



January 2020

Public Service on Two Wheels

*Dedicated to providing service to the community while combining the two hobbies of motorcycling and amateur radio*

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## From the President's Desk

President's message:

I want to take a moment to wish everyone a Happy New Year, and a new year filled with happiness and adventure. Whether it is riding on our bikes, talking on our ham radios, serving the community, or just being with friends and family, I wish all MARC members a super year.

I am filling in the position as president of MARC for the time being. It is quite a responsibility to do so since MARC means so much to so many people, and has always done a great job helping fellow members, and all the charity events that take place each year. It also means I will have to learn how to get up at 'o dark thirty' in order lead the club at meetings and events. So I am sure that I will need help from you.

If you have been following some of the e-mails on our mail server, then you have read about some new members talking with some of our long time members about recruiting, and possibly adding new groups outside the Los Angeles area helping with charity events like we currently do. We now have business cards printed and available at the meetings for you to have and be able to pass out to prospective new people that you think might have an interest in MARC. And we have a link to a national list of events outside of Los Angeles where we as MARC and YOU as a MARC member could help out. These in themselves are very good steps towards our goal of expanding MARC. And your suggestions for other ideas are most welcome. Hit me up at ke6zrp\_mark@yahoo.com with your ideas. But more than that, your participation is what we really need. I became aware of MARC when a friend of mine invited me to a MARC breakfast. Have you invited someone to a MARC breakfast or event? And just as importantly have you been to a breakfast meeting yourself. We have many members whom we have not seen for quite a while. And the meetings are just as much fun and filled with good people as before. Please make it a point to come to a meeting (maybe not all of them) but do tell a friend about MARC.

*(Cont. Pg-9)*

### Monthly Net

Wednesday before the meeting  
7:30 pm. All frequencies linked.  
145.440 PI 136.5 Sunset Ridge  
449.880 PL146.2 Sunset Ridge  
445.480 PL 131.8 Santa Anita Rdg  
IRLP Node 9663

### Monthly Meeting

Second Saturday of the month at  
8:00 am  
Marie Callender's  
307 E. Katella Avenue  
Orange, CA

**BOARD OF DIRECTORS**

Billy Hall	N6EDY
John Edwards	KC6ZOZ
John Reynolds	W5JFR
John Beckwith	N6JCB
Alvin Brown	KD6UZM
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# FCC Amending Amateur Radio RF Exposure Safety Rules

The FCC is amending its Part 97 Amateur Service rules relating to RF exposure safety. In a lengthy document in ET Docket 19-226 released on December 4 and addressing a broad range of RF safety issues, the FCC said current amateur radio RF exposure safety limits will remain unchanged, but that the amateur-specific exemption from having to conduct an RF exposure evaluation will be replaced by the FCC's general exemption criteria. Radio amateurs have always had to comply with RF exposure limits, but certain stations have been exempt from having to conduct evaluations based only upon power and frequency. The Commission indicated that, by and large, if an RF source was "categorically excluded" from routine evaluation under the old rules, it will most likely still be exempt under the new rules, which are expected to take effect in the next couple of months.

"For applicants and licensees in the Amateur Radio Service, we substitute our general exemption criteria for the specific exemption from routine evaluation based on power alone in Section 97.13(c)(1) and specify the use of occupational/controlled limits for amateurs where appropriate," the FCC said.

"The sky is not falling here," ARRL Lab Manager Ed Hare, W1RFI, commented. "The major aspects of the rules will not impose major new burdens on the Amateur Radio Service. As in all regulatory matters, though, the devil may be in the details, so the ARRL technical staff, legal staff, and the experts on the ARRL RF Safety Committee are carefully evaluating this FCC document."

Under the revised Section 97.13(c)(1), "In lieu of evaluation with the general population/uncontrolled exposure limits, amateur licensees may evaluate their operation with respect to members of his or her immediate household using the occupational/controlled exposure limits in Section 1.1310, provided appropriate training and information has been accessed by the amateur licensee and members of his/her household," the amended rule says.

An FCC OET Bulletin 65 illustration of how to determine exposure distances.

"RF exposure of other nearby persons who are not members of the amateur licensee's household must be evaluated with respect to the general population/uncontrolled exposure limits. Appropriate methodologies and guidance for evaluating Amateur Radio Service operation is

## EVENT CALENDAR

- January 8 - 7:30 pm Monthly MARC Net
- January 11 - 8:00 am Monthly MARC Meeting
- February 5 - 7:30 pm Monthly MARC Net
- February 8 - 8:00 am Monthly MARC Meeting
- April 4, 2020 San Diego ADA Tour
- April 25, 2020 Tour de OC
- May 16-17, 2020 MS Los Angeles Two Day Ride

### Join Us for Coffee

If you live in the Southern California area, you are invited to join us at our monthly meeting, usually held on the second Saturday of the month at Marie Callender's, 307 E. Katella Avenue.. Meeting and breakfast begin at 8:00 am.



# MARC IS EVERYWHERE - ALMOST

*Our Members Hail From All Over the Country*

Just to let everyone know – while this list is only from the past few years – we have or have had recently members from, literally, all over the world. By my count 19 states and 4 countries outside the US. While MARC started in Southern California and most of our current members are still in that area, we have current members in several other states and Canada as well.

Arkansas	Arizona	California
Georgia	Hawaii	Idaho
Illinois	Maryland	Minnesota
Mississippi	Nevada	New York
Ohio	Oklahoma	Oregon
Pennsylvania	Texas	Washington
Alberta, Canada	Quebec, Canada	

And, in the past - Lebanon, England and New Zealand.

Did I miss someone? If so, let me know and I'll make sure to update our records.



*FCC Rules pg. 2*

described in the Office of Engineering and Technology (OET) Bulletin 65, Supplement B," the revised rule concludes.

The FCC said it was not persuaded by ARRL's argument in its comments that the routine evaluation exemption for amateur radio stations operating below a certain power threshold should be maintained. "Amateur radio licensees operate a variety of installations of different size, power, and frequency, which can be located in close proximity to people, giving rise to various RF exposure concerns," the FCC noted.

In a meeting with FCC OET Chief Julius Knapp and senior staff in early November, ARRL asked the FCC to make available on the internet a calculator to facilitate making the correct calculations the rules require. ARRL said that would be preferable to unofficial third-party calculators, the results from which might not be accorded the same degree of deference in local disputes. Several software programs were suggested as models.

The FCC did not single out amateur radio in drafting its latest RF exposure rules. The rules affect multiple services, and exemptions for many other services were also deleted as part of a broader policy driven by a proliferation of RF devices, some resulting in situations where gain antennas are sited much closer to people than was expected in 1996 when the rules were last revised.

**Join Us on Facebook at:** [www.facebook.com/groups/1573778489517365/](http://www.facebook.com/groups/1573778489517365/)

**Visit our Website:** [www.MARC-HQ.org](http://www.MARC-HQ.org)

## MEETING MINUTES - December 14, 2019

President Reynolds opened the December meeting at 8:35.

14 members present.

4 Board members present.

No visitors.

Next meeting will be Saturday, January 11<sup>th</sup>, 2020.

Treasurer John Edwards reported on our current bank balance, receipts and expenditures.

He indicated we may change banks – to US Bank – due to BofA's limits for online transactions.

Billy Hall not present – he was injured in a fall and is recovering.

Board Member Alvin Brown indicated that starting in September someone else will need to handle net control equipment.

We discussed the need repeaters for the MS LA in the Spring

Discussed MS LA – a new location – Santa Monica Airport to Camarillo and back – 2 day event.

Secretary John Beckwith reported:

51 Current members paid through 2019

23 paid through 2020 or later

5 New and returning Members

San Leandro, Ca

Georgia

Texas

NY (renewing old member)

Bay Area (renewing old member)

Renewal notices will be going out shortly. Hoping to have the ability to take online payments.

Finished building a true database to track and manage membership.

Application online is now a fillable PDF. Still have to e-mail once complete.

Updated the website with some tech articles.

Wrote a Member Spotlight for the newsletter.

Working on a possible digital net - so outside SoCal can participate

Talked to Tom Griswold in Az on Fusion

We at least 5 Fusion members

We have at least 3 DMR members

Bill Douglas reminded that he will be moving out of town but will continue working on routes if desired.

John Reynolds indicated there were only 4 Net check-ins.

Some people indicated they have problems getting into repeater.

John Reynolds conducted the Gift Exchange.

Mijo Reynolds conducted the Raffle.

Prior to adjourning the meeting, John Reynolds indicated he would be stepping down as President effective with the end of this meeting.

President Reynolds adjourned the meeting at 9:45.

A short Board meeting was conducted following the general meeting.

In attendance: Board members John Reynolds, John Edwards, Alvin Brown and John Beckwith. Additional members included Jim Banks and Mark Kanzler.

Mark Kanzler agreed to serve as interim President.

John Beckwith indicated we need to establish some kind of budget. Each Board member will report to John Edwards and Mark Kanzler their anticipated expenses and revenues.

John Beckwith emphasized the need to treat MARC as a National organization. Consider including members outside the SoCal for Board Membership and/or Participation and possibly increasing the size of the Board.

Agreed to make Billy, Bonnie and Ray Lifetime members

Suggested adding Guest Speakers and/or content for SoCal meetings to increase interest and attendance.

Board Meeting adjourned at 10:45.

Respectfully submitted,  
John Beckwith, Secretary

## Member Spotlight - Timothy Lindstrom, AB0TS

Tim joined MARC in 1997. He was actually visiting his brother-in-law in Apple Valley, working 2m when he heard about MARC. He heard that Bonnie was looking for articles for the newsletter, and that was right up Tim's alley. Anyone who's been around MARC for any length of time and reads the newsletters, knows Tim likes to write. (Boy does he! :-)



Tim is from Minnesota (the "Tundra" as he likes to say) and got his technician license in March of 1995, but he's been working HF on his motorcycles for some

time now. If you read Tim's articles you see he's a year-round rider – even in that frozen northland. He found that 2 meter/440 in the Metropolitan area of Minneapolis, MN wasn't as busy as Southern California. So, he opted for HF on a motorcycle. He has mounted an ICOM 706 MKII on 3 BMW motorcycles. Using a Screwdriver antenna, he has ridden around the nation, talking on 20 meters mostly. Especially when the Ham gurus were rag chewing, he would call out Motorcycle Mobile and..... Dead silence... then incredulous protests that "you need grounding to transmit!"

He has ridden 2 Hondas and 10 BMW motorcycles and finally this past June, passed 500,000 miles - over 40+ years. He has written a book "100,000 BMW Prayer Miles"

(Available at [www.smashwords.com](http://www.smashwords.com)) over a 5-year span. Best story in there is after he did the first 100K, he then joined the Iron Butt Association.

His favorite memories come from non-ham people in their cars who would roll down their windows and say, "What is That?" Once, he

was splitting lanes in California around San Francisco and idled by a car full of college kids. They hollered - "You talking to NASA?"

In 2002 he came to the 10th Anniversary and people were amazed that someone would ride the 1800 miles to meet them. Of course, Bonnie had a twinkle in her eyes and introduced him to Ray. Apparently, Ray thought that Tim was OLD. Bonnie just grinned...:-). (For those who don't know – Ray was an Iron Butt rider as well – The word is – he put over 200k miles on 3 different Goldwings – and did 4 corners 8 times.)

Tim has had his problems with frequency vibration on 4 cylinder BMW engines. He's had to have that ICOM repaired twice. The last time the technician asked him NOT to install it back on the BMW!

Tim comes down to Southern California for the MARC every 5 years, though he missed the last one in 2017, so his next trip is due in 2022. He did ride 39 hours to Apple Valley Ca and came down for the 25th MARC Anniversary Breakfast. Then, after Mother's Day, turned around and rode home in 36 hours straight.



So, watch for Tim's article's in the newsletters – especially his winter riding exploits (in MINNESOTA!!!) and, plan to be at the 2022 MARC meeting (30<sup>th</sup> Anniversary) in SoCal to meet Tim and hear some of his stories. In the meantime – contact Tim on the MARC list and introduce yourself. Tim will surely "write" back!

Got a story of your own to share with the rest of us MARC members? We're looking for folks to share their stories in the Newsletter – drop us a line and we'll work with you to get something going. Write it yourself or we'll write it for you. Just let us know. Send a note to – [marcradiohq@gmail.com](mailto:marcradiohq@gmail.com) and we'll go from there.



# Report Causes Concern and Confusion in California's Amateur Radio Ranks

From ARRL.org News 10/15/2019

By all credible and reliable accounts, the State of California has not turned its back on Amateur Radio as an emergency communication resource nor have established repeater owners been asked to remove their equipment from state-owned sites unless they pay sizeable fees. The California controversy, inflamed by a viral YouTube video, stemmed from a California Department of Forestry and Fire Protection (CAL FIRE) communication telling a repeater owner or group that Amateur Radio equipment would have to be removed from a state-owned site or "vault" if the owner(s) determined the cost was too great to proceed with a formal application to keep it there.

"I do understand and appreciate all of the service you have provided in the past," CAL FIRE's Lorina Pisi, told the unknown repeater owner(s) or group(s) last month. "However, with constantly changing technological advances, there is no longer the same benefit to State as previously provided. Therefore, the Department no longer financially supports HAM operators [sic] radios or tenancy. If you desire to enter into a formal agreement to operate and maintain said equipment, you must complete and submit attached collocation application along with fee as outlined on page one of application. There is cost associated with getting an agreement in place."

It's not clear to whom Pisi's memo was addressed, since any name or names were redacted from the version of the memo that is being circulated. ARRL reached out to Pisi this week but has not heard back.

After receiving a lengthy communication from attorney Nathan Zeliff, K6DPS, of Shingletown, California, citing Pisi's letter, Shasta County Sheriff Tom Bosenko did some asking around of his own. He reported that Jim Price, the Communications Center Operation Officer for the State Office of Emergency Services, explained to him that the matter is not a new one, and the

issue of repeater equipment in state radio vaults has been going on for 5 years or longer.

"He said this gets down to a local level, if the local officials feel there is a need to have the ham radio repeaters in vaults in their area," Bosenko told Zeliff. "As such, this gets down to authorization for vault space, clearances and authorization to access equipment in the vaults and contract agreements for the equipment to be in the vaults. The matter of cost and who will bear the cost for contracts and vault space has also been an issue for years."

ARRL officials who have also looked into the situation agree that it's been blown out of proportion by parties with their own agendas.

"The State of California has not made any determination we can find 'that Ham Radio [is] no longer a benefit,'" Pacific Division Director Jim Tiemstra, K6JAT, is quoted on the Sacramento Valley Section website. "What happened is that CAL FIRE has transferred responsibility for its communications sites to its property management department. That department has the task of evaluating each site, its condition, use, and tenants. If a repeater not known to be associated with the emergency management function of a local jurisdiction is found in a CAL FIRE vault, the default action is to move it out or subject it to commercial rental rates."

"Our contact in the California Office of Emergency Services suggests that, if any affected repeater is in any way involved with local emergency or government support activity, they should ask that agency to engage with CAL FIRE concerning the repeater. If the agency makes the case, there is a good chance that the repeater will be unaffected," Tiemstra added.

ARRL Southwestern Division Director Dick Norton, N6AA, has been responding to inquiries with the same message.

# My Foray into Digital .... Part I

John Beckwith, N6JCB

Recently I decided to poke my nose into digital ham radio. For those of you unfamiliar (living in a cave?), this is a relatively new and growing (if slowly?) mode for amateur radio. And, unfortunately, it harkens back to the VHS/Beta, and more recently, HD TV, wars. Both of those shook out to a common format. Amateur Digital Radio has yet to do that.

Before I delve into my decidedly non-technical experiences with these “digital” modes let me remind all – digital ham radio has been around for a long while in other ways. IRLP<sup>1</sup> connects an analog radio to an analog repeater that converts the audio into digital format for sending over the internet – with a corresponding repeater at the other end reversing the process. And Packet radio (with APRS being a specific use of Packet) has also been around forever. Again, as with IRLP, an analog signal is sent out that is converted to 1’s and 0’s by a modem. Those 1’s and 0’s are transmitted to another station where another modem converts the signal back to analog so an analog radio can receive the signal. And there are certainly several other “digital” modes out there as well.<sup>2</sup> (Actually, in the most basic sense – Amateur Radio got its start in a “digital” mode if you think about it. I mean, isn’t Morse code “digital”? It’s either long or short – digital is “either/or” so, really.....???:-)



However, the point of this discussion is the “new” digital modes. By that I mean – truly digital – no analog involved (beyond your voice). The radio transmits 1’s and 0’s and the radio on the other end receives those and what you hear from the speaker (while your ear hears analog) is the digital result. The difference being – the quality of the output. Like current cellphones compared to their earlier siblings – the quality is much better than analog. Of course, in music, some would say they prefer the sound of analog music – e.g. vinyl records – to current digital music – e.g. CD and MP3 – in our case, we’re talking about communications where clarity and comprehension is preferred to the artistic values.

Currently there are at least three major formats. All, for the most part, non-interchangeable. So, if you commit to one, you “essentially” can’t communicate with the others. I say “essentially” because there are ways – sorta..... More on that shortly.

The three most common formats are D-Star, System Fusion and DMR. There are also APCO P25, NXDN Used by Kenwood (Nexedge) and Icom (IDAS) and FreeDV - Found on HF<sup>2</sup>. And others....

D-Star is an open protocol but, of the major manufacturers of ham radio transceivers, only ICOM has implemented this protocol – so you basically need an ICOM digital radio to talk to someone using D-Star, though there are other ways to use D-Star as well. Of these three, D-Star has been around the longest.

System Fusion is specifically a Yaesu protocol and is probably the newest kid on the block. To use Fusion you need a Yaesu digital radio. Yaesu also did something to encourage System Fusion – they offered special pricing to clubs to purchase System Fusion repeaters – which have the additional advantage of being both Digital and Analog – and can translate back and forth freely.<sup>3</sup>

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DMR (Digital Mobile Radio) is a more open protocol developed by Motorola (primarily for commercial use) but available in radios by many manufacturers.

In my case, I'm already invested in Yaesu radios, so I thought I'd stick with System Fusion. By some accounts, Fusion is a better protocol, though there are those who would argue the point. The obvious limitation being the ability to only talk directly to other Yaesu users. For me, it was either that – or buy a DMR capable radio because, currently, the only folks I know are using DMR.

In talking digital – the main value is the quality of the signal. When you hear someone on a digital radio, it is much clearer (still within the limits of the speaker/headphones in use.) A second “main value” (some might say the “first” main value) is the ability to use the internet. Since digital radios are inherently “digital” there is no translation to get the “data” to pass around the internet. Of course, to do this you need some kind of access to the internet. That can be a repeater, with the right kind of digital mode, or a device that connects to the internet (not a modem, exactly, but something that can receive the radio signal and connect to the internet like a computer does. More on this in a bit.) This means, being able to talk to other digital radios anywhere in the world. Much like some of the other digital capabilities (like IRLP) that already exist. The difference being, initially, the clearer communications. (There's more, but I'll touch on that later.)

There are a couple of factors to consider. Digital radio means I can talk to another user in a purely digital mode. No modems or such to back and forth – (again, ignoring the fact that my voice is analog and DOES have to be converted to 1's and 0's, but up front where it's most efficient.) A difference between Analog and Digital ham radio is – With Analog the quality may be lower, but it may get through when a digital signal may not. Digital is pretty much all there or not at all. As opposed to a “weak and barely audible” analog signal that might still get through.

Ok – so, what does it take to go digital. In its most basic form – two digital radios, using the same mode (e.g. DMR, Fusion, D-Star etc.) can talk to each other. They can also use repeaters (of the proper mode), just as we're used to in the analog world. They can extend that conversation even further if the repeaters are connected to the internet. What is special here is – while, like other means that use the internet, digital has the ability to be very specific as to who you can talk to. This is because digital, with all its “data” capabilities can further specify exact users, groups of users, “rooms”, talk groups etc. These terms differ depending on the mode used, but the concepts are the same. Someone, somewhere identifies a specific “place” and all you do (easy, right? Maybe not) is have your radio address that “place”. But that place is not so much a physical place somewhere in the world but a “space” that other users can occupy (in the “ether” if you will.)

My experience thus far has been with Yaesu's System Fusion and DMR. In both cases they have ways to identify “locations” where users can get together (from any part of the world) to share their communications. To do this they have to connect to the internet – one way or the other. The obvious way is via compatible repeaters.



So if I'm using a Yaesu digital radio (in my case an FT2DR or FTM-100) I have to be able to hit a repeater within range that understands my digital mode (System Fusion). BTW – most radios do both Analog and Digital, but you have to identify which you're using on the radio in order to make the contact. And repeaters can be one or the other – or both. So, it's a matter of finding the right repeater.

However, another way to get to the internet is a common tool called a Hotspot (similar



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to network hotspots). There are many out there, but the one I selected is a Zumspot. The Zumspot is actually a collection of pieces – A “Computer” – in this case basically a computer on a chip – specifically a Raspberry Pi processor; Software – in this case Pi-Star – that understands the processor and can communicate with the....; Radio – for receiving and transmitting signals between a local radio (HT?) and the internet; Antenna; Power supply (USB 5v is common.). (Some readers may take issue with my exact description, but hopefully I’ve described this setup in “general” terms accurately. If you decide to follow this path – please do your own research on specifics....:-)

The point of the Hotspot (Zumspot in this case) is – I can run the Hotspot anywhere it can access the internet through any kind of Wifi (or in some cases Ethernet) connection. You setup the Hotspot to connect to the internet and set it up to work on some specific frequency. Then, you key your external radio to that frequency, the Hotspot receives your transmission and sends it over the network connection to the internet. From there, the “addressing” in your transmission tells it where to go on the other end. Much like a computer using packets to send data where you want it to go. In reverse, someone sends something back, with the proper addressing, through the internet, which is picked up by your Hotspot, which transmits the signal on the set frequency, and you hear it on your radio – “crystal clear”.



I’ve had success using both my FTM-100 connecting directly to the internet through my computer (and via an HRI-200 – more on that later) with other Fusion users, as well as using my FT2DR talking to my Zumspot – to DMR contacts.

So – If you hated the VHS/Beta wars – hang on and let’s see if/when this War shakes out. Personally – I’m hoping for either: Someone to come along with a device that receives all and transmits all (without the need for a hotspot) – or for all these folks to agree on either one of the existing formats, or some new one yet TBD.

But wait – what about Mesh?? (A story for another day – and another author.) Stay tuned for Part II – more on my actual steps and mis-steps....  
See you on the airwaves – be it Analog or Digital.....

73’s

John Beckwith, N6JCB  
Westchester, California

<sup>1</sup> <http://www.irlp.net>

<sup>1</sup> [https://en.wikipedia.org/wiki/List\\_of\\_amateur\\_radio\\_modes](https://en.wikipedia.org/wiki/List_of_amateur_radio_modes)

<sup>2</sup> <http://www.mikemyers.me/blog/2016/2/19/d-star-dmr-fusion-which-is-right-for-you>

President’s Msg. From Pg. 1

Thanks to John, N6JCB for his hard work making the website better and more up to date. He is also working on finding some new updated MARC wear. Most of my MARC shirts are getting a little thin and some new threads and cooler looking printing/embroidery means that I can show how proud I am to be a MARC member. And you can too!

And finally I want to thank those MARC members that started and built this club a little more than 25 years ago. We don’t see all of them anymore, but we all feel and know what they did to make MARC a great club. We love them all.

73

Mark Kanzler, ke6zrp

## A Short Note From Rialto

Mijo and I wish everyone in MARC a Happy and Prosperous New Year for 2020. The high winds in December took down my GP9 antenna, so I am without 2m or 440 radio communications. The wind, rain, and cold along with my back ache have kept me from putting the antenna back up. Hoping for drier and warmer weather so I can get on the roof and get the antenna back up. It has been 15 or 20 years since I first raised the GP9, so age has slowed its replacement. Hang in there.

Our next MARC meeting is scheduled for 11 January 2020 at the Marie Callender's Restaurant on Katella in Orange. I hope that we will have a good turnout to welcome our new Acting President, Mark, KE6ZRP.

I hope everyone will continue to support Mark and the MARC staff as they have Mijo and me in the past. I will be helping Mijo and Kim with the 50-50 and doing what I can to support MARC.

John F. Reynolds

MSGT USAF Ret.

Johnw5jfr@roadrunner.com

## Classified Listings

### For Sale

Classified listings will run for one month. You must submit an updated listing for each issue.

## Sponsors

Please support our sponsors with your business. When you visit their stores be sure to mention you are a MARC member

### Antennas - Analyzers - Mounts - Power supplies



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