged solar minimum causes temperatures to fall.

The last time a prolonged solar minimum was in effect was the Maunder minimum, which saw seven decades of freezing weather, began in 1645 and lasted through to 1715, and happened when sunspots were exceedingly rare.

The Sun actually reverses its magnetic field every solar cycle, a period of roughly 22 years, but it is a slow transition and usually overlaps with the earlier cycle. Sunspots with opposite polarity were observed way back in 2016, and again in 2018 and 2019 - heralding the arrival of Solar Cycle # 25 and right now there are signs that the Sun is reversing its magnetic field.

DXCC's Most Wanted

The "DXCC Most Wanted" countries list has been updated in June 2019. The list contains a total of 340 entities. The complete "DXCC Most Wanted" entities list is available at: https://secure.clublog.org/mostwanted.php

The following are the top ten entities:

1. P5 North Korea
2. 3Y/B Bouvet Island
3. FT5/W Crozet Island
4. BS7H Scarborough Reef
5. CE0X San Felix Islands
6. BV9P Pratas Island
7. KH7K Kure Island
8. KH3 Johnston Island
9. FT5/X Kerguelen Island
10. 3Y/P Peter 1 Island

THE APPLE WATCH USEFUL FOR DXERS

There is one function of the Apple Watch that may be very useful for Dxers. In the menu, you can choose to display several time zones on the main screen – like local time, UTC, and so on. In the world clock menu, the day and night areas can be displayed.

The **gray-line zone** on the map can be used as a handy indicator of when a DX contact via the gray-line is possible. In addition, the sunrise and sunset time is also shown.

THE ORIGIN OF 73

In the April 1935 issue of QST on page 60 there is a short article on the origin of 73. This article was a summation of another article that appeared in the "December Bulletin from the Navy Department Office of the Chief of Naval Operations". That would be December of 1934.

The quotation from the Navy is as follows: "It appears from a research of telegraph histories that in 1859 the telegraph people held a convention, and one of its features was a discussion as to the saving of 'line time'. A committee was appointed to devise a code to reduce standard expressions to symbols or figures to save time. This committee worked out a figure code, from figure 1 to 92.

Most of these figure symbols became obsolescent, but a few remain to this date, such as 4, which means "Where shall I go ahead?'. Figure 9 means 'wire', the wire chief being on the wire and that everyone should close their keys. Symbol 13 means 'I don't understand'; 22 is 'love and a kiss'; 30 means 'good night' or 'the end'. The symbol most often used now is 73, which means 'my compliments, now used for kind regards' and 92 is for the word 'deliver.'

The other figures in between the forgoing have fallen into almost complete disuse."

Now, why I am mentioning this is because I observed, nearly everyone – yes, everyone concludes their messages with 73's. Plural.

73 itself is 'kind regards' which is plural, so why 73's? Will It be 'kind regardss"?

Remember this when you write to another amateur next.

OFFICE BEARERS

PRESIDENT
Gopal Madhavan VU2GMN
"Shreyas Apartments"
128 Greenways Road, Chennai 600028
e-mail: president@arsi.info

VICE PRESIDENT
Jayant (Jayu) S.Bhide VU2JAU
Near Pragati Lodge
Shinde ki Chhawani
Gwalior 474009 M.P.
e-mail: vicepresident@arsi.info

HON. SECRETARY
Govind Girimaji VU2GGM
36, Sneha Colony
Chikkasandra, Bengaluru 560061
e-mail: secretary@arsi.info

TREASURER
K.G.Ramesh Kumar, VU2LU
Care of: Linux Learning Center Pvt.Ltd
635, 6th Main Road
Hanumanthanagar
Bengaluru 560019
e-mail: treasurer@arsi.info

EDITOR
T.S.Ganesh VU2TS
"WATAPI" - B.R.HILLS, KARNATAKA 571441
e-mail: editor@arsi.info

QSL MANAGER
Ramesh Kumar VU2LU
Care of: Linux Learning Center Pvt.Ltd
635, 6th Main Road, Next to Bank of India
Hanumanthanagar
Bengaluru 560019
e-mail: qslburo@arsi.info

Monitoring Systems Co-ordinator
B.Manohar Arasu VU2UR
MIG-6, 80 feet road, KST, Bengaluru 560060
e-mail: monitoring@arsi.info

Contest & Awards Manager
Kiran Padiyar VU2XE
Apt.902 Pratham Casa Serene # 8
S M Road, Jalahalli Cross
Bengaluru 560057.
e-mail: contests@arsi.info

The address of the Society to which all correspondence is to be sent:
Ramesh Kumar VU2LU
Care of: Linux Learning Centre Pvt Ltd.
635, 6th Main Road, Next to Bank of India
Hanumanthanagar, Bengaluru 560019