W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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In This Issue...

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FCC Proposes to Allocate New Ham Bands to Amateur Service

"This action proposes changes that would enhance the ability of amateur radio operators to conduct technical experiments, including propagation and antenna design experiments, in the "low frequency" (LF) range of the radio spectrum. In addition, the NPRM proposes to authorize the use of the 5250 kHz band so that amateur licensees' can better match their choice of frequency to existing propagation conditions. The Notice, by proposing to upgrade the amateur radio service allocation and add a primary amateur-satellite service allocation in the 2400-2402 MHz band, seeks to protect current amateur use of this band." (Adapted from FCC Public Notice)

The FCC has adopted a *Notice of Proposed Rulemaking* (ET Docket No. 02-98) proposing to allocate the 135.7-137.8 kHz (low frequency, LF) and 5250-5400 kHz (HF) bands to the Amateur Radio Service on a secondary basis. The Commission also proposed to upgrade the existing secondary Amateur Radio Service allocation in the 2400-2402 MHz band to primary status and to add a primary allocation for the Amateur-Satellite Service in this band.

The amateur community can thank the ARRL for all of this. The FCC voted unanimously on May 2nd to go along with the League's three petitions. The NPRM was released on May 15th while we were at the Dayton HamVention.

Low frequency (2200 meter) band

On October 22, 1998, the ARRL filed a *Petition for Rule Making* requesting that the FCC create two domestic secondary LF allocations for the Amateur Service at 135.7 to 137.8 kHz and 160 to190 kHz. There are currently no Amateur allocations in the LF spectrum range. Internationally, the band 130 to 148.5 kHz is allocated to the fixed and maritime mobile services on a primary basis.

Section 15.217 permits use of the 160 to 190 kHz band for general unlicensed operations limited to one watt total input power. The League pointed out that numerous amateur radio and non-amateur radio operators in the U.S. are already using the 160-190 kHz band under Part 15.

The petition asked for more liberal operating conditions: an output power limit of 200 W peak envelope power (PEP) and 2 W effective isotropic radiated power (EIRP). "These power limits would allow amateur radio operators to conduct antenna design and construction experiments, and long-range propagation studies with continuous wave (CW, Morse) telegraphy," ARRL said.

Several countries in Europe and elsewhere already have 136 kHz amateur allocations. The first amateur transatlantic contact on the band was recorded in Feb. 2001.

The *European Posts and Telecommunications Commission* (CEPT) countries have provided a secondary amateur allocation in the 135.7-137.8 kHz band and limited power output to 1 W effective radiated power (ERP). In addition to the general CEPT decision, individual CEPT member nations have instituted their own domestic rules. The ARRL noted that Belgian radio amateurs are permitted to use up to 1 kilowatt transmitter output power.

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Thirty-two parties filed preliminary comments on the ARRL's LF Petition. Amateur operators generally supported an amateur allocation in the LF range. Some commercial users and organizations did not.

The FCC, however, agreed that an allocation in the LF range "...would serve the public interest because Amateur experimentation could lead to a better understanding of communication techniques in this frequency range [and] would allow amateur radio operators the ability to experiment more freely with propagation, antenna design and antenna construction." Hams would be secondary to the Fixed and Maritime Mobile services in the 136-kHz allocation.

"Incumbent use of the 135.7-137.8 kHz band is relatively light and thus a secondary Amateur Service allocation in this band raises few concerns," FCC added that "The Amateur Service has extensive experience in operating on a secondary basis with primary status services in frequency bands with long-range capabilities and we believe the same would apply here."

" We expect that interference would be rare because amateur radio operators have apparently demonstrated their effective use of the 'listen-before-transmit' protocol, which also can be utilized with the primary users of this band."

To facilitate sharing, FCC proposed lower power levels than requested by the ARRL. The FCC wants to limit the EIRP to 1 W and the transmission bandwidth to 100 Hz. "Because of possible difficulty in measuring the EIRP of the amateur station in this frequency range, we additionally propose to limit amateur output power in this band to 100 W PEP." The FCC did not suggest restricting antenna size or design for amateur stations because "...such restrictions would inhibit experimentation...."

As requested by the ARRL, access to the band would be limited to Amateur operators holding a General, Advanced, or Amateur Extra Class license. With an allocation of only 2.1 kilohertz of spectrum in this band, amateur radio operations "...would be limited to propagation experiments, telegraphy and low speed data [and RTTY] applications," FCC said.

Although the League said its engineering surveys suggest that hams could operate without causing problems to power line carrier (PLC) systems, the Commission declined to provide an allocation in the 160 to 190 kHz band.

The FCC observed that "...significant PLC use continues in this band in many locations" and "...there does not appear to be interest internationally in adding Amateur Services in the 160-190 kHz band." Unallocated Part 15 PLC systems are used by electric utilities to send control signals, data and voice.

Amateur radio operations in the 160 to190 kHz band under the Part 15 rules will not be affected. "Under these rules, amateur operations must meet certain power and antenna length requirements, but they also are allowed to build and operate some equipment of their own design."

60-meter (5250-5400 kHz) band

Internationally and nationally, the 5250-5400 kHz band is allocated on a primary basis to the fixed service, and on a secondary basis to the mobile service. There is currently no international Amateur Service allocation in this band. In the United States, the 5250-5400 kHz is primarily used by the U.S. Government for ship-to- shore and fixed point-to-point communications.

The League said the trend for existing 5 MHz fixed service operations is to migrate to "alternative technologies" such as microwave, satellite and fiber for long-haul communications. The organization therefore, believes that this band should become increasingly available for Amateur Radio use.

On January 8, 1999, the FCC granted an experimental (WA2XSY) license to the League so that 15 stations could compare communications reliability between the 3500-4000 kHz, 5100-5450 kHz and 7000-7300 kHz bands. The ARRL said the results of this experiment shows that Amateur stations can indeed co-exist with incumbent operations without causing harmful interference. "There have been no reports of interference attributable to amateur operations."

On July 24, 2001, ARRL filed a formal *Petition for Rule Making* (assigned RM-10209) requesting that the FCC create a domestic secondary Amateur Service allocation in the 5250-5400 kHz band. The League claimed "...there is a current need for 150 kilohertz of usable spectrum around 5000 kHz for the Amateur Service, and that this action is needed to fill the ionospheric propagation gap between the propagation paths provided by the Amateur Service allocations in the 3500 to 4000 kHz (80-meter) and 7000 to 7300 kHz (40-meter) bands."

The League maintains that there are times when the existing Amateur Service allocations in the 80 and 40 meter bands do not provide reliable communications due to solar cycles, seasonal and daily variations in the ionosphere and overcrowding; "...an allocation in the 5000 kHz range would provide optimum propagation conditions on occasions when ionospheric conditions do not permit the use of other frequency bands."

ARRL added that this "propagation gap" occasionally interrupts emergency communications by amateur radio operators between the U.S. and the Caribbean Islands during hurricanes and severe weather disasters.

The League said this new amateur band is supported by both the U.S. Dept. of Commerce and the IARU (International Amateur Radio Union) and there are pending proposals for an Amateur allocation around 5000 kHz in Europe. The United Kingdom is studying the 5245 to

5445 kHz band to address propagation, noise and congestion problems for amateur HF communications.

The ARRL suggested that the technical rules for this band be the same as for the 3500 kHz and 7000 kHz bands, i.e., output power would be limited to 1500 watts PEP with the entire band authorized to RTTY, data, phone and image emission types.

The FCC agreed that "ARRL's experimentation appears to support its contention that the 5000 kHz frequency band can be effective in supporting communication when the 3500 kHz and 7000 kHz bands are not [usable.] Therefore, we tentatively conclude that the Amateur Service would benefit from a secondary allocation in the 5250 to 5400 kHz band and propose to establish such an allocation."

"The primary allocation to HF broadcasting in Europe and parts of Asia also hinders certain Amateur operations in two-thirds of the 7-MHz band in the evenings," FCC noted. Amateurs are required to "operate around" these primary users.

"It appears that Amateur Radio operators should be able to avoid interference to primary operations in the 5250 to 5400 kHz band due to the limited numbers of primary assignments which are authorized for operation in the band, and their experience in sharing HF frequencies in other bands."

"The operational protocol of 'listen-before-transmit' employed by amateur radio operators should further minimize interference." Noting that this technique is not explicitly required by Part 97, the FCC requested comment on whether it should be clearly stated in the Rules in order to protect the primary operators in the 5250 to 5400 kHz band.

As requested by the ARRL, the FCC proposed to limit the output power to 1500 W PEP and invited comments as to whether the 5250-5400 kHz band should be restricted to Amateur Extra Class operators "...to better ensure compatible sharing with the Federal Government operations." Alternatively, the band could also be made available to operators with a General or higher class license as currently authorized in the 10.1 to 10.15 MHz (30 meter band).

The Commission also asked for comment on whether the power limit and operator license requirement are sufficient to prevent interference to primary users, and whether an EIRP limit would be appropriate for this band.

"The 5000 kHz Petition does not discuss sub-banding and ARRL's suggested rules would allow all emission types to use the entire band," FCC observed.

Several commenters suggested that the lowest 25 kHz of the band should be set aside for CW/digital data modes and the rest for SSB as currently is the policy most of the other HF bands. The FCC asked for comment on whether narrow band emissions should be segregated from wider emissions like single-side band voice.

The band, if approved, would be the first new amateur HF allocation since World Administrative Radio Conference 1979 gave amateurs 30, 17 and 12 meters - the so-called "WARC Bands."

Primary Status for Amateur Service at 2.4 GHz

Internationally, in all three ITU Regions, the 13-cm band 2300-2450 MHz is allocated on a co-primary basis to the fixed and mobile services and on a secondary basis to the Amateur Service. Further, industrial, scientific and medical (ISM) devices operate at 2400-2500 MHz and users in this band must accept interference caused by these devices.

The Amateur-Satellite Service is also permitted to operate in the 2400-2450 MHz band on a non-interference basis. In the United States, unlicensed Part 15 transmitting devices are also permitted in the 2400-2483 MHz band on a non-harmful interference basis to licensed services. These devices are used for a variety of operations including cordless phones, wireless local area networks, and other broadband wireless applications using industry standards protocols such as IEEE 802.11b and Bluetooth.

On November 18, 1999, the Commission adopted a *Policy Statement* concluding that the 2400-2402 MHz band should be placed into a spectrum reserve for future "new technology" applications. Responding to this action, the ARRL filed a *Petition for Rule Making* (assigned RM-9949) on July 17, 2000, requesting that the 2400 to 2402 MHz band allocation be upgraded to primary status in both the Amateur and Amateur-Satellite services.

Radioamateurs use this spectrum slice for both analog and digital satellite uplink and downlink operations and various other satellite applications. Amateurs already are primary at 2390 to 2400 and from 2402 to 2417 MHz. In support of its request, ARRL said that a primary allocation in the remaining 2-MHz would protect its operations from reallocation or use by an incompatible sharing partner.

The League said that upgrading the Amateur and Amateur-Satellite Service allocations in this band would not impose constraints on co-frequency Part 15 and Part 18 devices because this band is located at the lower edge of the segment in which such devices operate.

The Radio Amateur Satellite Corporation (AMSAT) commented that the Phase 3D satellite was built mostly by volunteers from a number of countries at a cost of approximately $4 million. This satellite carries a group of broadband receivers that operate in various bands available to the Amateur-Satellite Service from 21 MHz to 5.7 GHz and broadband linear transmitters that operate in various amateur-satellite service bands from 144 MHz to 24 GHz. Two of Phase 3D's satellite transmitters are in the 2400-2402 MHz band, as is one of its receivers. Furthermore, primary status is needed "...to provide some

assurances of future occupancy of the band segments for the next generation of amateur satellites."

The FCC said it believed that ARRL's request to upgrade the allocation status of the 2400-2402 MHz band has merit. The Amateur Service "...has invested time, effort and money in the development of the Amateur and Amateur-Satellite Services and primary allocations in this band would protect this investment from future allocation requests in the band."

Accordingly, the FCC is proposing to upgrade the Amateur Service allocation from secondary to primary status and to add a primary allocation to the Amateur-Satellite Service in the 2400-2402 MHz band. Amateur satellite operators will still be required to protect other services operating in this band outside of the United States from harmful interference. Only a change in the allocation status of the 2400 to 2402 MHz band is proposed. No change in any other Amateur Service rules affecting the 13-cm band is planned.

Either a primary or secondary allocation in ISM bands must accept interference from, and not hinder the use of, ISM equipment. "Similarly, this band is extensively used by unlicensed operations, which have been able to share with Amateur Radio station use to this point. Because this band is important to unlicensed applications and there is widespread deployment, the removal of such devices would not be feasible," FCC said. The Commission asked for public comment on whether the proposed primary Amateur and Amateur-Satellite Service allocations would conflict with unlicensed use of the band.

The comment period expires 45 days after being published in the Federal Register (about July 15th.) Reply comments close 15 days later. Comments may be filed using the Commission's *Electronic Comment Filing System* (ECFS) located at: <www.fcc.gov/e-file/ecfs.html> or by filing paper copies. Due to the recent anthrax scare, electronically-filed comments are preferable.

AMATEUR STATION CALL SIGNS as of June 1, 2002:

District	Extra	Advanced	Tech./General/Novice	
0	AB0VV	KI0SG	----->	KC0NJP
1	AB1AX	KE1MD	----->	KB1IKD
2	AB2RE	KG2RP	----->	KC2JRU
3	AA3ZZ	KF3EC	----->	KB3IDY
4	AG4SR	KV4GJ	----->	KG4TNH
5	AD5IJW	KM5XQ	----->	KD5SQS
6	AE6FB	KR6FB	----->	KG6LKK
7	AC7TT	KK7XH	----->	KD7RNC
8	AB8OM	KI8KD	----->	KC8UAI
9	AB9FS	KG9RA	----->	KC9BVO
Hawaii	----->	AH6RM	KH7ZZ	WH6DGS
Alaska	----->	AL7RR	KL1IM	WL7CVQ
Virgin Isl.	----->	KP2CS	NP2LY	WP2AIN
Puerto Rico	WP3T	KP3BN	WP3RJ	WP4NOZ

[Source: FCC Amateur Service Database, Washington, DC]

LANDMARK "CC&R" BILL INTRODUCED INTO CONGRESS PROVIDES FOR "REASONABLE ANTENNA ACCOMMODATION

Could provide Amateurs relief from prohibitive deed restrictions

On May 14, Rep. Steve Israel (D-NY, whose father is K2JCC) introduced the *"Amateur Radio Emergency Communications Consistency Act"* into Congress. H.R. 4720 would require private land-use regulators to "reasonably accommodate" Amateur Radio antennas consistent with the limited federal preemption known as PRB-1, which now applies only to states and municipalities. Rep Greg Walden, WB7OCE (R-OR) and Rep Pete Sessions (R-TX) have signed on as original cosponsors.

"Reasonable accommodation" is an extremely flexible standard, and leaves private land use administrators extensive discretion in determining what concessions for ham radio antennas are appropriate in individual cases.

Representative Israel said in a statement read into the Congressional Record that his bill would subject private land-use regulations to the provisions of the FCC's PRB-1 preemption policy. "Under current law, the FCC does not apply this policy consistently," Israel said, noting that PRB-1 now applies only to state and local zoning and land-use regulation of ham radio antennas.

"My bill addresses this issue and provides Amateur Radio licensees with the ability to negotiate reasonable accommodation provisions with homeowners' associations, just as they do now with public land-use regulators [and] will help to protect the vital function of Amateur Radio as an emergency communications and public safety resource."

As it is now, homeowner associations and residents are legally bound by land-use limitations known as "covenants, conditions and restrictions" applying to their subdivision. The FCC did not include CC&R's in their PRB-1 pre-emption because of their contractual nature.

At its July meeting last year, the ARRL Board of Directors adopted a goal of legislative action to help overcome the restrictions that CC&Rs impose on Amateur Radio antennas and their structures. League officials met with members of Congress earlier this year in an effort to obtain the needed legislation. It resulted in H.R.-4720.

The bill contains only one sentence: "For purposes of the Federal Communications Commission's regulation relating to station antenna structures in the Amateur Radio Service (Section §97.15), any private land use rules applicable to such structures shall be treated as a state or local regulation and shall be subject to the same requirements and limitations as a state or local regulation."

Speaking at the recently concluded Dayton Hamvention, ARRL president Jim Haynie W5JBP acknowledged that getting the bill passed will not be easy." He added that "...it becomes important for all of us to write or call your congressman and voice your support."

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CUTTING EDGE TECHNOLOGY

An MIT graduate student has developed an implanted (under-the-skin)microchip that will automatically dispense insulin to diabetics. Dr. John Santini's patented technology uses silicon microchips and wireless communication to accurately dispense medicine to the body. His company, MicroCHIPS (of Cambridge, Mass), should have the product out within five years.

A battery-operated fingernail-sized chip contains hundreds of tiny reservoirs which would be filled by a drug, or an assortment of drugs. Software would instruct the chip when and how much of each drug to automatically release. A gold-sealed reservoir releases a drug when a single-volt from the device's battery is run through it. The gold harmlessly slips into the body. <www.mchips.com>.

Another company, ChipRX, is focusing on devices equipped with sensors that respond to the environment — sensing, for instance, a rise in blood sugar and triggering a release of insulin. More information at: <www.chiprx.com>.

The "VeriChip" is another implantable microchip made by Applied Digital Solutions, Inc., of Palm Beach, Florida. It is a miniature radio frequency identification device (RFID) roughly the size of a grain of rice. The U.S. Food and Drug Administration said VeriChip is not considered a medical device and therefore is not subject to FDA regulation.

The chip stores a unique identification number that can be scanned and transmitted via the Internet or phone to a secure data storage site. The biochip could be used to access a person's medical information, track children and pets, Alzheimer's patients and convicted felons on parole. The technology also could be used as a tool in a national ID system.

The number is "captured" by passing a hand-held scanner over the chip, causing a small amount of radio frequency energy to pass through the skin and activate the dormant chip. The chip then transmits the stored number on a radio frequency of 125 KHz. The chip, which must be implanted by a doctor, sells for around $200 plus a $10 monthly information storage fee. See: <www.adsx.com>.

Applied Digital Solutions is already testing a more complex "Digital Angel" microchip that is able to receive GPS satellite signals and transmit a person's location. The biochip is slightly larger than a quarter and requires actual surgery to implant. Unlike the VeriChip, the Digital Angel requires FDA approval.

It is already being used in a pilot program to track Los Angeles parolees. Embedded GPS and information chips also may ultimately be an alternative to incarceration, house arrest, or ankle bracelets.

EMERGING COMMUNICATIONS

For many Americans, the ability to call for help in an emergency is the principal reason they own a wireless phone. More than one-third of all 911 calls - more than 50 million - originate from a wireless phone annually.

But that help may never arrive, or may be too late, if the 911 emergency response teams cannot locate you quickly. The *Wireless Telecommunications and Public Safety Act of 1999* and FCC wireless 911 rules not only require that wireless carriers deliver 911 calls but they must also automatically provide the 911 call center with information about the caller's location. Implementation is over a five year period.

The FCC said on May 9th that it plans to fine AT&T Wireless $2.2 million for violating its "Enhanced 911" rules on its new Global System for Mobile Communications (GSM) network. GSM is a global wireless standard that is particularly popular in Europe.

AT&T had said its GSM handsets would provide location capable technology to GSM subscribers as required by the new "E911" rules. In an Enhanced 911 system, the telephone number and exact address is automatically displayed at the 911 call center.

U.S. wireless companies were to begin offering improved location data and properly equipped handsets last fall. Eventually, mobile telephone carriers will be able to pinpoint all wireless calls to within a 100 yard radius.

But AT&T Wireless apparently deployed its GSM network without the location-capable handsets. It blames the delay on equipment vendors. To make matters worse, AT&T did not apply for a rule waiver and even said it didn't need one. Action by the Commission by *Notice of Apparent Liability for Forfeiture.* Bottom line: don't say one thing and do another.

Cable TV has narrowed the gap between it and the over-the-air broadcast networks. During the so-called "May Sweeps" ratings measuring period, basic cable averaged a 45.4 percent audience share ...up from a 40.6 last year. Broadcast share was 50.2 percent versus 53.3 percent last year. The difference is now just 4.8 points.

DBS Beats Digital Cable in Study - According to a study completed by the *Satellite Broadcasting & Communications Association*, 21 percent of digital-cable customers expressed an interest in switching to DBS, compared with 5 percent of Direct Broadcast Satellite subscribers who said they would consider leaving for digital cable. Of DBS customers polled, 57 percent had subscribed to cable in the past.

DBS scored a 68 percent approval rating on the subject of value for the money. The customer satisfaction level for analog cable was 37 percent, digital cable: 36 percent.

COMPUTERS & SOFTWARE

Low-tech procedure defeats high tech copy protection. Major music labels (including Sony) hae been deploying a new "Key2Audio"copy protection scheme that supposedly prevents music CD's from being reproduced. The objective is to prevent users from "burning" music onto CD-Rs or copying them onto their computer hard drives for later sharing with others over the Internet.

According to the London-based Reuters News Service, the new anti-copying technology does not work. Word has been traveling around the Internet that the copy protection can be defeated by marking around the edge of the shiny side of a CD (where the hidden security track is located) with a felt-tip marker pen. Reuters tried it and sure enough a protected disk could be readily copied. More info at: <www.key2audio.com>.

Be suspicious of any e-mail that asks you to forward it to as many people as possible. An e-mail hoax is making the rounds that claims to be a virus alert bulletin. It warns that a file named "jdbgmgr.exe" will damage a victim's computer system two weeks after first infecting a PC unless it is deleted. Actually the file is a needed Java software file installed on

all Windows PCs. If deleted, some Java applets and JavaScript will not run. The message generally says, "...my address book was infected, which means yours will be also. I have the fix below..." followed by instructions on how to delete the file. The hoax has also been translated into Spanish, French, Portuguese and Italian.

Radar detectors are interfering with credit card transactions at gas pumps. ChevronTexaco. Corp. uses a nationwide network of 6,600 very small aperture satellite terminals (VSAT) at its gas stations. It says radar detectors frequently disrupt the data flow which can result in lost or incorrect sales and/or verification information. ChevronTexaco is also concerned that "thieves could use these devices to steal motor fuel by simply activating a radar detector while fueling" to knock out a credit card transaction.

Home-theater-like experience on your PC - Microsoft's next version of its Windows Media Player (currently in beta-testing) will support high-definition TV. Code-Named "Corona," the next generation player will deliver instant-on, always-on streaming and bringing home- theater-like audio and video quality to broadband PC users.

"In addition to other 'Corona' capabilities, Microsoft is showing how Windows Media supports DVD- and HDTV-quality programs at vastly reduced data rates, setting the stage for new networked and personal digital media storage capabilities and markets," said Richard Doherty, director of research at The Envisioneering Group.

"Sniper II," a Columbia TriStar Home Entertainment release, is the first major film studio to use the new "Corona" technology to transfer time-sensitive daily film footage shot in Budapest, Hungary over the Internet to Los Angeles-based production facility radically streamlining the review and approval process. <www.microsoft.com/windows/windows-media/default.asp>

Klez e-mail computer virus is hard to track! The Klez mass-mailing worm is now the most widespread e-mail virus of all time, surpassing "SirCam" which previously held the honor. And so far, Klez has shown no signs of going away. Hundreds of thousands of PC have been infected.

It is nearly impossible to determine who sent the infected Klez e-mail to you due to the worm's technique of forging the address of the sender. The infected e-mail is received with a random "from" address selected from various sources on the original victim's hard drive. Klez's trick of spoofing senders' addresses has resulted in floods of warnings going out to the wrong people: people who did not send the virus and whose machines are not infected.

A new 'JS.Fortnight' mass-mailer worm was first discovered on April 29, 2002. This virus changes a Web browser's start-up page to an adult porn site. It also causes all e-mail sent from the victim's computer to be appended at the bottom with a link to a malicious webpage which harbors the virus.

The malicious page has now been removed from the Web, but users may see a link to <http://link.rawtocash.net> in messages sent from infected users.

GADGETS & GIZMOS

Logitech (Fremont, CA) has a new miniature Pocket Digital Camera about the size of a half-inch thick credit card that weighs less than two ounces. You just point and shoot. It connects to a Windows 98 Pentium 2 (or better) PC with a supplied USB (Universal Serial Bus) cable. The built-in lithium battery recharges every time you hook it up to download pictures into your PC.

It can take up to 52 images in 16 MB of non-removable memory. Resolution is 640x480 pixels. It has a brushed-aluminum surface, a slide-out lens cover and fits comfortably in a shirt pocket. Makes a good secondary, take-anywhere digital camera. Price: $129.95. See it on the web at: <www.logitech.com>. (Click on "products", then "cameras.")

More doctors are automatically transmitting their prescriptions directly to pharmacies using hand-held wireless shirt-pocket devices.

One such device called "Pocketscript" allows the prescription to be "written" using speech-driven (voice recognition) technology by simply pressing a button and saying the patient's name.

PocketScript then translates the spoken name and instantaneously returns the patient's record. The doctor then creates the prescription by saying the drug to be prescribed ...or the diagnosis and letting the system determine the appropriate prescription. See: <www.pocketscript.com>.

Eliminated are those small slips of paper that no one can read anyway. Quoting a research firm, the *Wall Street Journal* says that within three years, 20 percent of all drug prescriptions will be prescribed electronically.

Besides being faster and more legible, e-prescription systems can do all sorts of things that those scribbled notes can not ...such as determine if the prescription is covered by the patients medical insurance, keeping track of available refills, checking to see if a new drug might interact dangerously with the patient's other medications, posting patient records and keeping a log of all medications prescribed and picked up. Pharmacies that can't accept digital delivery get them by fax.

INTERNET & WORLD WIDE WEB

Chicago-based Orbitz, the one-year-old travel Web site jointly owned by American, Continental, Delta, Northwest and United Airlines wants to expand its ownership base. It seeks to raise $125 million through an Initial Public Offering (IPO.)

Orbitz says it has over 6 million registered customers to whom it has issued a like number of travel tickets. It sold more than $500 million in travel bookings in the first quarter of 2002 ...losing nearly $9 million on revenue of more than $32 million. Orbitz plans to list on the NASDAQ stock exchange as ORBZ.

Expedia, the largest online travel agency, reported bookings of over $1 billion in the first quarter. Shares of Expedia quickly fell 6 percent after Orbitz announced the IPO. Expedia, spun off from Microsoft in a November 1999 IPO, was purchased by USA Networks Inc. in February.

A research study by International Data Corp claims that 30 to 40 percent of employee Internet activity is not business-related and that more than 60 percent of online purchases are made during working hours.

A new gadget is on the way to control employee Internet use. SnapGear and Cerberian have combined to develop an Internet appliance that can "manage, monitor and report on employee Internet usage regardless of location."

Utilizing virtual private networking (VPN), firewall, router and Web filtering capabilities, the appliance combines

Cerberian's Web filtering and monitoring technology with SnapGear's integrated hardware.

The monitoring of employees by employers has run into some legal gray areas, but employers generally have the right to monitor their employees if the employees are notified that they may be monitored. See: <www.snapgear.com>

AT&T Broadband and Comcast Corp. are planning a $72 billion merger. It will form the nation's biggest cable company with 22 million subscribers if approved by the Justice Dept. and the FCC. The cost reflects a value of $4,500 per subscriber, a high price indeed. High volume Internet users can expect to pay more if Comcast Corp. succeeds in taking over AT&T Corp.'s cable division.

Existing technology already allows ISPs to keep track of online consumption. Comcast feels that cable-modem Internet customers who download large quantities of videos, songs, and other large files should be assessed an additional charge for high online usage. The new firm will be renamed AT&T Comcast Corp.

The Federal Aviation Administration has certified Boeing's Connexion, an airborne two-way broadband Internet communications network to bring e- mail and other Internet services to airlines and their passengers.. The FCC approved the satellite-delivered service last fall.

Boeing conducted a three month flight test was conducted aboard a 737-400, to verify that the system worked and that it did not interfere with other aircraft systems. The final certification paperwork was e-mailed to FAA officials in Los Angeles from the test aircraft during early May while it was flying at 35,000 feet above New Mexico.

Connexion will bring high-speed Internet and e-mail and real-time television to the flying public. Subscribers simply plug in and boot up their laptop computers as they normally do.

The first airline to install Connexion will be Lufthansa, the German airline which will have it available early next year. American, Delta and United Airlines all backed out of implementing the Boeing Connexion service citing financial hardship from reduced air travel demand after the Sept. 11 terrorist attacks.. See: <www.boeing.com/connexion>

WASHINGTON WHISPERS

On May 22, 2002, the FCC released a 173-page study on U.S. telecommunications trends. Highlights include the following:

- At the end of 1997, 18,6% of all households had Internet access. This percentage increased to 50.5% by 2001.
- The number of residential and business high speed connections to the Internet increased by 36% during the first half of 2001, to a total of 9.6 million lines in service from about 7.1 million at the end of December 2000. About half are cable modem connections.
- The number of international telephone calls made from the United States to other countries increased from 200 million in 1980 to 6.6 billion in 2000. In 2000, Americans spent about $14.9 billion on international calls. On average, carriers billed 51 cents per minute for international calls in 2000, a decline of more than 60% since 1980.
- Local telephone rates have remained steady. The average monthly local residential charge for service was $21.84 in October 2001 as compared to $19.24 in 1990. For a business with a single phone line, the representative charge for service was $42.18 in October 2001 as compared to $41.21 in October 1990.
- More than 23 million households have been added to the nation's telephone system since November 1983. As of November 2001, 102.2 million of the nation's 107.7 million households (94.9%) had telephone service. In 1950, only 61.6% of U.S. households had a telephone.
- Until the 1970s, AT&T had a virtual monopoly on long distance service in the United States. In the 1970s, competitors such as MCI and Sprint began also to offer long distance service. In 1984, AT&T's share of the long distance market was about 90%. With the gradual emergence of competition, basic rates dropped, calling surged, and AT&T's dominance declined. By 2000, AT&T's revenues had declined to less than a 40% market share. More than 700 companies now offer long distance service.
- From 1984 to 2000, the average cost of long distance calling dropped from 32 cents per minute to 12 cents per minute. The average price of 12 cents per minute represents a mix of international calling (47¢ per minute) and domestic interstate calling (9¢ per minute). The decline in prices since 1984 is more than 70% after adjusting for the impact of inflation.
- The mobile wireless industry has grown dramatically. There were 92,000 subscribers in 1984, as compared with over 118 million subscribers as of June 2001. The wireless industry's annual revenues rose from less than a half billion in 1984 to almost $60 billion by mid-2001. The average monthly mobile wireless phone bill dropped from $96.83 at the end of 1987 to $45.56 as of June 2001.
- There are currently four toll-free number prefixes in use - 800, 888, 877, and 866 - with over 24.5 million toll-free numbers assigned as of the end of April 2002. By contrast, in December 1993 there were 3.9 million toll-free numbers.

Be careful dialing! **The FCC has issued a consumer alert on what has become known as "fat finger dialing"** – a new scam that can result in consumers paying several times more for phone calls than expected. It works like this:

You place a collect call from a public phone or payphone, intending to use a service like 1-800-CALL-ATT or 1-800-COLLECT. But you misspell or hit an incorrect button when dialing. You accidentally dial something like 1-800-CALLLAT. You get connected to the party you wished to call, but the phone company that connects you is not the one you thought you were using. Instead, it is a company that secured 800 numbers similar to well-known ones.

The company is banking on the possibility that you might accidentally misdial your intended number. If this happens, you are probably unaware you are using a different phone carrier than the one you intended to use because you don't know you misdialed. Often, the company won't identify itself to you or the person receiving the collect call before connecting the call. See: <www.fcc.gov/cgb/consumerfacts/carelessdialing>. (Click on "Careless dialing" link.)

The Nigerian e-mail and letter fraud may be coming to an end. Six Africans (four Nigerian) have been arrested by Scotland Yard and South African Police who also seized a large stockpile of drugs.

According to U.S. Treasury officials, the international scam – also known as the "West African advanced fee fraud" or "419 Scam" – has defrauded hundreds of

millions of dollars from victims who receive a letter or fax (or more recently, an e-mail) saying the sender is a government official who has a large amount of money that he wants to smuggle out of Nigeria. Four-One-Nine is the Nigerian criminal code that makes the letters illegal.

The fraud, which has been operating for many years, works like this: A recipient receives an unsolicited e-mail, snail mail, or fax stating that millions of U.S. dollars need to be removed from Nigeria (or some other country) and you have been selected by government or banking officials to assist. Recipients supposedly will share the cash if it can be deposited into their bank account.

Interested people, however, must first pay some sort of advance "administrative expenses," transfer taxes, lawyers' fees, shipping costs, taxes, "performance bonds" or bribes.

Newer versions allege to be from an American "Special Forces Commando" in Afghanistan who found $36 million in Taliban drug money, unclaimed cash found in the rubble of the World Trade Center ...or the inheritance of a fallen serviceman at the Pentagon.

The U.S. Secret Service gets about 13,000 advance fee scam letters forwarded to its office every month.

The FCC and U.S. Food and Drug Administration (FDA) have launched a "Cell Phone Facts" site to alert consumers about health issues surrounding wireless mobile phone use. It tells -- in plain English -- how a cell phone works, what radio frequency radiation is and what scientists currently know about the health effects of using phones.

"The available scientific evidence does not show that any health problems are associated with using wireless phones. There is no proof, however, that wireless phones are absolutely safe."

The site will be updated periodically with news and additional studies as they become available." The site is located at: <www.fda.gov/cellphones/>.

AMATEUR RADIO NEWS

The 21st Annual ARRL and TAPR Digital Communications Conference will be held September 13-15, 2002 at the Denver (Colorado) Marriott Southeast Hotel. Conference registration details are at: <www.tapr.org/dcc>.

Technical papers are solicited for presentation at the meeting and publication in the annual conference proceedings published by the ARRL. Presentation at the conference is not required for publication. Submission of papers is due by August 5th.

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs to meet, publish their work, and present new ideas and techniques. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications.

Topics include, but are not limited to: Software defined radio (SDR), Digital voice, Digital satellite communications, Global position system, Automatic Position Reporting System (APRS), Digital Signal Processing (DSP), HF digital modes, Internet interoperability with Amateur Radio networks, Spread spectrum, Amateur Radio use of 802.11 technologies, Using TCP/IP networking over Amateur Radio, Mesh and peer-to-peer wireless networking, Emergency and Homeland Defense backup digital communications, Using Linux in Amateur Radio, AX.25 Updates and other wireless networking protocols.

Expressing shame over spying for Moscow, former FBI agent Robert Hanssen K9QVL of Vienna, VA was sentenced on May 11th to spend the rest of his life in prison in a final courtroom appearance that closed a chapter in one of America's most-damaging espionage cases. The sentence will not allow parole or early release.

He publicly apologized for the first time for betraying both his country and his family. (He has six children.) "I am shamed by it," Hanssen, 58, told a hushed courtroom in Alexandria, Virginia -- a Washington, DC suburb -- filled with former FBI co-workers..

Under a plea agreement, Hanssen agreed to tell U.S. investigators about all his damaging disclosures to avoid a possible death sentence.

Hanssen's General Class ham ticket does not expire until September 15, 2007. He has held an Amateur Radio license since he was a teenager in Chicago

FCC Amateur Radio Enforcement

John S. Gregory W3ATE (Annapolis, MD) has been warned by the FCC that it has information that he has been operating on 14.300 MHz, a frequency not authorized to Technician Plus licensees. Continued such operation would jeopardize his future attempts to obtain an upgraded license and could result in license revocation.

Claire Kirouac KG4SEF and Mario Lessard KG4SDU (Fort Lauderdale, FL) were sent similar warnings for operating SSB on 14.118 MHz while holding Technician Class licenses. All are to contact the FCC.

Zbigniew J. Kolodziejczak (New Britain, CT) was warned that continued operation of his Amateur (144.98 /147.48 MHz) repeater without a license could result in a fine and imprisonment as well as seizure of his equipment. His General Class (KA1UTK) license expired in November 2001 and was not renewed.

Cinergy Corp. of Columbus, Ohio, along with WLW Radio, successfully resolved an RFI problem experienced by four Amateur operators in their service area. The FCC said this long term case was closed due to the diligent effort of the ARRL, WLW, and Bob Reiff, WA8ULW.

Jack Gerritson, ex-KG6IRO, (Bell, CA) was sentenced on May 7 to three years in federal prison for violating parole, including radio interference and threats to agents.

Gerritson, who had previously been convicted and sentenced in 2000 to five years in prison for interfering with the Los Angeles Police Department, was arrested January 29. The arrest was in response to complaints of death threats made by Gerritson on 2-Meter Amateur frequencies.

Gerritson had been paroled after serving one year of his original 5-year sentence. A condition of his parole was that he not possess or operate radio equipment. At the time of his arrest in January, the FCC said Gerritson had in his home over 20 radios, 8 of which were capable of operating on frequencies in the Amateur, Marine, Land Mobile and Public Safety bands. The FCC also said those radios included a marine radio hidden in a closet with batteries connected to it, and a length of antenna line running outside his residence

CTI of Miami, Inc. (Florida) has been fined $17,000 for marketing and operating non-compliant high-power cordless telephones. The firm was notified of the violation and intended fine on January 25, 2002, but failed to respond.

FCC ANNOUNCES CHANGES TO MULTI-USE RADIO SERVICE

MURS is a VHF 2-meter (150 MHz) Citizens Band Radio Service

According to the FCC, the *Multi-Use Radio Service* (MURS) is a two-way, short-distance voice or data communications service for personal or business activities of the general public.

On November 13, 2000, the Commission "licensed by rule" -- that is, eliminated the individual licensing requirements – for five VHF frequencies that had previously been allocated for low power (1-2 watt) operation in the Part 90 *Business Radio Service.* The five so-called "color dot" frequencies (151.820 MHz, 151.880 MHz, 154.570 and 154.600 MHz) were transferred to the *Citizens Band Radio Service* and a new *Multi-Use Radio Service* (MURS) was established under Part 95 (subpart J).

Even though the five MURS frequencies were formerly available only for business communications, the FCC's creation of the MURS made them also available for personal and family communications. Like the UHF *Family Radio Service,* there are no call signs and no station ID is required in MURS.

Maximum MURS transmitter power is 2 watts making MURS (at 150 MHz) four times more powerful than the half watt FRS (at 460 MHz.) Emission is narrowband FM (NBFM). The original rules did not prohibit repeater stations, signal boosters (amplifiers) or telephone interconnection.

Unlike FRS, you may connect an external antenna to your MURS radio. Using an antenna mounted on the vehicle's roof, and communicating with another similar unit, you should expect to get at least a couple of miles (except in the most harsh conditions), and possibly up to ten miles or more. Another advantage is that MURS communications do not suffer from the long-range "skip" interference that plagues CB radio at 27 MHz.

Although some radios are available by mail order over the Internet, there are currently no widely available MURS radios since both Radio Shack and Motorola opposed permitting personal use. The price of a MURS transceiver should drop to the $50 range once equipment manufacturers go into mass production. This new personal radio service has the potential to become very popular, especially in the traveling community.

Petitions for Reconsideration

Motorola, the Industrial Telecommunications Association, Inc. (ITA) and Radio Shack objected to the new service. They believe that the Commission should have adopted operational and eligibility rules to ensure that the frequencies are used primarily for business and industrial applications.

The petitioners contend that "...the expanded use of these frequencies by the general public will result in increased congestion and interference that is incompatible with effective business communications." While not said, Motorola and Radio Shack also may have been concerned that MURS transceivers would dilute their sales of FRS radios which are booming.

Motorola and ITA wanted the FCC to cancel the new MURS service and to return the five MURS frequencies to the *Business Radio Service.* Radio Shack requested that the FCC add eligibility restrictions to Part 95 so that only business and industrial users would be licensed by rule to use MURS.

In a *Memorandum Opinion and Order (MO&O)* released May 23rd, the Commission affirmed the decision to "license by rule" and declined to restrict the use of MURS to business-type communications. On their own motion, the FCC also adopted several technical rule changes in order to prevent MURS abuse and degradation of service and "...to streamline and eliminate rules that are no longer warranted." The new rules are effective about July 1st.

Under the revised rules, MURS units are:

- Permitted to have detachable antennas. Antenna height, currently not limited, will be limited to the same standards as for CB Radio at 27 MHz: 20 feet above structure (exclusive of the tower, mast or pole on which it is mounted), or 60 feet above ground (whichever is higher).
- Maximum transmitter power, now limited to two Watts ERP (effective radiated power, including antenna gain or loss, line and connector loss, etc.) will be determined instead solely by transmitter output power (TPO). The original ERP method was too difficult for the public and consumer-level user to understand and calculate.
- Emission standards (maximum deviation levels), currently restricted to vary narrow limits, will be relaxed (increased) on the two MURS frequencies in the 154 MHz band. This will permit the use on those two specific frequencies of older, NBFM (narrowband FM) radios with a maximum +/- 5 KHz deviation.
- Repeater operations and "signal boosters", currently permitted, will be prohibited. The FCC's intent is to prohibit both real-time repeating, and the time-delay (store and forward) type of repeating.
- Continuous carrier transmissions, currently permitted on four of the five MURS frequencies, will be prohibited on all five frequencies. MURS radios will not permitted to be used as cordless telephones or radiofacsimile (imaging). Remote control and telemetry use is permitted.
- Interconnection with the public, switched telephone network (PSTN), -- that is, phone patches -- currently permitted, will be prohibited.
- New certification procedures will be implemented to more distinctly identify what is and what is not a radio model acceptable for use at a MURS station. MURS and FRS may not be integrated into a single radio.

VIDEO GAME BUSINESS HEATING UP!

Sales of video game hardware and software topped $9.4 billion in the U.S. last year ($20 billion worldwide) with 2002 expected to easily beat that record.

The Electronic Entertainment Expo (held May 22 to 24 at the Los Angeles Convention Center) is the video game industry's annual trade show. Better known as "E3," only video game professionals may attend.

Sony starts price war!

Since Sony has a one year head start, it is the leader in worldwide video game console sales and games. The Playstation-2, which features advanced graphics capabilities and DVD functions, debuted in October 2000. The Tokyo-based firm has shipped more than 30 million PS2 game consoles ...more than a third to North America.

While Sony has not had a good year overall because of a global electronics slump, Sony believes that video-game platforms can be an engine for future growth. The price cut was part of a business plan to turn around its sluggish electronics sector by connecting more products with its game and entertainment businesses.

Sony envisions that its TVs, mobile phones, personal computers and game consoles will not only "talk" to each other but also to the Internet. They call this strategic linking the "broadband network society" and the PlayStation-2 is to become a key Net-linking machine.

Their aim is to have Sony recognized as a company with three core sectors -- electronics, games and content. You will see tie-in products - such as Web games - featuring "Spider-Man," Sony Picture's smash box-office hit.

A week before the convention (May 14th Sony Computer Entertainment (SCE) announced plans to slash the price of its PlayStation-2 games console in North America by a third in the U.S. - from $299 to $199 - underpricing its biggest rival, Microsoft Corp.'s Xbox, by $100.

Sony's original and less-advanced PlayStation One, unveiled in stores in September 1995 at $299, has steadily been reduced in price. It now has been priced at $49.

The huge price cuts did not go unnoticed by Microsoft, maker of the new Xbox and Nintendo's GameCube.

Microsoft's X-Box jumps into the fight

Microsoft's Xbox console sold for $299 and Microsoft initially said there were no plans to lower the price. But just before the E3 trade show, Microsoft matched Sony's $199 price. Microsoft wanted to make sure nobody buys another video game system because of price.

Xbox is the only console with a built-in hard drive and comes set up for Internet access. Those features are external add-ons in PlayStation-2.

Microsoft introduced the Xbox, its first gaming console, last November and expects to ship 4 million units by the end of June ...about one-third less than earlier estimates. Microsoft isn't making a profit on the Xbox, while Sony's PlayStation-2 and its games produced most of the company's operating profit for the year ended March 31.

Microsoft wants a bigger piece of the video game market and is willing to do whatever it takes to increase its share. Toward that end, it will invest more than $2 billion dollars promoting Xbox over the next five years.

"Xbox Live" allows players to find game partners over the Internet. The big question is whether gamers will pay to play Xbox video games online using high-speed Internet connections. Microsoft plans to offer an annual $49 subscription for its gaming service beginning this fall.

Nintendo also joins the battle, outdoes others

Nintendo's GameCube was already selling for $199 and, like Microsoft, Nintendo initially said there were no plans for additional price cuts. But, like Microsoft, just before the E3 trade show, Nintendo slashed the U.S. retail price of its GameCube machine by 25 percent to $149.95 in a bid to maintain its price advantage over its main competitors. The GameCube has been positioned to appeal mostly to pre-teen age children.

The new low price also would help separate the GameCube from the Xbox and PlayStation-2 which can play DVD movies. The GameCube can not.

GameCube, like Microsoft's Xbox, was introduced in November 2001 and about 4.5 million have been shipped so far. Most go to the U.S. market. Nintendo makes the popular "Super Mario" and Pokemon videogames. Its top title is "Super Smash Bros. Melee" ....2.5 million have been sold. Nintendo said its video game software will remain $39 to $59 per copy.

Like Microsoft, Nintendo plans to release hardware that will allow people to play GameCube games online.

Video game rentals to expand

According to the Video Software Dealers Association (VSDA), the video game rental market is booming with revenues up nearly 10 percent over last year ...mostly on the basis of the two new game platforms.

Video game players rented nearly 50 million games during the first quarter of 2002. Overall, video game sales is a $5 billion business dominated by such huge chains as Wal- Mart, Toys-R-Us, Best Buy, Circuit City and Target Corp. Sony video games dominate the market accounting for nearly two-thirds of all video game rentals.

Blockbuster Video which dominates the movie-rental business, is going after the video game hardware and game sales and rental market. They are in the process of adding special game section displays to their 4,300 company-owned stores. We also heard that they will offer a $19.99 monthly subscription that would cover unlimited rentals. Only two games can be checked out at a time. Blockbuster hopes to double its video game revenue - now standing at 12 percent - by the end of the year.