

**The Official Journal of the Northern California Packet Association  
Serving Amateur Radio Digital Communications in Northern California**

Fall, 2001

Issue number 29

\$2.50

## President's Message

*Gary Mitchell, WB6YRU*

### New NCPA remailer address!

The NCPA remailer has been moved to a new address: [ncpa@kkn.net](mailto:ncpa@kkn.net). If you were already on the old remailer, you should have received a notice that you had be subscribed to the new one.

If you weren't already on the remailer, you can get on the list by sending the command "subscribe" (without the quotes) in the message body to [ncpa-request@kkn.net](mailto:ncpa-request@kkn.net). For more information about the mechanics of the remailer, other commands, etc. send the command "help" to the same address.

### Band planning news on 70 cm

It's taken a long time and a lot of

effort, but that light at the end of the tunnel doesn't seem to be a train!

The NCPA and NARCC (et al) have reached an agreement on a general band plan for 70 cm. As of this writing, the NCPA is voting on ratifying it. I'm told NARCC will vote on ratifying it at their January meeting.

Once this one is ratified, the northern CA region will have agreed upon band plans for ten meters through 70 cm.

There are some things about the 70 cm plan that I personally am not thrilled with, but other NCPA directors are of the opinion that it's a reasonable compromise.

Specifically, the digital segment at 433 MHz now ends at 433.6, but we gained two high-speed duplex channels, for a total of five pair. The lower half of the high-speed duplex channels will be sharing spectrum with the top of the

## In This Issue

<b>NCPA meeting . . . . .</b>	<b>1</b>
<b>President's Message . . .</b>	<b>1</b>
<b>ARRL News . . . . .</b>	<b>2</b>
<b>Still a NCPA member? .</b>	<b>3</b>
<b>Packet BBS's . . . . .</b>	<b>4</b>
<b>DX Spotting nodes . . . .</b>	<b>5</b>
<b>PC-SAT power problem</b>	<b>6</b>
<b>Remailer Excerpts . . . . .</b>	<b>7</b>
<b>Digital Band Plan . . . . .</b>	<b>9</b>
<b>70 cm General Plan . . .</b>	<b>11</b>

ATV channel. They won't be contiguous, but that shouldn't be a problem. The main reason for this "musical chairs" is to try to allow for the

## NCPA Annual Meeting

There will be a meeting of the NCPA in Sunnyvale on Saturday, January 12, 2002, at 10 AM. This is a "make up" meeting for the failed attempt at Pacificon.

We'll be in the Murphy Park building, 260 North Sunnyvale Ave., Sunnyvale, CA 94088. The approximate area is south-east of 101 and 237. The park is at the north east corner of N. Sunnyvale Ave. and E. California St. It is on the south side of the Central Express Way, but there is no turn from the Central Express Way. You should approach from either Wolf Road to E. California, or Mathilda Ave to West California. Talk-in 145.27(-), PL 100.

fact that some ATV devices are shipped on a frequency of 434 MHz. These include things like small video cameras for model airplanes, etc. Even if those users are aware of the band plan, it is argued they may not be able to change frequencies.

### NCPA meeting

Don't forget the NCPA meeting on Saturday, January 12, in Sunnyvale.

#### Directors

Mel Gregonis (high speed, new tech.), W6BNG  
e-mail: melg@llnl.gov  
Howard Krawetz (Keyboard), N6HM 408-739-7936  
home BBS: N0ARY e-mail: n6hm@compuserve.com  
Bob Fahnestock (TCP/IP), WH6IO  
home BBS: WH6IO e-mail: wh6io@benicia.ampr.org  
Bob Vallio (DXPSN), W6RGG 510-537-6704  
home BBS: N0ARY e-mail: wsixrgg@crl.com  
Dave "Zonker" Harris (APRS), N6UOW  
home BBS: N6QMY e-mail: n6uow@baker-to-vegas.org  
Gary Mitchell (BBS), WB6YRU 408-265-2336  
home BBS: N0ARY e-mail: wb6yru@aenet.net  
Mike Fahmiel (BBS/Keyboard), WA6ZTY  
home BBS: N6EEG e-mail: fahmie@earthlink.net

#### Officers & Staff

President: Gary Mitchell, WB6YRU  
Vice-President:  
Secretary: Dave Harris, N6UOW  
Treasurer: Howard Krawetz, N6HM  
Editor: Gary Mitchell, WB6YRU  
Frequency Coordinator: Gary Mitchell, WB6YRU  
Mail: Howard Krawetz, N6HM

The NCPA Downlink is published quarterly by the Northern California Packet Association, P0 Box K, Sunnyvale CA 94087, for the entertainment and education of amateur Radio operators using digital modes, and those with an interest in them. A one-year membership in the NCPA, including a subscription to the NCPA Downlink, is \$10.00 in the U.S. and its possessions.

All original material not attributed to another source is Copyright by NCPA. Excerpts may be drawn from this publication without prior permission provided the original contributor is credited and this publication ("The NCPA Downlink") is cited as the source.

The digital band plan as well as other information about the NCPA, are available on the Web at: <http://www.n0ary.org/ncpa>

The NCPA Board of Directors meets electronically in order to transact association business and meet with members and interested amateurs. The address for the board remailer is: [ncpa@kkn.net](mailto:ncpa@kkn.net). Anyone can subscribe to the list by sending e-mail to [ncpa-request@kkn.net](mailto:ncpa-request@kkn.net) with the command "subscribe" in the body of the message (don't include the quotes).

As many of you know, there was a snafu regarding our arrangement for a room at Pacficon. So, this is a make-up meeting.

The NCPA hasn't met in the South Bay for a while now, perhaps it's about time. We used to move the meetings around anyway, so fewer people would end up having to drive a long way every time.

**EOF**

## **News from the ARRL**

From *The ARRL Letter*, Oct. 12, 2001

### **FCC SAYS BAND PLANS DO MATTER**

The FCC recently asked three amateurs to respond to complaints alleging that they deliberately transmitted SSB on top of CW stations operating in the vicinity of 1820 to 1825 kHz. The FCC has never designated mode-specific sub-bands in the 160-meter amateur band. Instead, operators are asked to voluntarily adhere to the ARRL band plan, revised this past summer, which recommends a lower limit of 1843 kHz for SSB operation.

In the wake of the complaints, FCC Special Counsel for Amateur Radio Enforcement Riley Hollingsworth wrote George Wehrung, W5TZ, and Dennis Clauder, KT5S--both of Texas--and Derrick Vogt, WA4TWM, of Kansas in mid-September. Hollingsworth asked each to respond to allegations from several other operators that their SSB transmissions deliberately interfered with attempts by others to operate on CW between 1820 and 1830 kHz. Copies of the complaints were sent to all three operators.

"Band plans are voluntary in nature," Hollingsworth acknowledged in each of the similarly worded letters. He said the FCC depends upon voluntary compliance because it minimizes the necessity for the Commission to be called in to resolve amateur problems. "Where interference results from band plans not being followed,"

Hollingsworth continued, "the Commission expects substantial justification to be shown by the operators ignoring the band plans."

Hollingsworth requested that Wehrung, Clauder and Vogt each reply to the complaints within 20 days.

---

From *The ARRL Letter*, Oct. 19, 2001

### **BATTLE LOOMS OVER PART 15 ACCESS TO 425-435 MHZ**

The FCC has proposed changes to its Part 15 rules governing unlicensed devices that would allow operation of advanced RF identification devices between 425 and 435 MHz. By going along with a request made earlier this year by SAVI Technology Inc and fiercely opposed by ARRL, the FCC has set the stage for another battle between amateur and commercial interests.

"The FCC hasn't thought this through," said ARRL Executive Vice President David Sumner, K1ZZ. He contends that the Part 15 RFID proposal--included this week as part of a larger Notice of Proposed Rule Making and Order--is "contrary to the whole philosophy of the Part 15 rules." Sumner said the RFID devices SAVI proposes more properly belong on frequencies that are also authorized for use by devices regulated by FCC's Part 18 Industrial, Scientific and Medical (ISM) rules.

The FCC said this week's NPRM&O would modify the rules for RFID systems "to harmonize our rules with those in other parts of the world and to allow for improved operation." Sumner said that 433.9 MHz is allocated for ISM devices in 10 European countries but not in the rest of the world, including ITU Region 2 (North and South America).

Last March, the ARRL urged the FCC to deny or dismiss SAVI Technology's petition. The League argued that the field strengths and duty cycles SAVI proposed for its RFID tags were unreasonable "and would undoubtedly seriously disrupt amateur communications in one of the most

popular of the Amateur Service allocations."

SAVI, which markets radiolocation and wireless inventory control products, told the FCC it needed the rules changes to satisfy customer demand for increased RFID system capabilities. The FCC this week said it agreed with SAVI that changes to its Part 15 rules to allow more advanced RFID systems in the 433 MHz band "would serve the public interest." It proposed to create a new section to Part 15 that would allow operation of RFIDs in the 425-435 MHz band and transmissions of up to two minutes at maximum field strengths now only permitted for extremely short-duration, intermittent control signals.

In an apparent about face, the FCC said it believes the proposed levels would offer only minimal interference potential for licensed users. The FCC in the past has acknowledged serious interference potential and has prohibited data transmission, among other things, at the proposed field strengths for that very reason.

As proposed, transmissions of 120 seconds would be permitted with just a 10-second silent period between transmissions. Under Section 15.231(e) periodic radiators are permitted field strengths of less than 5000 uV/m at 433 MHz measured at three meters, with duty cycles of less than one second and a silent period between transmissions that's at least 30 times the duration of the transmission.

The League pointed out in its earlier comments that the Communications Act of 1934 lacks authority to allow unlicensed devices with substantial interference potential. "Such devices must be licensed," the ARRL concluded. Unlicensed Part 15 devices must not interfere with licensed services and must tolerate interference received from licensed radio services in the same band.

Another portion of the proceeding involves the 13.56 MHz ISM frequency. Sumner said that proposal "at first glance" might permit increased emissions in the bottom 10 kHz of the

## **Are You Still a NCPA Member?**

Please check the mailing label...Has your membership expired? If so, why not renew your membership now while you're thinking about it? (There's a form on the back cover.)

**If your membership expired in 2000, then this will be your last *Downlink!***

Memberships have been extended to allow for the fact that the *Downlink* didn't come out quarterly in the past, but this is it for those with 2000 expirations. At this point, we should be "all caught up" and expirations will occur normally again. If your membership expired, but you believe you should have more issues coming anyway, please let us know.

20-meter amateur band. Sumner said the ARRL would take a closer look at this section of the overall proposal before assessing its interference potential.

Sumner said the League plans to file a strong opposition to the FCC's NPRM&O. The entire Notice of Proposed Rule Making and Order in ET Docket 01-278 (which incorporates RM-9375 and RM-10051) is available on the ARRL Web site.

---

From *The ARRL Letter*, Oct. 26, 2001

**ARRL TO FCC: NO**

## Packet Sysops of Northern California Packet Bulletin Board Systems November 2001

Call-SID -----	Location -----	User Ports -----
WH6IO	Benica	144.99, 145.71&+, 145.75&, 433.43&+
WA6ZTY	Berkeley	144.97
KE6I	Berkeley	145.01&, 433.43&
N2THD-1	Citrus Heights	145.07, 441.50
N6QMY-1*	Fremont	144.31, 441.50
N6CKV	Gilroy	144.99
N6LDL	Los Gatos	144.97, 145.71&, 441.50
WA6NWE-1	North Highlands	144.93, 145.09, 145.75, 441.50
KD6DG	Redding	145.09
WD6CMU	Richmond	144.97
W6CUS-1	Richmond	145.63
N0ARY-1*	San Jose	144.93, 433.37&
K6YV	Sonora	144.97
WA6EWV-1	South Lake Tahoe	144.97
W6YX-9	Stanford Univ	145.75+
W6SF	Stockton	144.99
K6MFV	Walnut Creek	144.31, 145.71&+
KE6LW-1	Yuba City	144.99

**Keys:**

& = 9600 Baud Port  
 + = TCP/IP Port  
 \* = Currently Inactive

### COMMERCIAL USERS AT 2390-2400 MHz!

The ARRL this week urged the FCC "in the strongest possible terms" to make no commercial allocations in the Amateur Service 2390 to 2400 MHz primary allocation. The League tentatively suggested, however, that hams might be willing to share the band with compatible government services that are displaced to make room for advanced wireless systems.

The ARRL told the FCC that advanced wireless services "are fundamentally incompatible with continued amateur access to the band."

The federal government, on the other hand, "has historically been a compatible

sharing partner," the League said, adding that government uses would offer "the least disruptive opportunities for sharing" in the band. The ARRL made clear that such sharing should happen only "if it is absolutely necessary to re-accommodate some displaced users" and would be "subject to compatibility studies."

The ARRL commented this week in four separate proceedings dealing with allocations for advanced and third-generation wireless systems, the mobile satellite service and the Unlicensed Personal Communications Service (U-PCS). The ARRL focused its remarks on ET Docket 00-258, which included 2390-2400 MHz as a candidate band for advanced wireless services.

Commenting on the WINForum Petition

for Rule Making (RM-9498) that seeks to modify technical rules for Part 15 U-PCS operation at 2390 to 2400 MHz, the ARRL reiterated its position of two years ago. The ARRL said it still opposed a power increase for asynchronous U-PCS devices in the band and said there can be no change in maximum power spectral density. The ARRL called those two provisions "critical to the compatible sharing plan that resulted in ARRL support of the U-PCS authorization" in the band.

The ARRL also asked the FCC to retain the non-government primary Amateur Service allocation at 2390-2400 MHz. The ARRL also noted that amateur allocations in the vicinity of 2 GHz "have been steadily eroded" through encroachment by other services.

### FCC PUTS KENWOOD "SKY COMMAND" PETITION ON PUBLIC NOTICE

The FCC has put on public notice a rulemaking petition from Kenwood Communications Corporation requesting that the FCC relax restrictions on Amateur Radio auxiliary station operation. The FCC assigned the rulemaking number RM-10313 to the petition and invited public comment. The petition marks Kenwood's latest attempt to legalize its "Sky Command" remote station control system.

Kenwood seeks a change in Part 97 rules that would expand permission to operate an auxiliary station on all 2-meter frequencies above 144.5 MHz, except on 145.8 to 146.0 MHz. While not mentioning Sky Command by name, Kenwood said the proposed rule change "would allow the development and use by amateurs of new technology devices and increase the utility of the limited amateur allocations." Current FCC rules limit auxiliary operation to certain frequencies above 222.15 MHz.

In July 2000, the FCC declared that use of the Sky Command did not comply with Amateur Service rules--specifically Section 97.201(b)--and declined to grant a waiver make it legal. The ARRL

commented in opposition to Kenwood's earlier efforts to have the system declared to be in compliance, and it refused to permit Sky Command advertisements in QST <<http://www.arrl.org/news/stories/2000/07/28/3/>>.

Sky Command lets a user control a fixed HF station via a pair of dual-band transceivers. It operates in full duplex, using frequencies on 70-cm and 2 meters.

In its latest Petition for Rule Making filed May 1, Kenwood asserted that auxiliary operation is "poorly defined" in the FCC rules and "significantly overregulated." Kenwood argued that present limitations on auxiliary operation no longer are appropriate in today's amateur environment and should be withdrawn.

Amateurs may view and comment on the

Kenwood proposal via the FCC's Electronic Comment Filing System ( E C F S ) , <<http://www.fcc.gov/e-file/ecfs.html>>.

From *The ARRL Letter*, Nov. 30, 2001

**COMMENTS DUE FEBRUARY 12 IN "BAND THREAT" PROCEEDING**

Comments are due February 12, 2002, in an FCC Notice of Proposed Rule Making and Order, ET Docket 01-278, that ARRL has targeted as a potential band threat. Reply comments are due on March 12, 2002. The proceeding deals in part with a potential threat to the popular 70 cm band from Part 15 RF identification devices proposed for deployment between 425 and 435 MHz.

SAVI Technology, which markets radiolocation and wireless inventory

control products, told the FCC it needs the rules changes to satisfy customer demand for increased RFID system capabilities. The FCC has proposed to allow operation of RFIDs as unlicensed Part 15 devices in the 425-435 MHz band with transmissions of up to two minutes at field strengths now only permitted for extremely short-duration, intermittent control signals.

The ARRL has argued that under the Communications Act of 1934 the FCC lacks authority to permit unlicensed devices with substantial interference potential and that such devices must be licensed. The League also is looking into the interference potential posed to 20 meters by a proposal to increase the maximum emission levels permitted by Part 15 devices operating at 13.56 MHz, as well as the maximum level of out-of-band emissions.

Commenters are advised to read

**DX Spotting Nodes**  
June 2000

<u>Location</u>	<u>Call</u>	<u>Alias</u>	<u>Frequency</u>	<u>Coverage</u>
California City	K6ZZ		144.490	Antelope Valley area
	EARN8		144.490	Oak Peak
Castro Valley Chico	W6RGG	DXCV	145.770	East, West, South SF Bay area
	K6EL	DXC	145.670	Chico
	K6EL	DXW	145.670	Oroville, Red Bluff
Hanford	K6EL	DX	144.950	South Fork Mtn - Redding area
	K6UR	DXFRES	144.950	Bear Mtn, Fresno area
	K6UR	DX7	145.770	Mt. Adelaide, Bakersfield area
	K6UR	DX16	145.770	Oakhurst
Livermore	NF6S	DXL	145.770	Tri-Valley area
Los Gatos	N6ST	DXLG	146.580	Santa Cruz Mtns, Monterey Bay
	N6ST	DXF	146.580	Santa Cruz/Los Gatos
Mountain View	K6LLK	DXMV	144.950	Mountain View, San Jose area
Oakdale	K6OQ		146.580	Modesto area
Penngrove	K6ANP	DXANP	145.670	Sonoma County
Reno, Nevada	N7TR	RENODX	144.950, 146.58, 441.500	(2400 baud), 51.7
	N7TR	PCDX1	146.580	Low Level in Reno
	N7TR	PCDX	144.950	Virginia City, NV
	N7TR	DX2400	441.500	(2400 baud)
Rio Linda	K6NP	DXRL	144.950	Sacramento, Woodland, Davis

Bob Vallio - W6RGG      wsixrgg@crl.com

paragraphs 20-27 of the NPRM&O, available on the ARRL Web site <<http://www.arrl.org/news/stories/2001/10/19/1/290a11.html>>. Interested parties may file comments using the FCC's Electronic Comment Filing System, <<http://www.fcc.gov/e-file/ecfs.html>> (search using "01-278"). Commenters should include full name, US Postal Service mailing address, and applicable docket or rule making number--in this case ET 01-278.

It's also possible to e-mail comments via the ECFS. To obtain e-mail filing instructions, commenters should send an e-mail to [ecfs@fcc.gov](mailto:ecfs@fcc.gov) and include the words "get form <your e-mail address>" in the body of the message. A sample form and directions will be sent by reply e-mail.

**EOF**

## PC-SAT operation is reduced due to power issues.

*by Dave "Zonker" Harris N6UOW*

Many folks have already operated APRS through this HAM satellite. For those unfamiliar with the PC-SAT program, please take a look at the description of the project on Bob Bruninga's PC-SAT page (<http://www.ew.usna.edu/~bruninga/pcsat.html>)

Here is a summary of the recent issues concerning the PC-Sat power and operations schedules. If you missed these bulletins through the web sites and mailing lists you read, we've copied the original notes from Bob Bruninga below.

In short, the PC-SAT will not be getting as much power from the solar panels until later in January. Always keep an eye on the telemetry packets, and DO NOT USE IT if the telemetry reads all-ones.

Dave, N6UOW  
<http://www.baker-to-vegas.org>

---

[ sent 14 NOV ]

### Cease transmitting via PCsat.

*I was unable to connect with PCsat command channel on the last two passes and it sounds like it is in a low power crisis. Until we figure this out, please cease transmitting via PCsat immediately.*

*We need every milliwatt-hour to get it to complete a connection with us.*

Thanks  
de WB4APR@amsat.org, Bob

PCsat WEB page:  
<http://www.ew.usna.edu/~bruninga/pcsat.html>

ISS-APRS FAQ:  
<http://www.ew.usna.edu/~bruninga/iss-faq.html>

CUBESAT Designs  
<http://www.ew.usna.edu/~bruninga/cubesat.html>

APRS LIVE pages  
<http://www.ew.usna.edu/~bruninga/aprs.html>

APRS SATELLITES:  
<http://www.ew.usna.edu/~bruninga/astars.html>

MIM/Mic-E/Mic-Lite  
<http://www.toad.net/~wclement/bruninga/mic-lite.html>

---

[ sent 15 NOV ]

### PCsat is OK.

*We got control back this morning and got PCsat put back into low power mode. Thanks to everyone for your patience. PCsat is in higher than average eclipse period and when it experiences a reset back to Telemetry showing 1111111, then the back-up UHF receivers are both on. They draw twice the power of the VHF RX and so we must keep them off during these eclipse times.*

*You may resume "cautionary" NORMAL*

*operations as long as the telemetry is showing 00111111. But if you see 11111111, then cease "routine" operations until we can get it back into low power mode.*

*We will go through a 5% improvement in solar power for 2 weeks starting 20 Nov, but then its back to low power mode until we get full sun the first 2 weeks of January! Then we can turn back on everything including the GPS.*

Thanks!  
de WB4APR, Bob

---

[ sent 18 NOV ]

### There are many cyclic effects on PCsat's power budget:

- 1) Daily Eclipse cycle
- 2) Annual phases of the sun and seasons
- 3) Precession of the orbit every 3.5 months (15 mins earlier per day)
- 4) Changing times of command station access relative to waking hours
- 5) Peak operating loads of users (evening Prime time)
- 6) Weekday versus weekend day users

*All of these cycles fell into phase in the negative direction this last week and put PCsat in a power crunch causing resets every orbit during eclipse.*

*We can fix some of this easily. Remember that PCsat goes though the same day/night cycle as we all do but 15 times a day. Thus, if is daylight in your area during a pass, then PCsat is in the sun. If it is dark, then PCsat is in eclipse. If it is past midnight for you, then PCsat is more than half way through eclipse. If it is before sunrise, then PCsat is in its worst case, near then end of an eclipse.*

*Here is what we can do as a first step simple fix:*

- 1) Ask for all operations to cease after 2300 local time everywhere (this reduces PCsat battery load during eclipse with little user effect)
- 2) Ask all users to divide their NIGHT

time rates by 2 or 4 and or cease routine (non travelers) usage at night.

*The question is whether users will adopt these measures? So far usage over the USA seems lighter than Europe. Is it all more or less in accordance with the mission of PCsat? Or is there still some routine types of usage that if minimized, might improve the user power budget substantially?*

de WB4APR@amsat.org, Bob

PCsat WEB page:

<http://www.ew.usna.edu/~bruninga/pcsat.html>

**EOF**

## Board of Directors Electronic Meeting

*Excerpts of the NCPA board remailer traffic, October 4, 2001 through November 26, 2001. Compiled by Gary Mitchell WB6YRU (full text of traffic is available).*

Oct. 4, 2001

Discussion continues regarding ads in the Downlink. Treasurer (Howard N6HM) likes the idea of having paid ads. Consensus is we'll not have ads now, will worry about it later.

Oct. 16, 2001

Gary WB6YRU: There will be an informal NCPA/NARCC meeting at Pacificon to work on the 70 cm band plan. Still no word yet on a room for our general meeting.

Oct. 19, 2001

Gary WB6YRU: Howard N6HM still has not been able to find out about our room at Pacificon—looks like our meeting will be a bust.

Oct. 20, 2001

Allan Chapman W6MEO: Asked about backup software.

Oct. 23, 2001

Gary WB6YRU posted the 70 cm band

plan that was decided upon at Pacificon, asked for comments

Bob W6RGG: Does this mean NARCC secretary will remove the ATV transmitter from the digital part of the band at 433.25?

Bob W6OPO: NARCC can not "move" a station, that one doesn't have a NARCC coordination anyway.

Bob W6RGG: Oops – the ATV station I meant was the guy in Marin, not the NARCC secretary (similar call signs).

Gary WB6YRU: You must mean the ATV guy in San Rafael who broadcasts weather maps.

So, what about the 70 cm plan?

Bob W6RGG: I like it.

Nov. 13, 2001

Gary WB6YRU: The Downlink will be coming out soon, please send articles within the next couple of weeks. The NCPA will have a "make up" meeting January 12 in Sunnyvale.

Nov. 19, 2001

Mike WA6ZTY: ATV noticed in Berkeley on 433.25 and 437.75. It might be that San Rafael guy again.

Dale N2RHV: Why is this a problem? It is planned for ATV in that band and I like using cable 56-58 to pick it up with no fancy equipment. Time to get digital off 70 cm anyway.

Mike WA6ZTY: The 70 cm band plan allocation for ATV is 426 to 432 MHz. The 432 to 438 slot is divided between Weak Signal, Digital, Satellite, and experimental. The Northern California bbs forwarding backbone is coordinated in that segment and takes serious performance hits when ATV appears there.

Nov 19, 2001

Steve Hess kc6kge: last time I checked the proposed "new" 70 cm band plan it still shows 434 as ATV channel 2. how can you justify all the bandwidth you all seem to think you need? You still have 220 and 2 meters with assigned channels on both.

Dale N2RHV:

NARCV says otherwise: (433.000 - 439.000 ATV Simplex and Remote Base) And the national band plan is similar.

You guys need to promote your BBS system to the masses

The County EOC BBS system we use as KE6AGJ-1. The county shelled out \$27 K to set it up and it still don't work most of the time. Mostly computer and software problems I think. It has no connection to the "backbone" - wish it did.

Howard N6HM: The BBS in Sunnyvale works. The one he is referring to is associated with Santa Clara County OES. This whole network is keyboard to keyboard as the BBS's are non-forwarding.

Eric Williams WD6CMU: Mike may not have made it clear, but a 434 ATV repeater conflicts with internationally allocated satellite channels and violates FCC regs 97.205(b).

Steve KC6KGE: That is pure B.S. ATV has been there for years coexisting with weak signal et al. Please prove your statement.

Mike WA6ZTY:

Eric is right, I just looked up the section and it specifically prohibits repeater operation in the 435 MHz to 438 MHz spectrum. The IARU Region 3 Band Plan also shows it to be Satellite spectrum.

It is also difficult for me to imagine that Weak Signal folks would welcome, in their sub-band, wideband signals that do nothing for them except to raise the noise floor. As for Digital folks, our 433 MHz backbone had been plagued with poor performance for years, it was only recently that the cause was found to be ATV sideband energy.

Eric WD6CMU:

That's right, Steve, they've been breaking the rules for years, and they've freely admitted it.

97.205 (b) A repeater may

receive and retransmit only on the 10 m and shorter wavelength frequency bands except the 28.0-29.5 MHz, 50.0-51.0 MHz, 144.0-144.5 MHz, 145.5-146.0 MHz, 222.00-222.15 MHz, 431.0-433.0 MHz and 435.0-438.0 MHz segments.

Steve KC6KGE: Why don't you guys set up a UHF "repeater" and go full simi/full duplex at high power?

Nov 23, 2001

Gary WB6YRU (responding to several comments):

Dale N2RHV wrote:

*Why is this a problem? It is planned for ATV in that band and I like using cable 56-58 to pick it up with no fancy equipment.*

It's nice to be able to use unmodified commercial equipment, but that possibility isn't a deciding factor in amateur radio band planning.

Dale N2RHV wrote:

*Time to get digital off 70 cm anyway.*

This is a digital remailer--the electronic form of a NCPA meeting. Are you trying to pick a fight?

It may interest you to know that many in NARCC say the same thing about ATV.

There has to be room available in each band for all activities. The only exceptions should be for technical reasons...For example, there couldn't be a 6 MHz wide activity on 1.25 meters or below--there simply isn't room.

We don't begrudge ATV space at 70 cm. By the same token, they shouldn't begrudge digital some space too.

Steve KC6KGE wrote:

*Well last time I checked the proposed "new" 70 cm band plan it still shows 434 as ATV channel 2.*

Is that from NARCC's web page? I was told that was going to be

removed/corrected. However, the last time I checked, all they did was put a note in that it was under review.

Steve KC6KGE wrote:

*What happened to all the plans you had to go to higher speed backbones?*

Spectrum is needed for that. The proposed frequencies for high-speed channels were never completely settled. As of late October, a new 70 cm band plan was hammered out. It still needs to be ratified.

Steve KC6KGE wrote:

*How can you justify all the bandwidth you all seem to think you need? You still have 220 and 2 meters with assigned channels on both.*

BBS isn't the only digital activity. The wide-band digital channels at 220 are not available. Two meters was reserved for users long ago. There isn't room for any high-speed channels at two meters.

(responding to Dale's node comment): There are two basic flavors of nodes: forwarding and user. The forwarding nodes are not published. It would be nice to have a list of user nodes, but there hasn't been much interest for some reason.

Dale N2RHV wrote:

*My point is that you need to promote your system to the masses - not just the BBS operators.*

That's been tried, at some expense...turned out to be a waste of money/effort. The NCPA, has been active at Pacificon trying to promote packet etc.

Dale N2RHV wrote:

*It is the County EOC BBS system we use as KE6AGJ-1. The county shelled out \$27 K to set it up and it still don't work most of the time. Mostly computer and software problems I think. It has no connection to the "backbone" - wish it did.*

Well, you guys can't just sit there and whine about not being connected. The PSNC (BBS sysop group) would be happy to welcome in a new BBS--with

forwarding. And you spent \$27,000?! On one BBS?! With those kinds of deep pockets, we could work miracles.

Dale N2RHV wrote:

*Actually I wish it connected to a internet server as APRS does so we can get digital info in and out of a disaster communications blackout area.*

Some of the PSNC BBS's have internet ability. A lot of the standard BBS traffic gets passed at one point or another via internet.

Steve KC6KGE wrote:

*That is pure B.S. ATV has been there for years coexisting with weak signal et al. Please prove your statement.*

It's not BS at all. You certainly don't have to take Eric's word for it, he gave the part 97 reference--look it up yourself!

The OO's and section managers I've talked to all agree ATV repeaters at 434 are illegal since some of their signal will show up in these forbidden segments. Just because they've been there for however long doesn't somehow make it OK.

Steve KC6KGE wrote:

*Why don't you guys set up a UHF "repeater" and go full simi/full duplex at high power?*

I'm told, there are precious few pairs available at 70 cm. Duplex would certainly help throughput over simplex, but wider band is need too for high-speed. If someone wants a digital repeater, they're free to do so, but they'd need a coordination from NARCC.

Nov 26, 2001

Dale Jr, William N2RHV: I am the EC in Milpitas and our group holds meetings on the second Thursday of each month. Is there anyone who has been active in NCPA and packet (other than APRS) who could come to one of our meetings and discuss these issues?

Howard N6HM: I'm interested.

**EOF**

# Northern California Packet Band Plan

N C P A

November 2001

## 50 MHz

50.60-50.80 (20 kHz channels, non-specific at this time)  
51.12 SCA backbone  
51.14 BBS  
51.16 Keyboard to Keyboard  
51.18 Experimental  
51.62 TCP/IP, 9600 baud  
51.64-51.68 (20 kHz channels, non-specific at this time)

NOTE: On this band adjacent channel interference is harder to overcome for repeaters. NARCC requests that any new six meter permanent packet installations (such as nodes) please check with their six meter coordinator. You don't need to get a formal coordination, but they would like to be aware of your station and have an opportunity to check for possible conflicts first.

---

## 144 MHz

144.31 BBS  
144.33 Balloon & experimental  
144.35 Keyboard to Keyboard  
144.37 BBS LAN forwarding  
144.39 APRS (U.S. and Canada)  
144.41 duplex, lower half (145.61 upper half, 1.2 MHz split)  
144.43 TCP/IP (OK to run duplex with 145.65)  
144.91 Keyboard to Keyboard  
144.93 BBS  
144.95 DX Spotting  
144.97 BBS  
144.99 BBS  
145.01 User access  
145.03 Keyboard to Keyboard  
145.05 Keyboard to Keyboard  
145.07 BBS  
145.09 BBS  
145.61 duplex, upper half (144.41 lower half)  
145.63 BBS  
145.65 TCP/IP 9600 bps (OK to run duplex with 144.43)  
145.67 DX Spotting  
145.69 BBS  
145.71 9600 bps  
145.73 BBS  
145.75 TCP/IP  
145.77 DX Spotting  
146.58 DX Spotting

### NOTE:

Allocations from 144.31 through 144.43 are relatively close to the weak-signal sub-band—please watch your FM deviation.

---

## 220 MHz

219.05-219.95 100 kHz channels, Backbone  
223.54 LAN  
223.56 LAN  
223.58 LAN, Gilroy (GARLIC)  
223.60 LAN, Sacramento Valley (SACVAL)  
223.62 LAN, South Bay (SBAY)  
223.64 TCP/IP  
223.66 Keyboard to Keyboard  
223.68 DX Spotting Backbone  
223.70 LAN, Monterey Bay & North Coast (MRYBAY)  
223.72 LAN, North Bay (NBAY)  
223.74 Backbone, DX Spotting

### NOTES:

- 219 channels are by coordination only. There are currently political problems with using 219-220, making them unavailable in most of northern CA.
  - On 223.58, TCP/IP interlink (Sacramento) is secondary, not to interfere with node uplink.
- 

## 440 MHz

433.05 TCP/IP backbone (100 kHz)  
433.15 BBS backbone (100 kHz)  
433.25 DX Spotting backbone (100 kHz)  
433.33 Experimental (60 kHz)  
433.37 BBS, 9600 baud  
433.39 DX Spotting  
433.41 BBS LAN  
433.43 9600 baud TCP/IP  
433.45 BBS LAN  
433.47 Keyboard Interlink  
433.49 TCP/IP  
433.51 Keyboard  
433.53 Keyboard  
433.55 BBS LAN  
441.50 Any digital

NOTE: An agreement on the general band plan for 70 cm was reached recently, but has yet to be ratified. Until then, the following duplex pair are tentative:

431.45 / 434.85 Duplex (100 kHz)  
431.55 / 434.95 Duplex (100 kHz)  
431.65 / 438.40 Duplex (100 kHz)  
431.85 / 438.60 Duplex (100 kHz)  
431.95 / 438.70 Duplex (100 kHz)

---

## 900 MHz

903.500 1 MHz wide, TCP/IP  
904.500 1 MHz wide, TCP/IP

915.500 1 MHz wide, experimental  
 916.100 200 kHz wide, experimental  
 916.300 200 kHz wide, experimental  
 916.500 200 kHz wide, experimental  
 916.650 100 kHz wide, experimental  
 916.750 100 kHz wide, experimental  
 916.810 20 kHz wide, experimental  
 916.830 20 kHz wide, experimental  
 916.850 20 kHz wide, experimental  
 916.870 20 kHz wide, experimental  
 916.890 20 kHz wide, experimental  
 916.910 20 kHz wide, experimental  
 916.930 20 kHz wide, experimental  
 916.950 20 kHz wide, experimental  
 916.970 20 kHz wide, experimental  
 916.990 20 kHz wide, LAN links (Contra Costa County only)

**NOTE:**

900 MHz activity is on a non-interference basis to vehicle locator service. This sub-band is not considered suitable for omnidirectional systems. Use for point-to-point links only.

**1296 MHz**

1248.500 1 MHz wide, experimental\*  
 1249.000-1249.450 Unchannelized, experimental  
 1249.500 100 kHz wide, experimental  
 1249.600 100 kHz wide, experimental  
 1249.700 100 kHz wide, experimental\*  
 1249.800 100 kHz wide, experimental\*  
 1249.870 20 kHz wide, experimental  
 1249.890 20 kHz wide, DX Packet Spotting  
 1249.910 20 kHz wide, experimental\*  
 1249.930 20 kHz wide, experimental\*  
 1249.950 20 kHz wide, experimental\*  
 1249.970 20 kHz wide, experimental\*  
 1249.990 20 kHz wide, experimental\*  
 1250.500 1 MHz wide, experimental  
 1251.500 1 MHz wide, experimental  
 1297.000-1298.000 Unchannelized, experimental  
 1298.500 1 MHz wide, experimental\*  
 1299.000-1299.450 Unchannelized, experimental  
 1299.500 100 kHz wide, experimental  
 1299.600 100 kHz wide, experimental  
 1299.700 100 kHz wide, experimental\*  
 1299.800 100 kHz wide, experimental\*  
 1299.870 20 kHz wide, BBS LAN  
 1299.890 20 kHz wide, DX Packet Spotting  
 1299.910 20 kHz wide, BBS LAN  
 1299.930 20 kHz wide, experimental\*  
 1299.950 20 kHz wide, experimental\*  
 1299.970 20 kHz wide, experimental\*  
 1299.990 20 kHz wide, experimental\*

\* Full duplex channel pairs at 50 MHz separation, example:  
 1249.910 ↔ 1299.910

**Definitions**

9600 BPS Stations using 9600 baud with direct FSK (G3RUH, TAPR, etc.) modems.

Backbone No uncoordinated stations. These channels are for specific purposes as defined by the NCPA and/or affiliated groups. These are frequencies where the various BBS, nodes, and networks forward traffic and are very high volume channels. Please use the normal user entry points of the network you want to access rather than these channels.

BBS These frequencies are for user access to a full-service BBS. Keyboard-to-keyboard is tolerated. Please don't put high level nodes or digipeaters on these channels since they are local. A low-level direct link or node that links into a backbone on another frequency is the proper implementation.

Duplex Simultaneous transmit and receive by a single station, including digital repeaters. Duplex channels are intended for high-volume applications. 9600 baud or higher is encouraged, but not required at this time.

DX Spotting Northern California DX packet spotting network. No other activity should be on these channels.

Experimental Anything goes except full service BBS or any 24 Hr/Day services (nodes, gateways, etc). This is where you can test new gear, programs, etc. These channels may be reassigned in the near future, so no permanent activities please.

Forwarding same as *backbone*

Keyboard to Keyboard Primarily chat channels. These are also the primary emergency channels. No high-volume activity such as full service BBS, DX Spotting, TCP/IP, etc.

Interlink same as *backbone*

LAN Local Area Network. BBS's are grouped into LAN's for more efficient forwarding. A LAN frequency is the forwarding channel within a LAN and to the backbone. Please do not attempt to access the BBS network on these channels.

Personal mailbox/mailedrop A BBS-like system, often running entirely within a TNC, with a small number of users that handles information of a personal, local or special-purpose nature. A mailbox is allowed on keyboard-to-keyboard channels ONLY if it does not forward with other BBSs. Mailboxes may forward with full-service BBSs on LAN channels at the discretion of the BBS SYSOP.

TCP/IP Stations using TCP/IP protocol on top of AX.25. Some AX.25 tolerated to communicate to TCP/IP stations if a compatible p-persistence access method used.

User Access User access to a network. This is for the next generation of packet which is expected to operate like the internet. Users would access such a network on these frequencies. The load on these channels may be rather high, like BBS channels. The activity may be any combination of BBS, keyboard, TCP/IP, or other modes.

---

## Procedure for changes

Send requests for changes to either the frequency coordinator or the NCPA board. The frequency coordinator will then present the request to the board along with suggested assignments. The NCPA board, elected by you, the packet user, makes all assignments.

---

## Misc. Info.

Packet tends to splatter if the deviation is set too high. Please keep your deviation to less than 5 kHz.

Except for the 219-220 MHz segment, the NCPA currently does not coordinate individual stations, nodes, etc. leaving that to the special interest groups. BBS station coordination is done by the PSNC in Northern CA. DX spotting is coordinated by DXPSN. Some digital has been coordinated on auxiliary channels by NARCC.

The NCPA board conducts most of its meeting activity electronically by internet e-mail remailer, [ncpa@qth.net](mailto:ncpa@qth.net). As with face-to-face board meetings, interested persons are welcome. Subscribe to the remailer by sending e-mail to [majordomo@qth.net](mailto:majordomo@qth.net) with "subscribe ncpa" as the message (don't include the quote marks). Subscribing to the remailer is like attending a continuous NCPA board meeting. One must subscribe before posting messages.

---

# 70 cm General Band Plan

The following general band plan for 70 cm was agreed to by the NCPA, NARCC, et al, but has yet to be ratified. Ratification is expected, probably by the end of January.

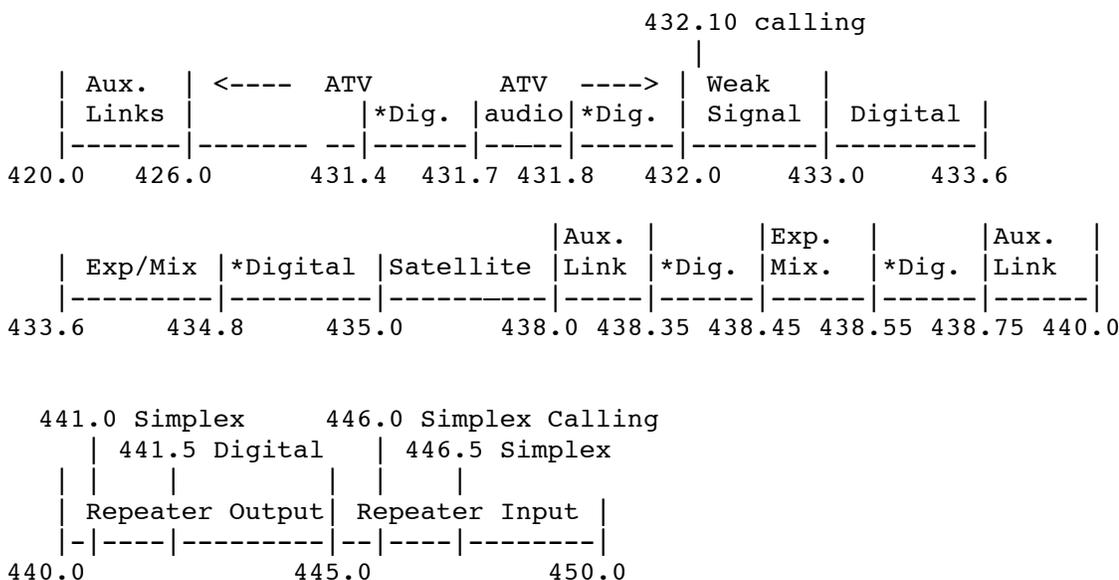
The significant differences between this plan and what was published previously (as a tentative plan) are:

1) The number and location of 100 kHz high-speed digital duplex channels has changed. This NARCC proposal puts the lower half of five digital duplex channels at the top end of the ATV channel. Two of the upper digital duplex channels are at 434.8-435.0, the others are at 438 MHz.

2) The 433 digital segment is now 433.0 – 433.60 (existing allocations are not affected)

3) Mixed and Experimental has been given two segments, 433.60-434.80 and 438.45-438.55.

Certain factions in NARCC were concerned about low power ATV devices (such as model airplane cameras etc.) which are shipped set to 434 MHz. While ATV is not allocated at 434 in this region, this plan makes an attempt to keep interference to a minimum if those ATV devices are used. It is expected that activity from ATV devices at 434 will be exceedingly rare.



\*Digital 100 kHz duplex channels. Lower duplex: 431.45, 431.55, 431.65, 431.85, and 431.95 MHz. Upper duplex: 434.85, 434.95, 438.40, 438.60, and 438.70 MHz.  
ATV: video carrier at 427.25, aural carrier at 431.75 MHz.

## Northern California Packet Association

The NCPA fosters digital communications modes of amateur radio through education, band planning, and acts as an umbrella organization for various packet special interest groups. Your annual dues helps pay for this newsletter and other educational materials activities. If you might be interested in getting more involved, please let us know.

Call: \_\_\_\_\_ Home BBS: \_\_\_\_\_ e-mail: \_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip + 4: \_\_\_\_\_ Phone: \_\_\_\_\_

- New Membership     Renewal     Change of Address     I'm an ARRL Member  
 One year: \$10     Two Years: \$20     Three years: \$30  
(make checks payable to NCPA)

Please indicate your area(s) of interest:

- BBS SysOp     BBS User     APRS     NET/ROM     TCP/IP     High-speed packet  
 DX Packet Spotting Network     Keyboard to Keyboard     FCC/legal issues     Other:

**NCPA** *Downlink*

**Northern California Packet Association**

**PO BOX K**

**Sunnyvale CA 94087**

**First Class**