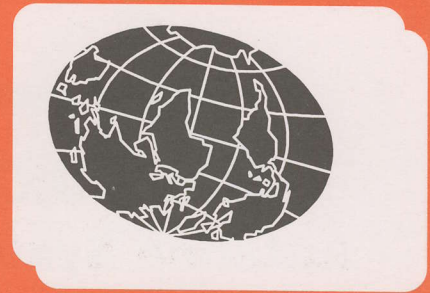


13-05-02

Bob Cooper's

MAY 15 2002

# SatFACTS



MONTHLY

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ISSN 1174-0779

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This publication is dedicated to the premise that as we are entering the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education.

These messages are available to anyone willing to install the appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

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## COOP'S COMMENT

When a business fails, people lose jobs, investors lose dollars, and the public loses confidence. Two businesses failing is an omen, three businesses a trend and four businesses a recession. We are approaching number three.

The Brits were as a nation quite proud that their iTV terrestrial digital service, combining some free to air and pay-channels, was not only the first to launch on a large scale but from outward

appearances doing quite well. That was before mid-March when it was revealed that a combination of factors had conspired to endanger the service. In retrospect, iTV digital did many things wrong. They gifted set-top boxes to approximately 1 million homes and poorly engineered their own signal coverage during new transmission site roll outs. So people trooped in to their outlets, picked up a gratis set-top and agreed in exchange to subscribe to a minimum number of the pay channels. Then these consumers took the boxes home and tried to make them function. Alas, for something like 1 in 3, either there was no (or inadequate) DVB-T signal on their roof, or being non-Aerialists, it was too much of a do-it-yourself project to start with. The nicely held theory was that if people could receive an adequate analogue service with their existing aerial system, all they had to do was stick the set-top in line between the aerial and the telly and magic digital pictures would follow. Unfortunately, this was incorrect advice, such that the one in 3 who could not make it work trooped back to the iTV Digital shoppe and returned their set-top. Multiply that by several hundred thousand families. Imagine the paperwork and wasted hours spent first signing the people up, checking the set-tops out, taking them home, stuffing around looking for signal, repacking up the unit, taking it back to the store and then filling out more paperwork to get your name "off the rolls."

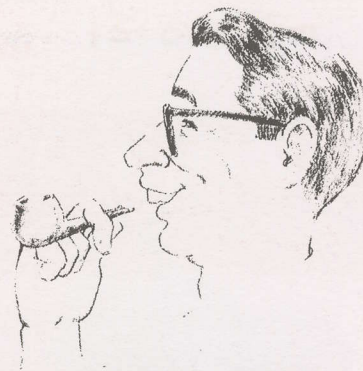
In fact, something like 75% of the UK remains today beyond DVB-T signal reach. Not all are in fringe areas - DVB-T is proving to be very democratic about coverage; it misses people within eye sight of the transmitting tower as well as those 40 clicks away.

Then there was the poor business management. iTV Digital had forecast coverage of 2 million plus homes by mid-2002 and accordingly had signed contracts to provide television coverage of 72 English Soccer clubs exclusively on digital. At a cost of hundreds of millions pound Sterling. However, well short of their planned number of homes served, iTV Digital suddenly realised in March it would go broke - big time broke - if it had to pony up the dollars the contract required when the soccer season launched.

Actually, it was already broke - as in financially unable to continue - when in early April the affairs of the corporation were handed over to a firm of outside accountants. For three weeks these grey suited folks struggled with what was left and then on May 3rd iTV Digital posted a sign for early morning viewers. "We regret to advise that this service is being terminated." End of story?

Not quite. There is the piracy factor. In mid-March, iTV Digital raised its corporate hand and said, in effect, "We have been struck down by smart card pirates who were initially told how to create piracy cards through a web site known as THOIC.com." iTV Digital estimates 100,000 homes were watching and not paying - a number I personally suspect is low by several hundred thousand. As SF reported in April, THOIC.com was funded under the table by News Corp subsidiary NDS which justifies their support by claiming, "We were merely gathering security intelligence." Never mind that NDS lost the contract to supply iTV Digital with smart cards and to even a 6 year old sounds guilty of retaliation by making public hacking information that would destroy the service.

Numbers two and three? The Spanish DVB-T service, modelled after iTV, has also shut down; piracy is one reason given. And - Austar is down to their last \$A50 million after assuring bankers they had enough money as recently as January to stay the course.



May 15, 2002

## In Volume 8 ♦ Number 93

Them & Us: How European's deal with piracy -p. 6

Web site references: Hundreds of satellite related sites revealed -p. 14

Avcomm's R3100 FTA digital receiver -p. 18

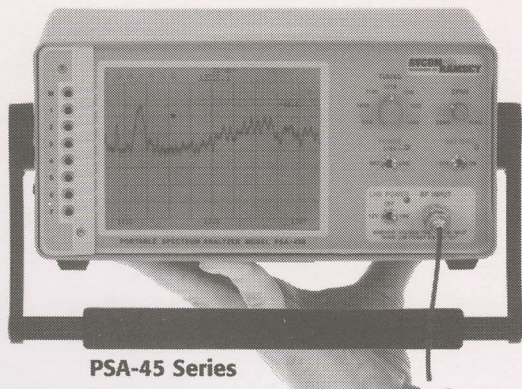
## Departments

Programmer/Programming Update -p.2; Hardware/Equipment Update -p. 4; SatFACTS Digital Watch -p. 22; Supplemental Digital Data -p. 26; Analogue Watch -p. 26 SPACE Pacific Report - TV Show schedule -p. 26; With The Observers -p. 28; At Sign-Off: (After they have hacked the last remaining card ... ) -p. 31

## -ON THE COVER-

Our investigation of the status of smart card piracy suggests Germany is the centre of the hacking universe and the recently developed 'Magic Module' is the core. (p. 6)

# What's New at AVCOM RAMSEY? The LCD Lightweights!



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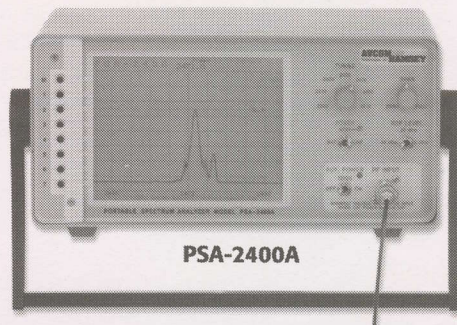
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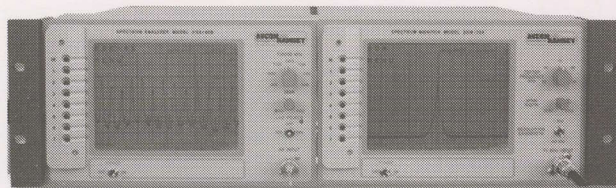
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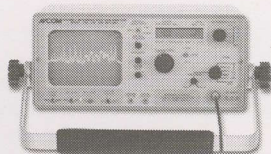
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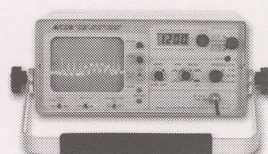
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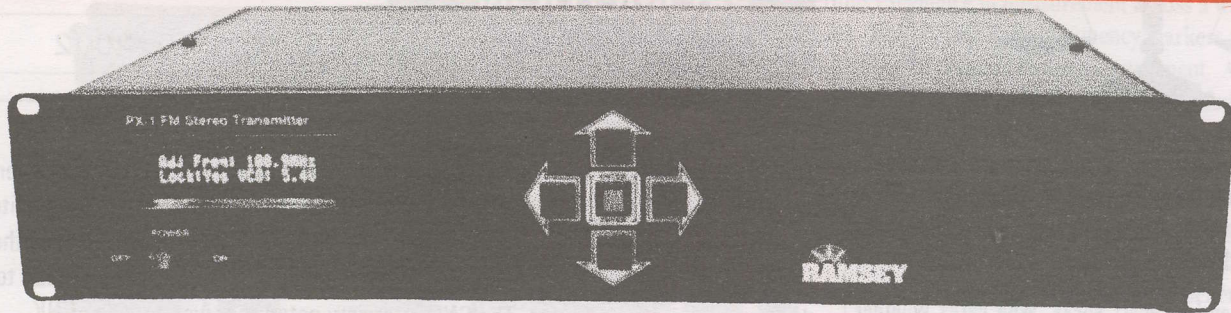
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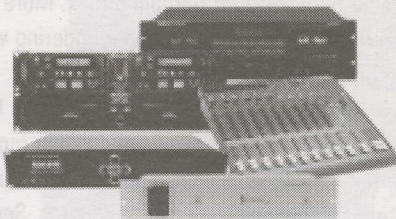
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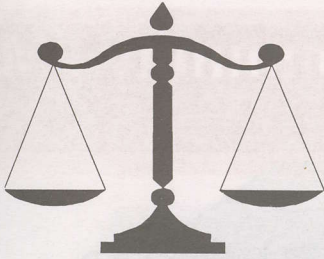
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Piracy and Murdoch

"Interesting report (SF April) but all of this court activity will be to no avail. The Murdoch family is 'Teflon coated' and nothing of consequence ever sticks to them."

Nan Dress, Queensland

"The entire report sucks. Who cares whether NDS or Murdoch or Canal Plus cheat on each other? These guys don't live in my world and I say let them die in the filth of their own perversion."

Arnold T, NSW

"So maybe Bill Khan's Indian TV *really* was undermined by piracy cards. And maybe those cards were released by a competitor who didn't want his business to have a fair go. All of this tells me that if the guys who are billionaires cheat and steal, maybe there is a role model for the rest of us in that message. The hell with them all!"

William, Victoria

"I really felt guilty about purchasing a TARBS grey market system until I read this report. Now I know I did the right thing."

Muhammed, NSW

"A cousin in the UK sent me a copy of What Satellite TV and I was shocked and amazed to find so much blatant advertising for piracy cards, card programmers, and even an article describing how the magazine suckered some French firm into revealing their grey market cards were not only grey but inoperative. If piracy is so bad and is so illegal, how can a respected (well, it once was respected) magazine like this be so closely aligned to the pirate world?"

John T, Auckland

SatFACTS wants you to know the true extent of the piracy scam that now plagues us all. That's why we have the detailed report starting on page 6 of this issue. And just as a final nail in the coffin, see pages 14 and 15 where we list hundreds of piracy related web sites. This is no longer a taboo subject - at least in Europe.

Receiver search

"I am searching for information on the ProSat DSD-3000 receiver with Irdeto on board and would like to locate update or the name of a hardware-equivalent receiver."

Andreas.Bochfeld@t-systems.com

Magic module?

"I understand there is a user programmable module, like a CAM, which can be inserted into an IRD and then using software obtained from the web, the device will handle multiple different pay-TV encryption formats simultaneously. Do you know what it is and where one obtains one - for my private experimentation, of course."

GB, Queensland

SF went into Internet to learn the answer for you which we share starting on p. 6 here.

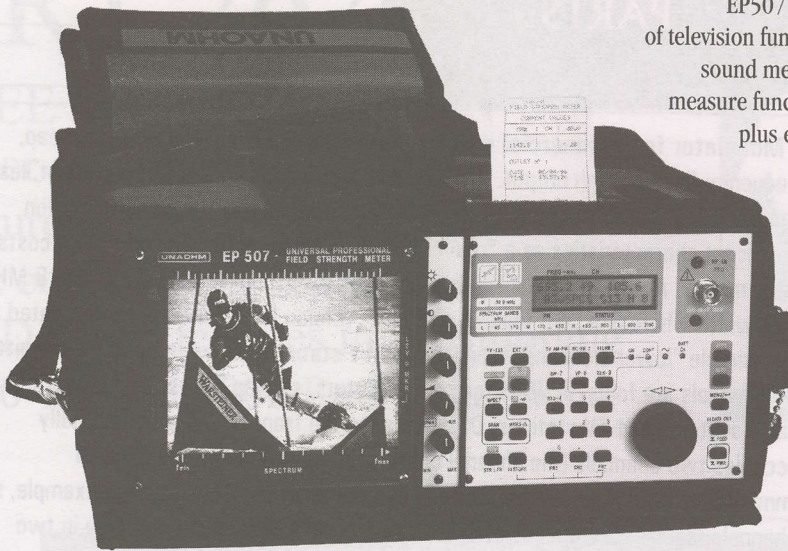
**PROGRAMMER  
PROGRAMMING  
PROMOTION****UPDATE****MAY 15, 2002**

**Hong Kong.** What's the hottest 'TV Ticket' there, these days? A PAS-10 Multi-Choice (Africa) smart card (Irdeto 2) in an appropriate Irdeto-capable receiver connected to a dish pointed at PAS-10. The World Cup is the driving force. Satellite installers there made it to a CNN news report on May 4th where they disclosed the intense interest in "not missing a single (World Cup) soccer match" in the leadup to this year's major-major event. The CNN interview noted that just outside of HK proper, in the so-called 'New Territories', satellite installers advertise quite freely and give pricing quotes over the telephone to those calling about "foreign service." As has been previously reported in SF, Thailand's UBC goes for around US\$2,000 per year there, although Hong Kong law forbids the sale of "foreign television subscription services not licensed for use in Hong Kong" and risk five years in jail if prosecuted for the offence.

**iTV RIP.** It was a brave attempt to change the way Britons watch television. iTV's terrestrial digital service, combining elements of pay with elements of free to air, was to be a model of "conversion" (from old fashioned analogue) and other countries such as Sweden, Denmark and Spain had followed their lead. Well, on May 3rd that lead petered out and iTV succumbed to a combination of smart card piracy, bad business judgements and an agreement to pay hundreds of millions of dollars for soccer league coverage which they could ill afford. iTV's pay TV side is dead, off the air, and at the moment the only potential buyer would seem to be Rupert Murdoch and News Corp. But there is a strange irony in that as Murdoch is the one accused by iTV of fostering the piracy of their smart cards which combined to put the broadcaster out of business. iTV was to be the engine that drove all Britons to digital and would - the schedule said - allow the UK to turn off the last of the old fashioned analogue transmitters by 2010. Now that dream has faded and the scavengers are circling to see what pieces they may be able to pick up for bargain prices. More than 1.2 million UK homes equipped for the service are now without and wondering what they should do with the funny box sitting on top of their TV sets.

**20,000 and falling.** Nobody really has counted how many Australian homes have popped for around \$A700 to add a set-top DVB-T set-top box to their sitting room TV set but by the latest questionable guess, the number is 20,000 - give or take ten thousand either way. Late in April, the Communications Czar of the country, Senator Richard Alston, admitted that the uptake after 15 months was not very impressive. And he suggested that although Government had originally agreed not to allow terrestrial broadcasters to use their digital capacity by transmitting two or more simultaneous TV programmes before the year 2007, "perhaps we should revisit that limitation." Almost immediately his office clarified the widely reported comment by noting, "The Senator was not suggesting the extra digital (channel) space might be used to telecast sports ... or movies." Of course not, heaven forbid anyone in the terrestrial world be allowed to "compete" with the satellite pay-TV folks. Mercy, one turns white at the prospect. Within days Australian Prime Minister John Howard issued his own "clarification" of Alston's comments. "Multi-channelling violates our commitment to no expansion of free-to-air licensing - it oughtn't to occur." Let's see now ... 20,000 homes in 15 months works out to 1,333 new homes per month, countrywide. At that rate, how long would it take for Australia to have 1 million DVB-T equipped homes? No fair using your fingers and toes - the answer is 735 months into the future. At which point there would only be another 5.5 million to convert. But what's 4,876 months between friends? (The answer: 406 years.)

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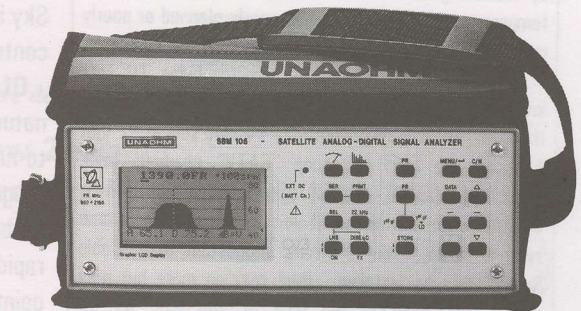
EP 319 level and Spectrum measurements feature high accuracy and selectable Resolution Bandwidths of 100kHz, 1.5MHz and 4MHz to provide real time spectrums displays of signals from TV stereo audio and colour sub-carriers to SCPC satellite signals. 5-40MHz is included, with Analogue and Digital data logging. Options include Digital Signal Quality measures of QPSK+QAM or OFDM. Operational running time is extended thanks to a Ni MH battery pack. Dual Spectrum Markers with Frequency and Level difference (Delta) measures, an electronically generated graticule, On Screen Display function indicator, automatic analogue Carrier to Noise and Vision to Audio ratio measures, DiSEqC 2.0 switching, Teletext etc. are included.



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SBM-105 makes all the necessary measurements for Digital and Analogue Satellite signal Quality. Built around the standard Unaohm Digital Signal Quality measures, the SBM-105 includes Spectrum with Analogue and Digital signal level measurement. The graphic matrix LCD is readable in direct sunlight or low light. Versions are available for QPSK, QAM and OFDM. The SBM-105 is a low cost answer to installer measurement requirements of digital from a company with over 60 years experience manufacturing electronic instruments.



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## Kingray alternates?

"It is all well and good to report on problems associated with Kingray double sideband modulators (as employed profusely by Sky NZ in commercial installs) but in all honesty, what options do we have? Sky mandates the equipment to be used, and distributors such as Signal Master have the 'exclusive approved right' to dispense the equipment Sky demands. I have become reasonably successful going behind Sky's so-called commercial installers to clean up messes exactly as you described in SatFACTS April (p. 14). What Sky commercial installers seem to rely upon is 'power' as a substitute for finesse; send as much signal through an existing distribution plant as possible and hope the dBs somehow get through the existing MATV system! It is a bit like dropping a Chevy 427HP engine into a VW - it will get you there in a hurry but without regard to the mess it makes of the environment or anyone dumb enough to have been standing in the way! Which brings me to a question. What are the alternatives to dumping high power into a shoddy MATV distribution system?"

HL, NZ

Problem one is that many motel (and even hotel) systems were constructed using signal splitters as substitutes for directional couplers or taps and the result is the rooms nearest the 'headend' receive too much signal while the rooms furthest away receive too little. 'Power' is dissipated in signal splitting whereas it should be dissipated only in cable losses. Problem two is the choice of a portion of the frequency spectrum where every problem magnifies; i.e., UHF. Losses in cable, corroded connectors or wall plate connections increase with operating frequency. What is a problem in terms of shoddy maintenance, poor planning or dumb luck at 600 MHz is often not a problem at 50 or even 200 MHz. Problem three is matching the frequency/channel for the pay-TV distribution to the tuning range of the in-room TV receivers. Channelling for the pay-TV must match the in-room TV set tuning capability.

**Problem one:** When the original installation was done with splitters rather than taps, you have three choices: (1) grin and bear it, (2) replace the splitters with appropriate directional taps - assuming you can locate and get to them, (3) pad "down" the levels at rooms nearest the headend with 3, 6, 10 dB attenuators which you install within the wall plate assembly.

**Problem two:** Pay-TV does not have to be run in the UHF region. Modulators are available for VHF as well and by selecting a VHF version you often avoid the temperamental side effects of a poorly planned or poorly maintained distribution system.

**Problem three:** Older motels with older TV sets invariably have restricted TV tuner-tuning ranges. However, virtually all present day TV sets sold in NZ (not Australia we fear) will tune "CATV" channels (mid, super, hyper bands) - the full region from 45 to 890 MHz with no important misses. If you are called in for a new system install, make a strong suggestion that "Cable Ready" sets be installed - they cost no more but may require specifying at the time of purchase. As for alternate modulator suppliers - see to the right.

Trying to bulldoze your way through to the end of the line may be quick and dirty and profitable for the installer, but hardly the mark of a professional. This ain't no game of rugby.

## HARDWARE EQUIPMENT PARTS

## UPDATE

MAY 15, 2002

**Modulator for commercial or large home jobs?** Ideally you want it cheap, frequency flexible, high output. It would also be nice (as in spectrum efficient, less trouble to install and maintain) if the modulator chosen has the same television broadcast characteristics as a "real" TV station's modulator. The last point costs more money. A VSB (vestigial sideband) modulator occupies a standard 7 or 8 MHz bandwidth whereas a DSB (double sideband) version leaves intact the unwanted and undesirable "lower sideband" which "real" TV stations eliminate before transmitting. DSB models are found in VCRs, game modulators, set-top boxes; VSB is found in cable systems and TV stations. DSB, because the transmitted signal actually occupies two channels (the channel chosen for operation and the channel immediately below), limits installer and system operator flexibility. For example, six channels require 12 channels of spectrum space. VSB modulators come in two formats - the operating channel is built-in at the factory and you order the channel you require, or, a range of user-selectable operating channels is built into the unit. Single-channel (factory set) are the least expensive but you have to know what channel you wish in advance of showing up at a job (to have the right channels with you). Pricing for single channel VSB units averages US\$90 to twice that while pricing for "fully frequency agile" units covering a range such as 45 to 550 average twice the cost of single channel designs. VSB units typically have maximum outputs in the +100 to +120 dBmV region, include installer controls to adjust video modulation, aural modulation, video and aural carrier levels and because of their "pro" heritage are (19") rack mounting. Sources? Winersat ([www.winersat.com.tw](http://www.winersat.com.tw)) and Trans Electric Co. Ltd. ([www.pxcom.tw](http://www.pxcom.tw)) are two well established, reputable firms with good quality products at reasonable pricing. PX's SA-65 is available on any 7 MHz channel from 55.25 through 294.25 or any 8 MHz channel from 303.25 to 543.25. Three less well known sources are Shree Vallabhdas Electronics Pvt Ltd (no web site, try [equininfo@ad1.vsnl.net.in](mailto:equininfo@ad1.vsnl.net.in)), Telematics ([www.electronicsforu.com/india](http://www.electronicsforu.com/india)) and Modern Communication & Broadcast Systems Pvt Ltd. (email [mcbcscta.gnr@satyam.net.in](mailto:mcbcscta.gnr@satyam.net.in)).

**NZ home off-air aerial installs?** Public interest in installing new aerials on new homes or replacing older roof top systems has dropped off by 50% or more since Sky NZ announced availability of TVOne and TV2 within its Optus B1 package. Aerial installers surveyed by SF report, "\$180 was my going rate around here. People simply won't pay that anymore - preferring to wait for a Sky NZ '\$199 special offer'. Even the \$17.29 monthly decoder rental fee does not seem to be an issue with most. Sky is winning this public image battle and those of us who work without Sky contracts are going to have to find a new line of work!"

**Of course you are curious.** After reading pages 6 - 12 and 14-15 here, you naturally wonder about the software (and sources) for the Magic Module. Is it hard to find? Can you get dunked for US\$300 for a module which in fact you can't locate programming to use or which is so complex that you need to hold a computer degree (or be born in Germany) to understand? Wonder no more. The "firmware" is under rapid development, is growing daily ([www.satkinder.com/default.htm](http://www.satkinder.com/default.htm)) and as we point out, has no prior "intellectual property rights" restraints attached. Of course a really clever person would write his own in assembler or C++ and become a part of the "MM revolution" now sweeping European computer circles. Oh yes - lest we forget. The reader who sent us 35 pages of "commented assembler source code for the ATMEL 8515 Funcard;" thank you - but please, not again!



# THE GIANT KILLER

## SRT 2620

FREE TO AIR DIGITAL

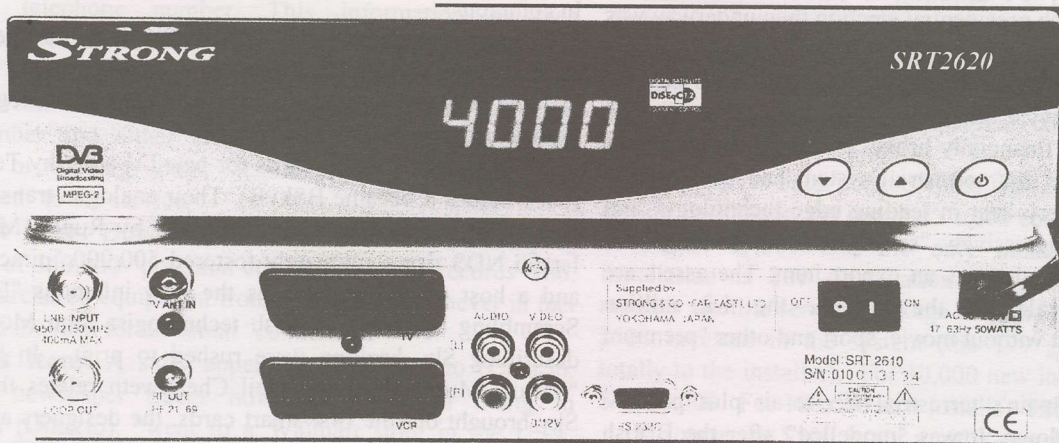
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## European/North American DTH: "them" and "us"

All around us, smart card operated pay-TV systems are failing. Moreover, not a single satellite (or terrestrial) smart card secured pay-TV system in the world has ever become profitable. Those that "claim" to be close to "cash flow break even" are relying upon fancy accounting procedures administered by the likes of Arthur Andersen and Co (you may recall the Enron financial disaster overseen by Arthur Andersen).

**News item:** Canal Plus has fired its founder and President because the service has not achieved financial goals. Canal Plus staff in response to the sacking went on strike, broke into live TV programmes (the police were called to clear the TV set of angry protesters!) urging subscribers to discontinue the service and the French presidential election then underway was drawn into the mess.

**News item:** Britain's terrestrial free-to-air plus pay-TV digital television service, claiming 1.2 million "subscribers," has shut down. It is financially broke, out of funds, no longer able to operate. The iTV terrestrial system had been widely acclaimed as the "very best in leading edge technology" and the UK had been aggressively "selling" their knowledge and experience to other nations as an export item. The assets are currently up for sale. In the interim, the 1.2 million "subscribers" are left without movie, sport and other "premium service."

**News item:** Spain's terrestrial free-to-air plus pay-TV service has closed down. It was "modelled" after the British iTV system and the company with the franchise leaves more than 200,000 subscriber owned set-top boxes dark and dormant. It reported it could no longer "afford" to continue losing US\$23 million each month.

**News item:** Italy's Telepiu pay-TV system is on the brink of going under, the operators claiming piracy cards account for up to 75% of their viewing audience.

**News item:** DirecTV, the USA pay-TV system owned by General Motors subsidiary Hughes Electronics, is revising its smart cards. Late in March the company admitted, "up to 25% of our viewers are using piracy cards." Twenty-five percent? In this case, upwards of 3 million pirates!

**News item:** The Supreme Court of Canada in a 7-0 late April ruling has over turned 21 lower court rulings with the effect of making "illegal" an estimated 700,000 Canadian homes who have subscribed to US pay-TV through DirecTV and DISH. Based upon lower court decisions, "grey market" sales of US pay-TV into Canadian homes has thrived since 1996 as an "open" and "above board" business. The RCMP (Royal Canadian Mounties) have instructions to first close down the retail shops selling the USA services and then go after the 700,000 homes sporting a USA dish. Chaos is forecast.

**News item:** A California court has examined evidence and depositions produced by Canal Plus in their US\$1 billion piracy case filed against Rupert Murdoch's smart card

encryption firm NDS. The court says the case "will proceed" and will rule late in May on a request for expedited action.

**News report:** Australian newspaper writer Joshua Gliddon in late April revealed the "ease" with which Australian viewers could obtain "connections to Optus or Foxtel cable TV lines" or acquire "complete satellite TV systems including a piracy smart card" for fees that range between \$300 and \$1,000.

**News report:** Complete TARBS reception system (PAS-8, Ku) with piracy cards and appropriate CAM-equipped receivers are being sold throughout NSW and Victoria for prices ranging between \$750 and \$1,200. TARBS had previously been immune from piracy product selling.

### In common

Each of these reports (all are current or within the last 30 days) tells a version of the by now familiar tale - security systems designed around plastic smart card technology are in trouble. *Big trouble.*

The first user of smart cards for pay-TV was Sky Television (back before it became BSkyB). Their analogue transmissions encrypted, with a technique pioneered by Rupert Murdoch's Israeli NDS firm, ultimately fostered 500,000 "piracy cards" and a host of books (such as the now infamous "European Scrambling Systems" by Irish technologist John McCormac) describing Sky hacking were rushed to print. In his book "Virtual Murdoch" writer Neil Chenoweth relates that when Sky brought out the first smart cards, the designers attempted to save money by limiting the computing power of the embedded chip. Of course all that did was shorten the cycle between the card's initial release and the hack that followed.

Cards that followed this generation were slightly more complex but in every single case if the technology involves a card, it has been hacked within 6 to 8 months: often much sooner. Exception to that statement? No. Scientific Atlanta does not use a smart card - all of their "secrets" are retained within a plug-in chip found inside SA receivers.

**Observation:** In the May 2002 issue of What Satellite TV (the British satellite TV viewing fan magazine) there are 84 advertisements which feature or offer blank PC cards, card writers, card readers, pre-programmed cards, card emulators or "information" purported to describe card hacking: 57 others offer "straight" goods.. This in a 196 page magazine sold not only in the UK but on news-stands throughout Europe.

**Promises:** "The newest card is hack proof"

DirecTV is very sanguine about the 15,000,000 replacement smart cards it will distribute during the balance of this year. Customers are being given detailed step by step instruction for replacing their existing card, and, a DirecTV satellite channel gives a 5 minute tutorial on doing just that.

**News item:** DirecTV has since 1994 purchased its smart cards and the technology behind them from Rupert Murdoch's NDS. DirecTV's current contract with NDS runs until August 2003. However, the 25% piracy rate which DirecTV estimates with NDS supplied "security" has caused the firm to terminate

the contract with NDS and create "internally, in house" their own replacement smart card system. NDS will be paid through August 2003 as if they were supplying cards and backup support but in fact they are to be paid to "go away" and leave DirecTV to try its own system. A DirecTV spokesperson quoted in a New York City newspaper said, "What we do cannot be any worse than what they have done for us."

Perhaps. But then there is the 75% piracy rate at Italy's Teletu; a target to be avoided!

#### Their approach

There are two primary ways to market satellite (or terrestrial) pay-TV. One way has more security as a benefit.

**Method one:** This is how pay-TV has been sold (put to market) in the UK, USA, Canada, much of South America and Spain. One company manufactures the conditional access receivers (set-top boxes), another manufactures the dishes, another the LNB and so on. An unrelated company puts all of the component pieces into a single consumer-friendly carton and "sells" the package to retailers (such as Radio Shack in the USA and Canada).

The customer buys the "system" in a box and takes it home. At the point of sale, the customer's detail is taken. Their name, address, telephone number. This information is then transmitted to the pay-TV programmer which creates a data base of "potential customers" who have spent US\$300 or up for a system. The next step is for the consumer to call a toll free number and either arrange the installation of his/her system, or having done it already, have themselves "connected" to the service.

**News item:** DirecTV has admitted that it was carrying upwards of 340,000 "potential customers" on its records who, having purchased equipment from a retailer, have never in fact contacted the firm for an actual "connection."

**News item:** A story appearing in a Toronto (Ontario, Canada) newspaper traces how one Canadian living in Hamilton (Ontario), "went to a Walmart store in the USA, purchased a DirecTV system, took it home, connected it up with the help of some friends and then activated the system using a piracy card purchased locally in Hamilton."

This of course illustrates the primary weakness in the retail sale of pay-TV systems.

**News item:** Failed British terrestrial pay-TV provider iTV has charged Rupert Murdoch's NDS of "distributing piracy card hacking instruction" which allowed people to bust the iTV pay system through UK web site THOIC.com. iTV relates their belief that, "more than 100,000 viewers of our service are using pirate cards which are being sold for 30 pounds or less throughout the UK."

When the public is allowed to purchase pay-TV set-top boxes as a separate activity from actually being connected to the pay service, this places into the hands of potential piracy users all of the tools - save one - required to access the service without paying. The missing element, a (piracy programmed) smart card.

**Observation:** In What Satellite TV advertising, blank "Gold Wafer Cards" are sold for as low as US\$2 each.

Point. DirecTV, iTV and others were reluctant to "subsidise" the set-top boxes. If a set-top box package cost US\$300 and the programmer provides the box for very little or no fee to subscribers, the cost of that box goes on the books as a depreciating asset. The programmer has to pay for the set-top package (US\$300) before or shortly after it takes delivery. But if the programmer only collects US\$100 at the time of

installation, and that \$100 goes primarily to the installer for his travel and labour, the programmer still has a \$300 asset sitting there on the books. Which has to be paid for, somehow. Against that \$300 the programmer receives monthly subscription income but that fee has to be divided between satellite transponder rental, programming acquisition costs (ESPN for example charges programmers US\$1.25 per home per month these days), promotion and advertising - and all of the sundry overhead that goes with employing thousands of people at hundreds of locations. There is precious little, if anything, "left over" after these monthly charges to use for "paying down" the original \$300 cost of the set-top reception package.

**News item:** Austar (Australia) is down to \$A59.6 million in the bank. The firm had \$A104 million in the bank on January 1. Austar had assured bankers in January the \$104 million would, "be enough to allow us to reach a break even point" in cash flow (income received each month versus cost to operate) before the money ran out. At the present rate of tapping the \$104 million, Austar will run out of cash sometime in August - perhaps sooner.

**Method two:** This is how pay-TV is marketed in New Zealand and Australia. The programmer supplies the set-top package and in effect "subsidises" its cost. The subsidy amounts to the difference between the cash money received at the time of installation and the real cost of providing the system to the home.

This involves deep pockets filled with reserve money. If the set-top package in the installer's truck costs Sky NZ or Austar or Foxtel \$A500 and the only money collected at the installation is \$99 (installation fee plus perhaps the first month's satellite service package fee), the programmer still has \$500 invested in the system (the \$99 going largely if not totally to the installer). For 10,000 new installs, at \$500 each, \$5,000,000. For 100,000 new installs - \$50,000,000.

Of course the \$500 is not a gift - somehow out of the only revenue the programmer receives (the monthly subscription income) some dollars go towards reducing the "debt" for each box out there. Or that has been the theory.

Remember - no satellite or terrestrial TV programmer has ever - ever - reached the magic plateau where this has actually happened. Back in 1994, DirecTV said they required 2,000,000 subscribers to "break even". Then it was 4,000,000 and then 8,000,000 and so on. The target, taking in enough each month to pay all of the bills and then have something left over as profit for stockholder dividends, never quite seems reachable.

Sky NZ blames this escalation on factors such as the "weakness of the NZ dollar" and "rising charges (to them) for sport events". Austar blames the "high cost of movie packages." iTV pulled the plug on its terrestrial digital pay-TV service because it saw no way to function after having signed a contract with 72 soccer teams to exclusively broadcast their games. Teletu in Italy blames piracy.

Uniquely, Sky NZ has "a better plan" which while it has not seen them cross over the line to profitability to date might just do that - someday. Sky charges a "joining fee" which includes installation of the digital satellite package. The fee is traditionally (NZ)\$495 and as Sky explains in the fine print of their contract, "This is non-refundable." With that Sky also has customers sign a "six month minimum service contract" with penalties for early termination. No surprise - Sky NZ is the most expensive pay-TV system in the world.

NZ\$495 is US\$220.67 (May 3) so Sky is collecting roughly 2/3rds of what DirecTV set-top packages *sell* for in North America. Only, as Sky's web site advises, "*SKY retains ownership of the equipment.*"

Classified advertisement appearing in New Zealand "Trade & Exchange" for April 18:

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**SKY decoder \$100 ono, (025)278-5555 or 815-3500**

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Oops. Somebody neglected to read the "fine print" on the rear of the Sky contract. Or perhaps grabbed the decoder while burgling a house of its TV set.

In fact, while Sky assigns decoders and a "matching" smart card to contract installers, Sky decoders (both the terrestrial analogue and the digital satellite) are available in quantity at virtually any weekend swap meet. But if the smart card has expired (not been recently paid for), what good is the "box" to a buyer? Stay tuned.

Between the two systems there are variations. Sky NZ sometimes discounts their installation of a digital system to as low as (NZ)\$99 which means they are back in the same boat as Austar (*totally* carrying the system cost on their books). iTV and satellite competitor BskyB went through a long period where the boxes were free - *absolutely free* - provided the consumer agreed to a "minimum service contract" of one year. But unlike Sky NZ, in the UK the buyer was indeed a buyer - the set-top box was his to keep after he or she subscribed for a year for the normal subscription price.

"Giving away" a million boxes in A or NZ dollars amounts to more than a half billion local currency. That money has to come from someplace - the boxes do not fall out of the stratosphere. The answer is they come from the programmer company. Sky NZ uses receipts for stock sold to the public and receipts from \$5,000 "investment bonds" to pay for its subsidy costs. In other words, people who invest in the company with the hope their stock or bond will one day mature and pay dividends are supplying the dollars to buy satellite systems which Sky in turn can "give away" to prospective subscribers.

**News item:** With the financial collapse of British iTV Digital, a new question. People who walked away with "free" set-top boxes in return for promising to be paying subscribers for a minimum term of one year are being warned they may have to return their boxes to a collection depot (at their own expense) if their one year term has not elapsed. A consumer protection group is protesting asking the obvious question - how can people who agreed to pay for a year's service be held responsible when the service itself shuts down before that year is out? Moreover, what about that group that paid the full year in advance - are they not entitled to a *refund* for the portion of the year which they have remaining when the service shut down? The queue forms on the right.

**News item:** Financial analysts are warning that "public confidence in pay-TV firms and their service is being sorely

tested by the recent events." The message is a warning - consumers buy services such as pay-TV on the confidence that it is something worthwhile and will be available in a suitable format for the period covered by their contracts. With services failing, with law suits flying left and right, and with firms such as Austar edging ever closer to financial collapse daily, at some point the public loses interest in pay-TV as either an entertainment medium or as an investment.

One industry leader widely quoted in the trade press in recent weeks:

"Imagine this scenario. It is 1920 and the gasoline refinery industry decides that the best business plan is for them to fund the manufacture of automobiles, then fund the gifting of those automobiles to the public at large in return for which the public will purchase (their) gasoline. How is this different than computer manufacturers giving away PCs if you agree to use a particular Internet Provider on a 3 year contract, or satellite programmers giving away satellite receivers in return for the consumer agreeing to subscribe to their service for one year?"

And all of this hinges on ...

The integrity of a piece of plastic; the "smart" card. Which it turns out is not all that "smart" after all.

Mediaguard (also called SECA): Canal Plus; Viaccess (primarily used by sex/porn programmers); AB Sat; Nagravision (TARBS, DISH); Kudelski SA Switzerland; Irdeto (Austar, Foxtel); Mindport Industrial (MIH); Videoguard (Sky NZ, DirecTV USA, Sky Japan et al); NDS; PowerVu (chip embedded, no card); Scientific Atlanta; Conax; CryptoWorks

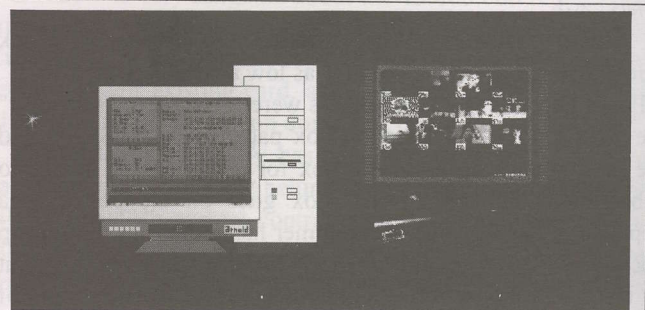
When DirecTV launched in 1994, it was using "version one" of NDS for NTSC (the North American video standard). Canadian pirates needed less than 6 months to work out the "PI Crack" and they developed a "battery (operated) card" which stood alone from the receiver's internal software. When Sky TV (before they were BskyB) launched using NDS's analogue encryption system, Irish hackers required only four months to bust the system and within a year flood the marketplace with an estimated 500,000 hack cards.

**News item:** Canal Plus has won round-one of a court case filed in California in mid-March against NDS, the News Corp encryption subsidiary based in Israel. The court has ruled, based upon depositions entered, the case will move ahead. Canal Plus is asking for an expedited (speeded up) court date because, they say, "We are in the process of releasing a new version of smart card to repair the damages (allegedly) done by the (as charged) NDS release to the public of the Canal Plus (Mediaguard/SECA) encryption code." Canal Plus worries that NDS will try to destroy their new "Version 2" card encryption by reverse engineering the card as it is alleged NDS did with the first version and then (again) releasing the hacking information on a web site (SF, April, p. 6).

Worry not. It is *already* too late. Advanced hackers claim (below) they have already managed to breach the safeguards.

**Hackers Claim SECA 2 and Viaccess 2 Cracked**

This (Internet provided) "screen shot" purports to display a Pentium IV PC connected to an IRD by a Season-2 Interface decrypting the new and "absolutely secure" Viaccess 2 Tarquila XX Sex Channel. The attached note advises, "It is only a matter of (short) time until Irdeto 2 is cracked as they also use the same crypted communication method between the CAM and the card for the conditional access" (see p. 31).





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Version 2 means it is replacing Version 1. Irdeto, for example, introduced a new level of their encryption in South Africa (programmer, Multi-Choice) and has been expanding the newest version to other clients. Australia ultimately will be in the stream, provided of course the hackers don't destroy the initiative before it reaches Australia (see p. 31 for update).

**News item:** DirecTV says it will spend "on average" (US)\$10 per replacement card to equip more than 10 million subscriber homes. Cards are volume conscious, Sky NZ at one point admitted it was spending (US)\$18 per card. But how does a card which advertises in What Satellite TV for (US) \$2 become US\$10?

DirecTV does not purchase cards in small quantities - it is likely their purchase of 15 million is spread amongst a half dozen or more blank suppliers and their cost per blank is under US\$1. But now the "fun" begins. The cards must be transported, programmed, inscribed (printed upon with DirecTV's logo and important instruction data), and delivered to the customer. All of this of course costs money. And then there is the matter of card "types".

One of the better tutorials on card family members is found at <http://chipcard.tv/Karten/karten.html>. There are (1) Gold cards, (2) Silver cards, (3) Fun Cards, (4) Pic 2 cards, (5) Purple cards, (6) PCB cards, (7) Pic 628 cards, (8) Pic 878 cards, (9) Mega 877 cards, (10) Atmel (wafer) cards. And that's but a start.

No two cards are identical in capability. Gold wafer have been adequate for duplicating the information used by Irdeto 1 (Australia's Austar, Foxtel) but newer version encryption has an added layer of security.

"In front of the normal encrypted data stream is a new triple DES encrypted set of nanos. For the normal programming encryption data to get to the original card layers, it must pass through - let's call it - a firewall. The new cards are more complex because of the 'firewall' and a hacker must somehow get the data stream through that 'wall' before normal (hacked) decryption can take place. The 'firewall data' is triple encrypted to stop 'intruders'."

Which brings us to the ATMEL AT161 card. It has an onboard "crypto engine" and the EEPROM capacity of 16 Gold wafer cards. As DirecTV learned when replacing version 1 cards with version 2 (and later version 2 with version 3), for every action by a programmer, there is an instant and often short duty cycle response from the piracy world.

#### No more cards?

If there is a goal in mind for hackers, it is to eliminate *any* requirement for a card. No matter what the encryption system (with the exception, of course, of the SA which uses no card).

Programmable CAM (conditional access module) devices have been around for years. But they have the unsightly and technophobic alarming demand that a PC of some sort be connected full time to the "special CAM" which allows the PC to emulate a card. Plus - somebody smart enough to operate the PC when the data stream changes and new programming instruction is required. Not everyone, technically pure hackers excepted, will buy into a system that requires a full-time PC connection.

The latest device in this family has the promise of becoming a card-less decryption system. It is called "Magic Module" and comes out of Germany. The original CAM-insert / PC connected module was created (according to hacker legend) by German hacker Tron (the guy they found hanging from a tree, dead, suspended by his belt; SF April, p. 8). The latest "MM" version has the following services "Internet" available:

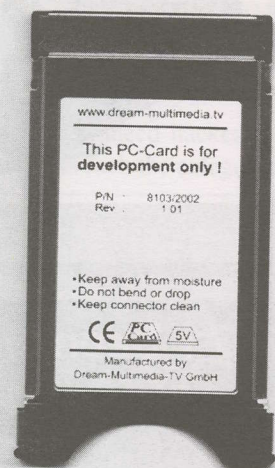
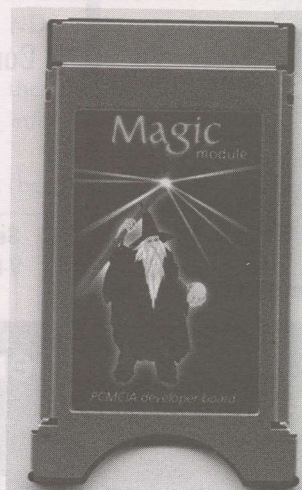
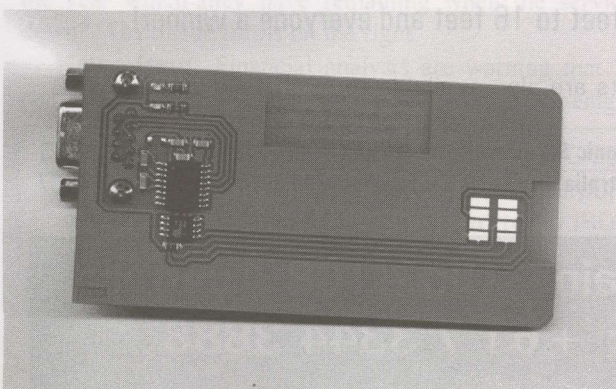
Irdeto, Mediaguard (SECA), Viaccess, Nagravision and Cryptoworks. Additional software encryption formats will be available "soon."

MM is "freely programmable with any PC," and unlike normal CI update systems, no "notebook" is required. The MM inserts into the IRD in the CI/CAM slot while programming and the programmer is a "slot in" card which connects to the PC (see photo, below).

Anyone who has "tampered with" some of the encryption systems, such as Irdeto, promptly discovered that "intellectual property rights" applied. For example, when Irdeto licenses a receiver manufacturer to embed their system into a receiver, or a CAM maker to design a device around Irdeto. MIH collects a royalty for use of their "intellectual software." Here's a shocker - according to the people behind the Magic Module, *all* of the software in the system is brand new, based along the same lines as the anti-Microsoft Linux software. Irdeto and others have used their "intellectual property rights" to stop some would-be sellers of piracy products. The Germans behind this one say *no* software firm has any intellectual rights violated with the Magic Module; the "*Linux of the encrypted TV world.*" *How important might this be?*

Remember Mad Max, the South African card guy who was captured in Thailand by Irdeto security people? They hauled

MAGIC Module "progger" (left) is newly developed technology which ultimately will lead to "card-less" IRDs for hackers. Magic Module (CAM) front (left) and rear (right) in their present version 1.01 format.





# Australia Satellite Systems

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PAL/NTSC auto converter  
>3000 channels  
DiSEqC1.0/1.2 control  
TV/VCR Scart & RCA outputs  
\$290

## Optus Aurora Kit

Humax 5410Z Receiver  
11.3 GHz Ku LNBF  
90cm dish (Foxtel App.)  
Wall mount bracket  
\$750/set  
Aurora card \$105

## HUMAX 5410Z Receiver

Irdeto V2.06 embedded  
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DiSEqC1.0/1.2 control  
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PBI 5.150 GHz C-band LNBF  
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\* Condition apply

## SPACE 8800a Receiver

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TV/VCR Scart & RCA outputs  
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# Major Importer In Australia

him into Thai Courts claiming his use of MOSC (modified original smart cards) was a violation of their "*intellectual property rights*" - that he "modified" their software for his own purpose and was therefore "*liable for theft*" of those rights.

Perhaps Magic Module supporters will face a court challenge here but if Linux (the free-to-all PC operating software that is in "competition" to Microsoft) can withstand such challenges (it has), perhaps the Magic Module will as well.

Magic Module presently utilises a "PIC silver card" identified as the PIC 16F876; it has an EEPROM (electrically erasable + programmable only memory). The files used are called DS9 which were created by a group of "young" German students who are unabashed fans of Star Trek (DS9 is Deep Space 9). It works, they say, with "old" (as in Irdeto 1) and "new (as in Irdeto 2) version smart cards and systems, is fully DVB compatible, requires no IRD "patching", and is open source for whatever applications as the user might create.

It is seldom discussed openly, perhaps because the telephone industry does a better job of squashing news stories than the satellite TV folk, but GSM (or SIM) cards are every bit as vulnerable to hacking. The original purpose of the Magic Module, as we understand it, was in fact to create hacked SIM cards for telephone. That was, after all, what Tron was largely "about" at the time of his death.

One source SatFACTS discussed this with explained it as follows:

"Any device with a PCMCIA slot will accept the Magic Module. Once there, it is a freely programmable access module. People who are familiar with the normal CAM, such as created for the Nokia Mediamaster / D-Box, probably do not realise how 'stupid' this device is. A CI is 'smarter' but the Magic Module is the 'smartest' of all because it is freely programmable and can do several different things at the same time. If it is programmed as a (satellite TV) CI (conditional interface) CAM (conditional access module), it can handle multiple different (encryption) systems simultaneously. At this point in time, a smart card is still required (but it could be a simple one such as the FUN card) but now that folks are working on a 'FreeCam' operating system for the Magic Module, it is only a matter of time before it will work without *any* smart card."

But it is no "toy" with a selling price in the realm of US\$300 (<http://www.visoduck.co.za>). How can it be openly advertised? Because it arrives free of any programming ( quoting from the source - "It arrives blank without an operating system and could serve any access/conditional access application such as - for example - access control to a PC or network.")

And "us" ...

The status of the Australian piracy world is well documented and as writer Joshua Gliddon reported in The Bulletin, "common street talk." Gliddon quotes a spokesperson for the Australian Subscription Television and Radio Association (ASTRA) saying, "It is not actually illegal to have an unauthorised pay-TV connection. If you facilitate the connection, then you are committing an offence. But receiving the illegal (connection) is fine under current law."

Translation? Those who *make* the installation can be charged with a criminal act; those who sit back and enjoy it are *not guilty* of an offence. As both the TARBS Nagra family and Austar / Foxtel Irdeto 1 family services have been widely hacked, "street talk" has turned into wholesale "street selling" of hardware and cards. In Western Australia where the

Multi-Choice PAS-10 service can be received on dishes 2.3m or larger, piracy of that service was growing rapidly until the South African programmer switched to Irdeto 2 (from Irdeto 1). That stopped things for awhile but now that Irdeto 2 seems likely to be broken shortly, this will once again become a "forbidden fruit target" (see update, p. 31).

New Zealand's twin systems (NDS "protected" analogue on 5 UHF TV channels, Sky Digital on Optus B1) are another matter. The UHF analogue service like its original Sky TV UK model was broken early but no real market for grey market cards developed. Those who played with it were primarily hobbyists. Sky repeatedly told enquiring general press reporters, "We are secure because we employ a different system from the (hacked) Sky TV UK service." Not quite true - the system was the same, only the "country code" was different. Alas, analogue is history and with the advent of Sky digital, interest has waned.

Sky's Videoguard digital system presents no challenges which hackers of BskyB or DirecTV have not conquered. What appears to be missing is a commercial reason to make the hacked card products available. New Zealand's small size makes it far more difficult to "hide" this sort of activity.

Which is one of the reasons the chap who *did hack* Sky digital set up camp on Norfolk Island, 450 miles north-west of New Zealand's northern tip. There, using a 4.5m dish originally installed for (out of territory) Sky NZ digital reception by a local "club," he was able to not only capture the data stream ingredients but then proceeded to create a narrative videotape showing precisely what had to be done to duplicate his creativity. Copies of that tape are amongst the "hottest items" in the hacker world these days.

Meanwhile Sky NZ's 32% (and rising) penetration of NZ homes is having a ripple effect on those who either cannot afford Sky NZ service (NZ\$45.90 per month for basic plus the all powerful sport channel with Rugby; \$64.53 per month when movies are added), or, who simply refuse to pay for a full monthly package when all they really want are the weekend Rugby contests that Sky outbid free to air television to carry. The answer, increasingly, is "shared service." No, it is not legal, but on a scale of hacking cards, it is a much smaller offence.

It works this way. Home #1 subscribes. Homes #2, #3 and so on, in close proximity, may or may not share in that installation and monthly fee. Then a piece of RG59 or RG6 cable runs from #1 to #2, #3 and so on along back fences or through the trees. Plugged into the Sky set-top's UHF output channel connection, homes up to several hundred metres away can share the one channel which #1 is tuned into. Which on Friday nights and through weekends is of course - rugby sport.

All of the parts are available at any Dick Smith store and it doesn't require special installation skills to make it work. One source of "how to" instruction shown to SF by an installer of such systems was the "Hills Antenna Installation Manual" (pages 74 - 95) where the installer has "how to" diagrams and a complete parts list. Adding amplifiers, as detailed by Hills, such a system could in fact cover several dozen homes (although of the 55 "systems" SF has uncovered in our own private survey, the largest to date has only 9 connected).

*Big time crookery?* Not yet. But there is a seed here which Sky so far has ignored. When SF asked a Sky exec about such systems he denied any knowledge *or interest* in their existence. Some lessons have to be learned (and relearned) over and over and over, *again*.



# SATWORLD

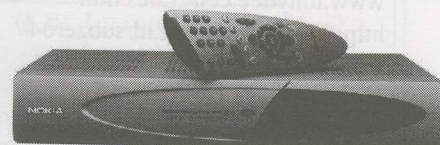
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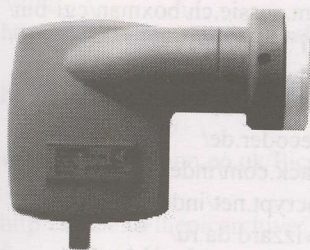


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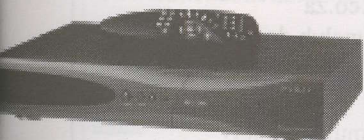


**GRUNDIG UNI DUAL OUT**



**GRUNDIG UNI QUATTRO**

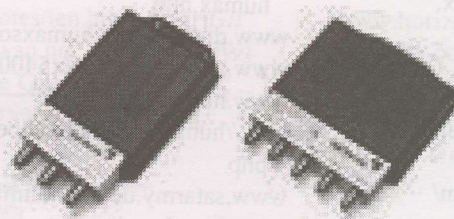
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## Satellite Related Links

### speed your access to information

#### Super Links

[www.gogotv.q1.st](http://www.gogotv.q1.st)  
[www.satlinks.da.ru/](http://www.satlinks.da.ru/)

#### Good Satellite Pages

<http://64.246.16.2/>  
<http://thorbecke.da.ru>  
[www.s0111.com/crypttv/  
member...\\_StartFrame.htm](http://www.s0111.com/crypttv/member..._StartFrame.htm)  
[www.tonydoe.com/Files.htm](http://www.tonydoe.com/Files.htm)  
<http://members.home.nl/subzero4/>

#### Upload pages (sensitive!)

[www.cyberpabst.beep.de/](http://www.cyberpabst.beep.de/)  
[http://crack.coolfreepages.com/  
w-ag...site=fileupload](http://crack.coolfreepages.com/w-ag...site=fileupload)  
[http://sat-digital-tv.admin.net.pl/  
...=english&skin=0](http://sat-digital-tv.admin.net.pl/...=english&skin=0)  
<http://sat.isp.net.pl/>  
<http://go.to/alicecooper.briefcase>  
<http://irseca.2xt.de/>  
[http://sat.host.sk/crypt/indexu.  
htm](http://sat.host.sk/crypt/indexu.htm)

[www.issglobal.be/upload/](http://www.issglobal.be/upload/)  
<http://sat.host.sk/crypt/index.php>  
[www.netzagent.com/freetv/key/](http://www.netzagent.com/freetv/key/)  
[http://crypto.coolfreepages.com/  
upload/](http://crypto.coolfreepages.com/upload/)

[http://upload-nbcs.members.easy  
space.com/](http://upload-nbcs.members.easyspace.com/)  
[http://crypto.host.sk/upload/  
index...age&language=de](http://crypto.host.sk/upload/index...age&language=de)  
[www.netzagent.com/freetv/key/  
goldi/](http://www.netzagent.com/freetv/key/goldi/)

[http://streamupload.host.sk/  
index.php](http://streamupload.host.sk/index.php)  
[www.satupload.cz/index.php?a  
...age&language=de](http://www.satupload.cz/index.php?a...age&language=de)  
[www.seca.space.net.pl/index.  
php](http://www.seca.space.net.pl/index.php)

[www.issglobal.be/upload/](http://www.issglobal.be/upload/)  
[www.seca.cyk.pl/upload/](http://www.seca.cyk.pl/upload/)  
<http://satbuzz.mailbox.ro/upload/>  
<http://balsat.iwebland.com/>  
[http://tnpg.coolfreepage.com/  
php/](http://tnpg.coolfreepage.com/php/)

#### Key Pages

<http://keysmega.tripod.com/>  
[www.sat-key.com/](http://www.sat-key.com/)  
<http://key-world.6x.to/>  
<http://mitglied.lycos.de/fstolle99/>  
[www.laurals.com/index.htm](http://www.laurals.com/index.htm)  
[http://mitglied.lycos.  
de/rene21992/index..htm](http://mitglied.lycos.de/rene21992/index..htm)  
<http://mitglied.lycos.de/keybase/>  
[www.italiangenealogy.com/  
Salernitana1919/](http://www.italiangenealogy.com/Salernitana1919/)  
[www.odsoft.org/](http://www.odsoft.org/)

[www.thundertv.da.ru/](http://www.thundertv.da.ru/)  
[www.your-choice.da.ru/  
http://mitglied.lycos.de/  
cheetahbox/Index.htm](http://www.your-choice.da.ru/http://mitglied.lycos.de/cheetahbox/Index.htm)  
<http://hexkeys.host.sk/>  
[www.sathopper-online.de.vu \(Name:  
Cable TV; password: sucks\)](http://www.sathopper-online.de.vu)  
[www.play-tivi.li/index.html \(Name:  
playtivi; password Nutzen\)](http://www.play-tivi.li/index.html)

#### DVB2000 Related

[www.tuttosat.it/dvb2000.htm](http://www.tuttosat.it/dvb2000.htm)  
[http://hacktv.metropoliglobal.com/  
dvb.htm](http://hacktv.metropoliglobal.com/dvb.htm)  
[www.odsoft.org/](http://www.odsoft.org/)  
[www.satinf.com/](http://www.satinf.com/)  
<http://michl.netfirms.com/>  
[www.no-access.de/en/index.html](http://www.no-access.de/en/index.html)

#### D Box

[http://sat-digital-tv.provider.pl/osnokiae  
.htm](http://sat-digital-tv.provider.pl/osnokiae.htm)  
[www.irata.de/downloads.html](http://www.irata.de/downloads.html)

#### D Box II + Linux

[www.poltergeist.ch/](http://www.poltergeist.ch/)  
[http://home.t-online.de/home/michael  
seiler/index.htm](http://home.t-online.de/home/michael_seiler/index.htm)  
<http://dboxupdate.berlios.de/>  
[http://dbox.cyberphoria.org/index2  
.html](http://dbox.cyberphoria.org/index2.html)  
<http://dbox2.elxsi.de/index-dbox2.html>  
[http://studwork.fbi.fh-darmstadt.de/  
dbox2/](http://studwork.fbi.fh-darmstadt.de/dbox2/)

#### Humax

[www.humsatsoft.gotoo.com/](http://www.humsatsoft.gotoo.com/)  
[www.humaxdigital.com/support/Files/  
ZIC.htm \(Z model firmware\)](http://www.humaxdigital.com/support/Files/ZIC.htm)  
[http://hacktv.metropoliglobal.com/  
humax.htm](http://hacktv.metropoliglobal.com/humax.htm)  
[www.digital-sat.it/humaxsoft.htm](http://www.digital-sat.it/humaxsoft.htm)  
[www.axs-ict.nl/humax5400/index.htm](http://www.axs-ict.nl/humax5400/index.htm)  
[www.humaxsettings.nl/](http://www.humaxsettings.nl/)  
[http://hummy.seslimuhabbet.com/index.  
php](http://hummy.seslimuhabbet.com/index.php)

[www.satarmy.de/main.html](http://www.satarmy.de/main.html)  
[www.humfree.de/](http://www.humfree.de/)  
[www.satcritics.com/index.php](http://www.satcritics.com/index.php)  
[http://216.40.195.253/%7Eesatsoft2/  
indexnext.htm](http://216.40.195.253/%7Eesatsoft2/indexnext.htm)  
[www.anticlip.de/6451.html](http://www.anticlip.de/6451.html)  
<http://sat4you.n3.net/>  
[www.poltergeist.ch/ \(auch hyundai\)](http://www.poltergeist.ch/)

#### Phillips

[www.axs-ict.nl/philips/](http://www.axs-ict.nl/philips/)  
**Receivers (general)**  
[www.satnerds.com/netpad/](http://www.satnerds.com/netpad/)

#### Files

[www.e-files.tk](http://www.e-files.tk)

[www.beamer.dk/](http://www.beamer.dk/)  
[www.geocities.com/satmeat/yourpage/  
html](http://www.geocities.com/satmeat/yourpage/html)  
[http://digitalfreesat.satfriends.com/  
home.htm](http://digitalfreesat.satfriends.com/home.htm)  
[www.kickme.to/schnelldenker](http://www.kickme.to/schnelldenker)  
[http://sat-digital-tv.provider.pl/starte  
.htm](http://sat-digital-tv.provider.pl/starte.htm)  
[http://people.freenet.de/dirk\\_diggler/](http://people.freenet.de/dirk_diggler/)  
[www.satfiles.nip.net/](http://www.satfiles.nip.net/)  
<http://surf.to/rolandvongilead>  
[www.satpage.de/index.php](http://www.satpage.de/index.php)  
[ww.satellite.stophier.nl/](http://ww.satellite.stophier.nl/)  
[www.thaidragon.com/Index2/Dr...  
ECRET/soft.html](http://www.thaidragon.com/Index2/Dr...ECRET/soft.html)  
[www.netzagent.com/freetv/key/](http://www.netzagent.com/freetv/key/)  
[http://geocities.com/satkoos15/index  
.html](http://geocities.com/satkoos15/index.html)  
<http://users.pandora.be/Sat.Sylvester/>  
[http://mitglied.lycos.de/rene21992/  
index/htm](http://mitglied.lycos.de/rene21992/index/htm)  
[http://forum.aussie.ch/boxman/cgi-bin/  
index.cgi](http://forum.aussie.ch/boxman/cgi-bin/index.cgi)

[www.moscowizards.de.vu/](http://www.moscowizards.de.vu/)  
<http://zac.covers.de/>  
[www.tv-decoder.de/](http://www.tv-decoder.de/)  
[www.sathack.com/index2.php3](http://www.sathack.com/index2.php3)  
[www.eurocrypt.net/index2.html](http://www.eurocrypt.net/index2.html)  
[www.thewizzard.da.ru/](http://www.thewizzard.da.ru/)  
<http://dr3ajeb.nip.net/>

#### Settings + DVB

[www.zwez.com/sat/](http://www.zwez.com/sat/)  
[www.digital-television.de/Frame/  
Frame.htm](http://www.digital-television.de/Frame/Frame.htm)  
[www.poltergeist.ch/](http://www.poltergeist.ch/)  
**Magic Module and CAM Modules**  
[www.satkinder.com/](http://www.satkinder.com/)  
[ww.visoduck.co.za](http://ww.visoduck.co.za)  
[www.magicfunclub.de/vu/](http://www.magicfunclub.de/vu/)  
[http://hacktv.metropoliglobal.com/  
CAMs.htm](http://hacktv.metropoliglobal.com/CAMs.htm)

[www.dream-multimedia.tv](http://www.dream-multimedia.tv)

#### Downloads

[www.tron-inter.net/sat-tv/sattv04.htm](http://www.tron-inter.net/sat-tv/sattv04.htm)  
[www.burks.de/tronbuch.html](http://www.burks.de/tronbuch.html)  
[www.roks.com.ua/d2mac/d2mac.htm](http://www.roks.com.ua/d2mac/d2mac.htm)  
[http://homepages.enterprise.net/  
smalone/dbfiles.html](http://homepages.enterprise.net/smalone/dbfiles.html)

#### Super Links

<http://monstersat.tiz.net/>  
<http://monstersat.nip.net/>  
[http://members.ams.chello.nl/pouwer...  
tanden/menu.htm](http://members.ams.chello.nl/pouwer...tanden/menu.htm)  
[www.btinternet.com/~laurals53/  
linksi0.htm](http://www.btinternet.com/~laurals53/linksi0.htm)

About this Internet source data listing: Knowing how to use Internet is step one. Knowing what you are looking for is step two. We make no pretext about this list - some of it is "evil" and "bad" and the content "shows no mercy" for the various conditional access providers. And this is but the "tip" of the "iceberg." Frankly, after ten hours of searching we grew tired of the exercise. Do **NOT** contact us for additional information concerning any site or CA related programmer. **DO** contact us with site address corrections or updates for future listings - *if we feel so inclined.*

### **(Super Links - continued)**

[www.satkoosclub.de.vu/](http://www.satkoosclub.de.vu/)  
[www.xfinder.netfirms.com/cgi-bin/dclinks.cgi](http://www.xfinder.netfirms.com/cgi-bin/dclinks.cgi)  
[www.d-boxx.de/](http://www.d-boxx.de/)  
<http://sverigesat.ubb.cc/>  
<http://kickme.to/raw>

### **FAQ Pages**

[http://212.227.135.16/keyteam/faq\\_htm/1.htm](http://212.227.135.16/keyteam/faq_htm/1.htm)  
<http://xxupsxx.fateback.com/>  
<http://cuba.xs4all.nl/hip/>  
<http://buerger.metropolis.de/digiwave/>

### **PIC Programming Utilities**

[www.wedzboyz.co.uk/wedzboyz/...utils/index.htm](http://www.wedzboyz.co.uk/wedzboyz/...utils/index.htm)  
[www.ic-prog.com/index1.htm](http://www.ic-prog.com/index1.htm)  
<http://margo.student.utwente.nl/el/micros/pl>  
<http://maxking.com/>  
[www.davin.ottawa.on.ca/~martin/public/pic/](http://www.davin.ottawa.on.ca/~martin/public/pic/)  
<http://hacktv.metropoliglobal.com/picard.htm>  
<http://ac16.uni-paderborn.de/arbeitsstech/pichtml/>  
[www.semis.demon.co.uk/Pics/PICmain.htm](http://www.semis.demon.co.uk/Pics/PICmain.htm)  
<http://come.to/thepicarchive/>

### **Smart Card Hacking**

<http://gsho.thur.de/>  
[www.logosec.de/frame.htm](http://www.logosec.de/frame.htm)  
[www.chipcard.tv/Karten/karten.html](http://www.chipcard.tv/Karten/karten.html)

### **ATMEL 8515 Funcard to CA**

[www.atmel.com](http://www.atmel.com)  
<ftp://www.atmel.com/pub/atmel/asmpack.exe>  
[www.atmel.com/atmel/acrobat/doc1022.pdf](http://www.atmel.com/atmel/acrobat/doc1022.pdf)  
[www.atmel.com/atmel/acrobat/doc0841.pdf](http://www.atmel.com/atmel/acrobat/doc0841.pdf)

### **Seca**

[www.freeseika.nip.net/](http://www.freeseika.nip.net/)  
<http://kickme.to/methamorph>  
[http://kickme.to/seca \(Russian\)](http://kickme.to/seca (Russian))  
<http://rossisat.web1000.com/Pagine/Secca.htm>

### **Viaccess**

[www.d2codes.com/eurocrypt/](http://www.d2codes.com/eurocrypt/)

### **French, Italian (et al)**

[www.multiplanete.com/](http://www.multiplanete.com/)  
[Cludios-Planete/](http://Cludios-Planete/)  
<http://icesat.azn.nu/>  
[www.portalpirata.com/piccard1.html](http://www.portalpirata.com/piccard1.html)  
<http://stopardisat.tux.nu/>  
<http://hacktv.metropoliglobal.com/espanol.html>

[http://satupdate.averi.hr/download/index\\_programi.asp](http://satupdate.averi.hr/download/index_programi.asp)  
<http://xproject3000.cjb.net/>  
[www.axtermixsat.com/](http://www.axtermixsat.com/)  
[www.biosat.da.ru/ \(gibt es auch DLL und OCX\)](http://www.biosat.da.ru/ (gibt es auch DLL und OCX))  
<http://spidersat.tux.nu/>  
[www.zackyfiles.com/](http://www.zackyfiles.com/)  
[www.portalpirata.com/](http://www.portalpirata.com/)  
[www.paistortuga.net/~malavak/](http://www.paistortuga.net/~malavak/)  
[www.anticlip.de/index3.html](http://www.anticlip.de/index3.html)  
[http://membres.lycos.fr/sekahome//f\\_rame.htm](http://membres.lycos.fr/sekahome//f_rame.htm)

### **Ghost Writer (Support)**

<http://64.23.80.81/settings/index.html>  
**Chat**  
<http://spinnes-homepage.chatlogin.com/>  
[www.zapp-chat.de.vu/](http://www.zapp-chat.de.vu/)

### **Windows - Tips and Hints**

[www.publish4you.de/winanalyse/](http://www.publish4you.de/winanalyse/)

### **Hacks and Cracks**

[www.portal13rue.com/decodificacion\\_csd.htm](http://www.portal13rue.com/decodificacion_csd.htm)  
<http://astalavista.box.sk/cgi-bin/robot>  
[www.kickme.to/grauzone](http://www.kickme.to/grauzone)

### **(Older) Pages**

[www.kartenali.2fbi.de/](http://www.kartenali.2fbi.de/)  
[http://members.lycos.co.uk/owenski/irdeto\\_hexfiles.htm](http://members.lycos.co.uk/owenski/irdeto_hexfiles.htm)  
<http://naedfair.nip.net/>  
[http://members.lycos.co.uk/owenski/seca\\_hexfiles.htm](http://members.lycos.co.uk/owenski/seca_hexfiles.htm)  
<http://go.to/waferjo>

### **ETSI (Euro Telecom Standards Insti.)**

[www.etsi.org](http://www.etsi.org)  
**Cable/Miscellaneous**  
[http://66.40.78.100/Services/TECH\\_Notes/ten.html \(SA, GI\)](http://66.40.78.100/Services/TECH_Notes/ten.html (SA, GI))  
[www.megawan.net \(2.4GHz mw\)](http://www.megawan.net (2.4GHz mw))

### **Programme Guide**

<http://geoserver.virtualave.net/pwguid/>

### **News and Updates**

[www.dr7.com](http://www.dr7.com)  
[www.actionone.com \(Canal +\)](http://www.actionone.com (Canal +))  
[www.nds.com](http://www.nds.com)  
[www.legal-rights.org \(Canada\)](http://www.legal-rights.org (Canada))  
[www.freewaysupport.com \(Canada\)](http://www.freewaysupport.com (Canada))  
[www.apsattv.com \(NZ, Australia\)](http://www.apsattv.com (NZ, Australia))  
[www.auspaytv.com \(Australia\)](http://www.auspaytv.com (Australia))

### **Hardware Suppliers (Pacific only)**

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[www.psau.com \(Pacific Satellite\)](http://www.psau.com (Pacific Satellite))  
[www.strong.com.au](http://www.strong.com.au)

[www.melbournesatellites.com](http://www.melbournesatellites.com)  
[www.kristal.com.au](http://www.kristal.com.au)  
[www.ikusi.com](http://www.ikusi.com)  
[www.avcomm.com.au](http://www.avcomm.com.au)  
[www.johnselectronics.com.au](http://www.johnselectronics.com.au)  
[www.sdstv.com](http://www.sdstv.com)  
[www.sdstv.co.za](http://www.sdstv.co.za)  
[www.sciteq.com.au](http://www.sciteq.com.au)

### **Grey Market Suppliers (UK)**

(Key: 1 = card programmers, 2 = wafer cards, 3 = CAMs, 4 = information)

[www.pulsat.com](http://www.pulsat.com) (1,2,3)  
[www.pcinfocentre.com/ws1](http://www.pcinfocentre.com/ws1) (1,2,3,4)  
[www.bentleys.tv](http://www.bentleys.tv) (1)  
[www.wizardsatellite.co.uk](http://www.wizardsatellite.co.uk) (1,2,3)  
[www.turbosat.com](http://www.turbosat.com) (3)  
[www.nesat.com](http://www.nesat.com) (1,2,3)  
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[www.satcard.co.uk](http://www.satcard.co.uk) (1,2)  
[www.waferworld.co.uk](http://www.waferworld.co.uk) (1,2)  
[www.hisat.com](http://www.hisat.com) (3)  
[www.sat-equip.co.uk](http://www.sat-equip.co.uk) (2,3)  
[www.tracsat.co.uk](http://www.tracsat.co.uk) (1)  
[www.brymar.co.uk](http://www.brymar.co.uk) (2,3)  
[www.myersat.com](http://www.myersat.com) (3)  
[www.mmwafercards.com](http://www.mmwafercards.com) (2)  
[www.satvision.tv](http://www.satvision.tv) (1,2)  
[www.spectrum.uk.com](http://www.spectrum.uk.com) (1,3)  
[www.transworldsatellites.co.uk](http://www.transworldsatellites.co.uk) (1,2,3)  
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[www.digitalsales.co.uk](http://www.digitalsales.co.uk) (1,2)  
[www.cardman.co.uk](http://www.cardman.co.uk) (1,2)  
[www.horizonsatellites.co.uk](http://www.horizonsatellites.co.uk) (2,3)  
[www.rtv.co.uk](http://www.rtv.co.uk) (2)  
[www.solentsatellite.co.uk](http://www.solentsatellite.co.uk) (1,2,3)  
[www.satellitesuperstore.com](http://www.satellitesuperstore.com) (3)

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**ANALOGUE receiver/dish controller.** Are we crazy, or just plain stupid? We have this very large supply (anything more than 3 would be a "very large supply" - in this case) of Palcom SL7700 super-low-threshold analogue receivers. Brand new, factory cartons. Analogue? Yes, we said analogue. Good grief. What a disaster! Maybe not. The SL7700 when reviewed by SatFACTS yonks and yonks ago was rated "*the very best of the best*". It still is. So what makes this worthy of you spending your money? Well #1 - it has full automatic tracking of the satellite. The dish mover "brain" samples the signal every minute or so and if the satellite is moving (such as the Russian birds for TNT and NTV), it creates a pulse to the dish mover to repeak the signal. Better yet - it does this for both the elevation and azimuth motor drives! The signal need not even be a "real" analogue TV carrier - it can be a beacon, for example. #2 - it has step after step after step of threshold extension - the last of the "*red hot analogue weak signal machines*". #3 - playing with SDStv.com analogue stuff in L-band? That's right - super low threshold for maximum SDStv.com range. #4 - finally, if you have a digital IRD but lack a suitable dish mover, the SL7700 is the best and easiest to use - bar none. The price? An astounding \$300!

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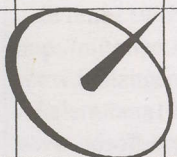
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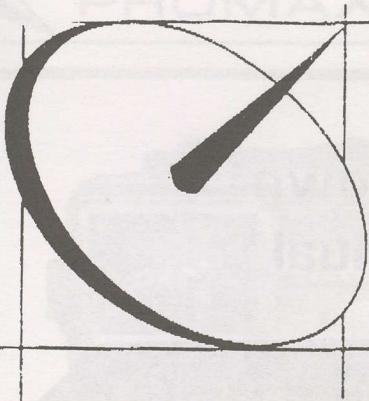
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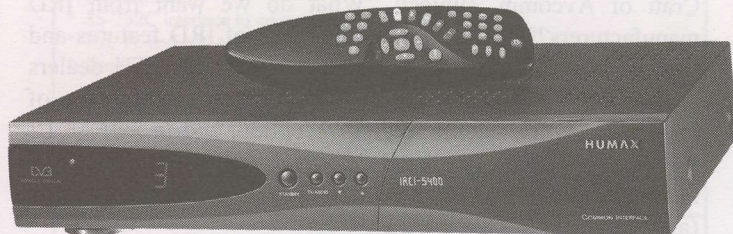
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When is a FTA IRD a cut-above?

## When Garry Cratt Sits Down and writes the user manual

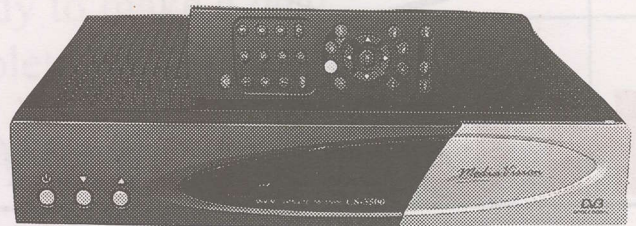
One of the stellar events during the 2000 Melbourne SPACE satellite conference was an ad-hoc discussion led by Garry Cratt of Avcomm, subject: "What do we want from IRD manufacturers??" Garry compiled a list of IRD features and IRD improvements which the approximately 50 DTH dealers on hand believed were important to convey to designers of set-top boxes for satellite digital reception, and in SatFACTS for August (2000) we listed 30 suggested improvements in receivers. We hoped receiver designers in Asia were listening (and reading).

Item #29 (out of 30 - not in order of importance) read, "Two separate instruction manuals - one for installation, one for user. End the confusing mixing of installation and operational data in the same manual."

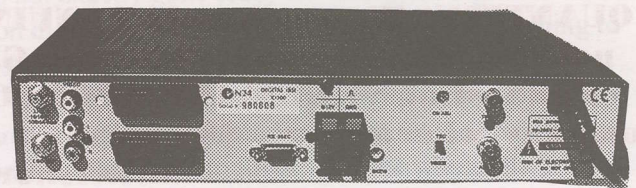
Cratt had begun the discussion of user manuals by noting, "The manuals are hopeless, shocking." Indeed they were and to some extent they are now better. But the South Pacific (world) region has been fighting a losing battle in this department primarily because the majority (as in 90+ percent) of IRDs are now designed for and sold directly into the Euro-African-Middle East marketplace and what we get down here remains the "left overs."

To be truly useful, the instruction manual should reflect our regional conditions, concentrating on satellites which are available to us and using examples which reflect that availability. When IRD creators are faced with German, Spanish, French, Italian, Arabic speaking customers, English becomes an after thought and worse than that, South Pacific needs are simply not considered.

Garry Cratt's current SatFACTS advertising begins with the line, "Satellite TV is a great hobby - let's not forget that!" In fact, most suppliers don't share Garry's hobbyist service direction and many consider hobbyists to be "more troublesome" because they ask questions which are difficult (or impossible) to answer and a skilled hobbyist is quick to pick up on a product which does not quite do all that it may



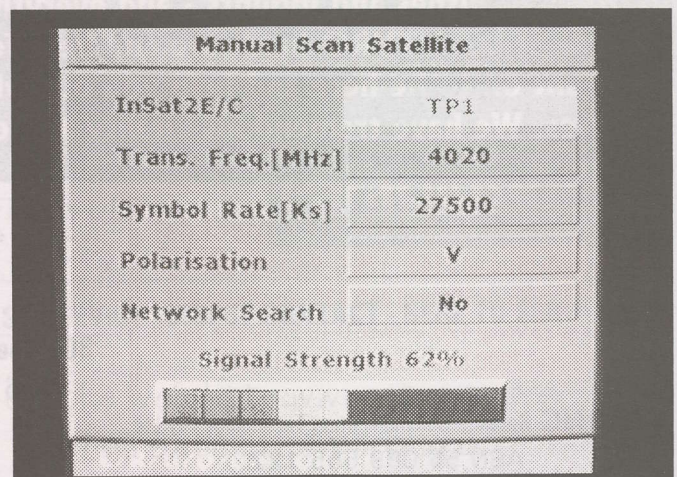
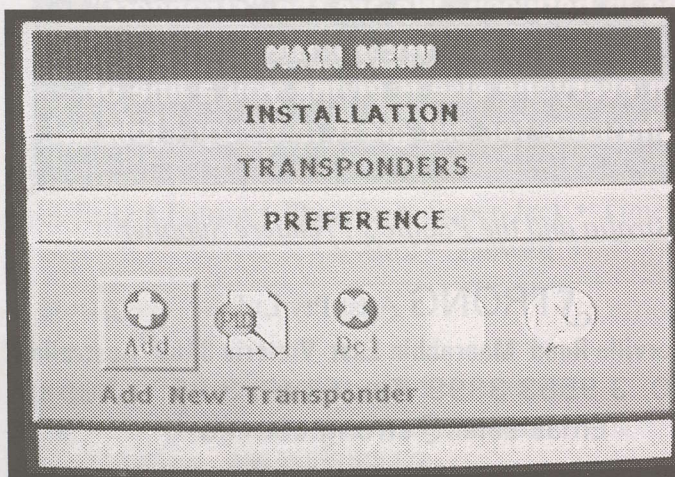
R3100 is ...well ... another free to air IRD. It works properly, has all of the connections you require, and is priced fairly.

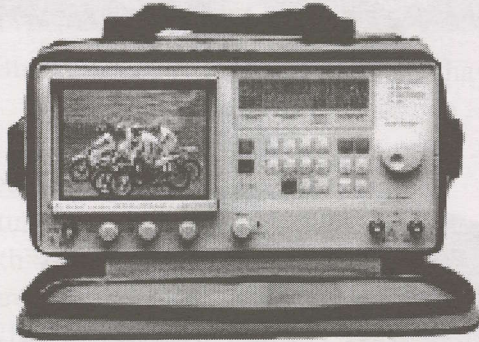


have claimed in advertising. Cratt, on the other hand, lives and breathes the hobby side of the business and his newest receiver, the R3100, is a fine example of this passion.

The manual. After more than 100 IRDs imported one-off for test, and recognising that if the buyer is confused by a poorly created receiver installation / user manual, the receiver could attract a bad name, Garry Cratt has taken his own advice given so freely in Melbourne. The R3100 is a receiver which does the usual things with grace and ease but most important of all, Garry sat down and wrote a manual just for this receiver just for Australia and New Zealand. The draft version manual sent to SatFACTS along with the receiver for test and review is 35 pages, properly illustrated with off-screen photos that greatly enhance the word description of each step. It helps that Garry has authored excellent reference books dealing with satellite TV ("[The Practical Guide to Satellite TV](#)"), pioneered home DTH reception equipment in Australia and became so

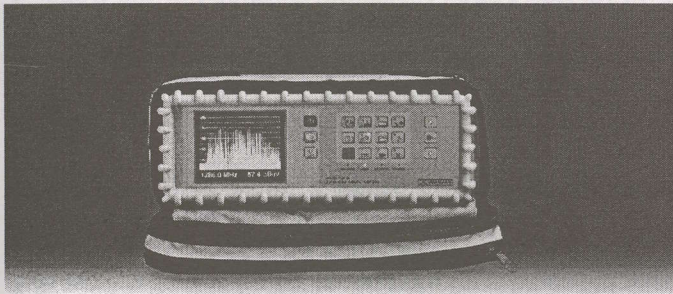
Installation menu is straight forward and if that gives you trouble, the written manual is the very best we have seen from any DVB-T creator.





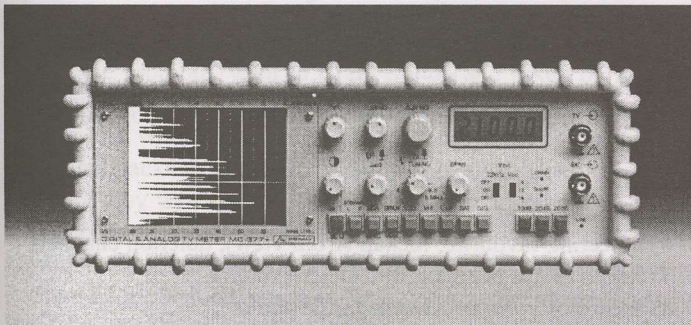
**PROLINK-7**

- \* Tuning range from 5-862 MHz and from 920 to 2150MHz
- \* Analogue and digital TV measurements
- \* 5.5" B&W monitor
- \* Image, spectrum and synchronism pulse display
- \* Direct measurements: level, V/A and C/N ratio for analogue channels, and power into channel bandwidth and C/N ratio for digital channels.
- \* BER measurement of QAM, QPSK, and OFDM modulated signals (optional)
- \* External units power supply and 22 kHz signal
- \* 99 memories for measurement configurations
- \* Data logger function (more than 900 measurements can be aquired automatically)
- \* RS-232C interface to connect a PC or serial printer
- \* FM, TV and NICAM sound
- \* Scart connector



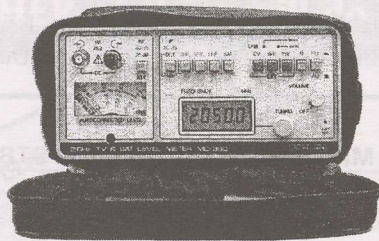
**PROLINK-2**

- \* Range 46-860 MHz, 920-2150 MHz
- \* Analogue: Level, V/A, C/N and picture
- \* Digital: Channel Power (integration method), C/N and BER in Satellite DVB-QPSK (MCPC/SCPC)
- \* Spectrum Analyser with 50 dB dynamic range and calibrated. Allow analysis of analogue and digital channels simultaneously
- \* Spectrum sweep: high speed/high accuracy
- \* Teletext and NICAM
- \* RS-232 interface for connection to PC or external printer. Allows firmware update
- \* Software for data transfer and reports generation
- \* QPSK Card included



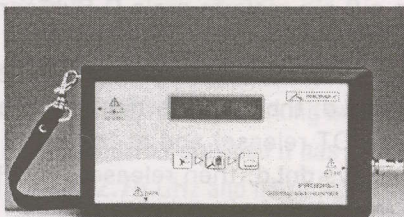
**MC-377+**

- \* Tuning range from 48 to 855 MHz and 950 to 2050 MHz
- \* Resolution 10 kHz in VHz and UHF, 100 kHz in SAT
- \* B&W CRT 4.5"
- \* Analogue signals level
- \* Digital channel power
- \* Measurements C/N ratio of analogue and digital signals
- \* Reading scale calibrated in dBµV (linear) analogue signals level measurement and digital channel power measurement
- \* Impedance 75 Ω
- \* Scart connector



**MC-360B**

- \* Tuning range from 46 to 856 MHz and 950 to 2050 MHz
- \* Alphanumeric display, it shows the tuned frequency
- \* Analogue and acoustic indication of the measured level
- \* External units power supply: 13, 15 and 18 V and 22 kHz signal
- \* AM & FM sound demodulation



**PRODIG-1**

- \* Tuning range from 950 to 2150 MHz, 16 measurement points
- \* Input impedance 75 Ω
- \* Universal connector with BNC or F adaptor
- \* Level range 30 dBµV to 90 dBµV
- \* Maximum signal level 120 dBµV
- \* QPSK signal parameters, symbol rate 1000 to 30000 kbauds
- \* Code Rate Auto and 1/2, 2/3, 3/6, 5/6, 6/7, 7/8
- \* Automatic spectral inversion
- \* External units power supply, output voltage 13 V, 18 V ± 1V
- \* 22 kHz signal

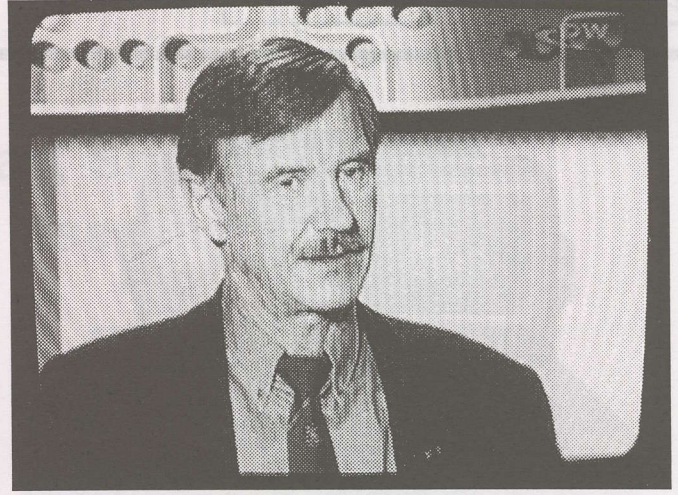
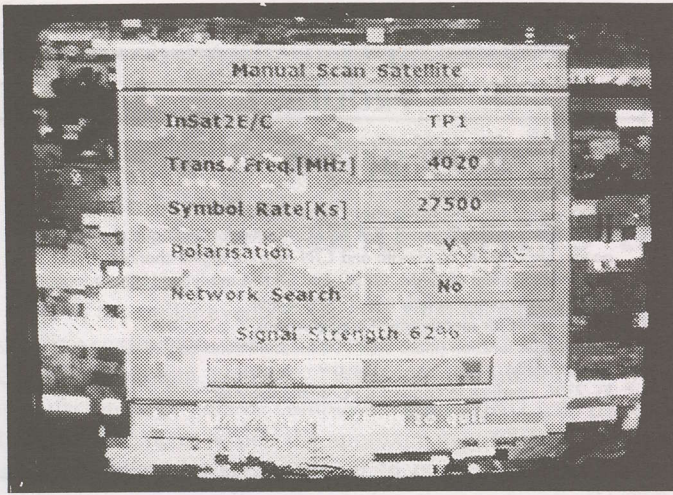
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Precisely!



NO - we did not bother to change the bird name (InSat 2/E) for our 4020Vt (AsiaSat 2) check of the Dubai MUX; it failed (left) but since they brought their EIRP back up, can report it works fine now. European Bouquet reception (DW) is nominally good - the slight herringbone lines are an artefact of the film processing, not the actual reception (which is blemish free).

enamoured with the entire concept that he left a 11 year career position with Dick Smith Electronics to found Avcomm Pty Ltd.

Garry's R3100 "User Manual" is the natural product of all of those life steps which have brought him to his present station in life. Without equivocation, it is the best user manual we have read and put to use with a FTA IRD. For example, the DiSEqC 1.2 motor control option leaves nothing to user mis-interpretation. When the manual talks about one aspect of installation (such as - "adding a transponder"), other related steps that might interplay with the chosen procedure are carefully listed. Example:

"(After describing the adding of a new transponder to the memory) Refer to the procedures of Auto Search Mode / Manual Search Mode / Preset Search Mode described in [#] 6 - How to add satellite transponder, to start the scanning of the [added] transponder."

What Garry's multi-decades of experience has taught him is that no single IRD programming step is isolated from the balance of the software, that when you do "A", "B" follows and sooner or later "Z" appears. Making everything that associates with another step "obvious" is a mark of the practical hands-on experience here.

#### But does it work?

Fair question. Could this be a glossy shell with nothing inside? Absolutely not. Nobody in the Pacific (perhaps the world) has done hands-on testing with more DVB-S receivers than Cratt and it is his habit to stay on the leading edge of new designs, but seldom if ever the "first" to bring into Australia an untested and unproved device from a firm that is unlikely to be around long enough to back up the product.

The R3100 includes the following features:

- 1) 4:3 or 16:9
- 2) On screen set-up of UHF modulator (PAL-B/G, I, D/K or NTSC)
- 3) DiSEqC 1.2 control of an (optional) motorised dish controller
- 4) Satellite, transponder, PID search routines
- 5) LNB frequency options
- 6) Selecting favourite, locked (from view), deletion channels
- 7) Radio or TV access (2000 channel memory)
- 8) Stereo or right and left separate audio
- 9) EPG functions

In other words, it does what so many others do. Does it do it better? Not really, but it does it as well as. Is it sensitive? We had no trouble loading the late-April-new Dubai Mux (As2,

#### How to Upload Channel Data, Satellite Database and Main Software to another STB

(an example of the thoroughness of the R3100 user manual)

(Box-to-box for FTA Digital Model)

Identification: "A Set" - Original (upload from here) "B Set" - Copy-to set (download)

- 1) Connect two STBs through RS-232 cable, being sure to use a **9-pin male to male D-Sub connector null modem cable**.
- 2) "A Set": Press **POWER** button on the front panel (hold it in - do NOT release) and at the same time plug in the power cord, waiting for the front panel LED to display **UPLd**; then release the **Power** button.
- 3) "B" Set": Press the **UP** button on the front panel (hold in - do NOT release) and at the same time plug in the unit's mains cord, and wait until the front panel LED displays **dnLd**; then release the **UP** button.
- 4) When copying box-to-box, the front panel of:
  - A Set: will appear **FLSH**
  - B Set: will appear **FUSE**
- 5) In two minutes or less, the front panel on both "A" and "B" will display **boot**, both STBs will reboot, and the copying process will be complete.



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  - Aurora Card
  - LNB
  - 90 cm Dish (choice of 2 brands)
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4020Vt) but once loaded it would not play for us (photo, page 20). We promptly went to Craig Sutton and asked on his web site whether others were experiencing similar problems. They were and when Dubai cranked their power back up the five channel package looked just fine. We just happened to catch it before they were "settled in" on their new transponder. But this pointed up a curious thing. Normally, when a SCPC (which it does beautifully) or MCPC are marginal (not strong enough to produce images), and you are trying to load the service the first time, there is simply no loading. Not with the

### EITHER of these will do ...



Paying up to **US\$200** for any working model of the Gardiner Ku LNBs shown - provided it has **LO** of **11.3 GHz**, **input 12.25 - 12.75 GHz** and **noise figure of 0.5 or 0.6 dB**. OR will swap for brand new MPEG-2 IRDs, top quality commercial analogues - you name it! Need one or a dozen - look on YOUR shelf!

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PacStar ST7.5	2.3m heavy duty polar mount mesh	<b>SASK!</b>
Jason Ku	0.75m dish/bracket/LNB	\$1xx
	<b>Receivers</b>	
Innovia	FTA digital	\$2xx
Dion D513	FTA digital, DiSEqC positioner	\$2xx
Goldst GS2800	Irdeto emb (Aurora, Jade, LBC)	\$3xx
Dion D620	2 CI wlots, digital, DiSEqC	\$3xx
Dion D520	Digital FTA + analogue, DiSEqC	\$4xx
	<b>LNBs</b>	
Zinwell ZCF-D	15K C-band LNBf	\$40
PBI Trbo 1200	C-band LNB	\$25
PBI 1040	Ku-band LNB	\$30
PBI	C + Ku bands LNBf	\$130
Zinwell ZKF-J	Universal Ku offset LNBf	\$30
Zinwell ZKF-H	11.300 MHz LO Ku offset LNB	\$30
	<b>Actuators</b>	
Super Pwr Jack	18" actuator	\$65
Super Pwr Jack	24" actuator	\$70
	<b>Positioners</b>	
Super Pwr Jack	EZ2000 positioner, 32 memories	\$85
Motec MP880	60 memory high quality	\$95
V-Box	Motec high quality	\$105
	<b>Other</b>	
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Switch	22 kHz tone switch	\$15
Bracket	65 pole wall bracket	\$5-\$15

R3100. It loads signals which are, well, marginal even if they won't play. That could be an interesting "perk" or it could be an annoying defect; we are not certain which at this point! By the way, several (3) other receivers we attempted to load when Dubai 4020Vt was "down" simply would not load so maybe the message here is, this is an interesting receiver when it comes to marginal signals.

Annoying department. When you are loading a new transponder with new parameters, the key pad entry goes from first number (left) to right - one digit at a time. Nothing unusual there. But if you mis-key a number, there is no going back. You have to complete the series and then re-key (start over) being more careful the second time around. Our preference is for a receiver to allow you to "back space" when you screw up and re-enter an erroneous number.

Are these defects? No, simply software programmer choices made when the receiver was being created. Overall, a fine receiver at a fair price (not revealed here) from the industry's "senior supplier" with a track record the envy of most. Avcomm Pty Ltd, at tel 61.-2-9939 4377, fax 61-2-9939 4376 or e-mail cgarry@avcomm.com.au.

# SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 May 2002

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym	
Them3/78.5	SkyChAust	3695/1455V	up to 3	3/4	5(.000)	
	MRTV-Myn	3676/1474H	1	2/3	6(.000)	
	MidEst Mux	3640/1510H	up to 12	3/4	28(.066)	
	Mahar/DD1	3600/1550H	up to 8	3/4	26(.661)	
	ME Mux	3569/1581H	up to 4	3/4	9(.000)	
	Nepal TV+	3554/1596V	3+ in mux	3/4	13(.333)	
	3ABN +	3551/1600H	4+ TV, radio	3/4	13(.330)	
	JAIN TV	3538/1612V	1TV	3/4	3(.300)	
	PTV1 +	3521/1629V	1TV, 1 radio	3/4	3(.333)	
	TARBS?	3520/1630H	unknown	3/4	28(.062)	
	TARBS/Th5	3480/1670H	6+ TV?	3/4	18(.180)	
	Thai Global	3425/1725V	up to 7?	2/3	27(.500)	
InSat 2E/83	ETV mux	4005/1145V	6+ TV	3/4	27(.000)	
	DD2	3910/1240V	1	3/4	5(.000)	
	DD National	3830/1320V	1	3/4	5(.000)	
	Kairali TV	3699/1451V	1	3/4	3(.184)	
	AsiaNet	3683/1467V	1	3/4	4(.340)	
	Jaya TV	3615/1535V	1	3/4	3(.255)	
	ETV Mux#2	3485/1665V	4+TV	3/4	27(.000)	
	ST1/88E	MMBN	3632/1518V	12TV	3/4	26(.667)
	As2/100.5E	Euro Bouqt	4000/1150H	6TV, 21r	3/4	28(.125)
		5-Star Med	3951/1199H	3TV	3/4	13(.185)
WorldNet		3880/1270H	4+/20+radio	1/2	20(.400)	
Hubei/HBT		3854/1296H	1	3/4	4(.418)	
Hunan/SRT		3847/1303H	1	3/4	4(.418)	
Guan./GDT		3840/1310H	1	3/4	4(.418)	
In. Mongolia		3828/1322H	2	3/4	8(.397)	
APTN Asia		3799/1351Hz	1	3/4	5(.632)	
Reuters/Sing.		3775/1375H	1	3/4	5(.631)	
WorldN/US		3764/1386H	1 + 20 radio	3/4	6(.100)	
Liaonin/Svc2		3734/1416H	1	3/4	4(.418)	
Jiangx/JXT		3727/1423H	1	3/4	4(.418)	
Fujian/SET		3720/1430H	1	3/4	4(.418)	
Hubei TV		3713/1437H	1	3/4	4(.418)	
Henan/Main		3706/1444H	1	3/4	4(.418)	
Egypt/Nilesat		3640/1510H	7+, radio	3/4	27(.850)	
As2/100.5E		Feeds	4086/1064V	1	3/4	5(.632)
		Dubai MUX	4020/11430V	4+, radio	3/4	27(.500)
		Jilin Sat TV	3875/1275V	1	3/4	4(.418)
		HeiLongJian	3834/1316V	1	3/4	4(.418)
	JSTV	3827/1323V	1	3/4	4(.418)	
	Anhui TV	3820/1330V	1	3/4	4(.418)	
	ShaanxiQQ	3813/1337V	1	3/4	4(.418)	
	Guan/GXTV	3806/1344V	1	3/4	4(.418)	
	Fashion TV	3795/1355V	1	3/4	2(.533)	
	MSTV	3791/1359V	1	3/4	4(.340)	
	Myawady	3766/1384V	1	7/8	5(.080)	
	Saudi TV1	3660/1490V	5+tests	3/4	27(.500)	
	As3S/105.5	Zee bouquet	3700/1450V	10TV	3/4	27(.500)
		Arirang TV	3755/1395V	1	7/8	4(.418)
		Now TV +	3760/1390H	4	7/8	26(.000)
		Star TV	3780/1370V	22(+TV	3/4	28(.100)
		Star TV	3860/1290V	18(+TV, 1r	3/4	27(.500)
		Star TV	3880/1270H	19(+TV	7/8	26(.850)
Indus Music		3900/1250V	5TV	7/8	27(.895)	
Star TV		3940/1210V	9(+TV	7/8	26(.850)	
CNNI		3960/1190H	6(+TV	3/4	25(.500)	
StarTV		3980/1170V	2+TV	3/4	28(.100)	
Star TV		4000/1150H	10(+TV	7/8	26(.850)	
Sun TV		4095/1055H	1	3/4	5(.554)	
CCTV bqt	4129/1021H	4(+ TV	3/4	13(.240)		
Zee Bqt #2	4140/1010V	8(+ TV	2/3	22(.000)		
Cak1/107.5	Indovision (S-band)	2.536, 2.566, 2.596, 2.626	33(+ TV	7/8	20(.000)	
	IndoBqt	3460/1690H	up to 6	3/4	28(.000)	
T'Kom/108E	TPI	4185/965V	1	3/4	6(.700)	
C2M/113E	Anteve	4144/1006V	1	3/4	6(.510)	

Receivers and Errata
Finally settled here from As2
erratic service
Now essentially all CA
USA religion chs, CMM music FTA
New November - possibly TARBS?
FTA + CA mux
3 Angels USA, Ch of Hope, + 9 radio
new here April; PIDs 4132/4133
recent frequency change
MUX tdssting (April), believed TARBS
TARBS labell, CA-no SIDs
FTA (reaches SE Australia)
Several ETV now here; wide beam
SCPC, OK E. Aust. wide beam
SCPC; OK E. Aust. wide beam
SCPC, OK E. Aust. wide beam
SCPC, OK E. Aust. wide beam
SCPC; OK E. Aust. wide beam
Several new ETV here; wide beam?
Nagravision, some FTA; erratic
FTA; MCM gone
Macau MUX
"May" move here-replace analogue
FTA SCPC, teletext
FTA SCPC, teletext
FTA SCPC, radio APID 81
FTA: #1 Mongolian, #2 Mandarin
Sometimes FTA; also 3895Vt
FTA & CA
FTA; to shut down "soon" (see 3880H)
FTA SCPC, radio APID 256
FTA SCPC, teletext, radio APID 81
FTA SCPC, + radio APID 80
FTA SCPC, radio APID 80
FTA SCPC, + radio
Thru TARBS Aust, occ. FTA
FTA SCPC feeds
FTA including sport
FTA SCPC, + radio
FTA SCPC
FTA SCPC, + radio
FTA SCPC + radio
FTA SCPC, radio APID 81
FTA SCPC, radio APID 257
Now Irdeto version 2 CA
FTA SCPC
FTA SCPC - difficult to load
FTA MCPC
Mediaguard CA; 2 FTA
FTA SCPC; reported audio problems
CA + NOW-TV FTA
NDS CA (Pace DVS211, Zenith)
NDS CA (Pace DVS211, Zenith)
NDS CA (Pace DV211, Zenith)
PAL, NTSC, 1 ch CA
NDS CA as above
PowVu CA; new SR Apr 29
NDS CA (Pace DVS211, Zenith)
NDS CA + 24(Chinese) FTA
"History Channel" testing SCPC
moved from 4115
Mediaguard CA
NDS CA using RCA/Thomson,
Pace IRDs
also 3586H/17.500, 3496H/19.615
FTA SCPA; NT/NC only
change from 4055V; FTA SCPC

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym	
(C2M)	<b>Indo Mux</b>	4080/1070H	5+ TV	3/4	28(.125)	
	<b>Indosiar</b>	4074/1076V	1	3/4	6(.500)	
	<b>SCTV</b>	4048/1102V	1	3/4	6(.618)	
	<b>Indone.Mux</b>	4000/1250H	6+TV	3/4	26(.085)	
	<b>Satelindo</b>	3935/1215H	1TV	3/4	6(.700)	
	<b>TPIN</b>	3924/1226H	1TV	3/4	5(.632)	
	<b>Indo. MUX</b>	3880/1270H	3+ TV	3/4	28(.125)	
	<b>Brunei/Sing</b>	3733/1417H	1TV	3/4	6(.000)	
	<b>RCTI</b>	3473/1677H	1	3/4	8(.000)	
	<b>Myawad TV</b>	3706/1444H	1	3/4	5(.924)	
Jc3/12	Miracle Net	3996/1154V	3 up to 6	5/6	22(.000)	
	Asian bqt	3960/1190V	up to 8	7/8	30(.000)	
Meas2	Astro Mux	11.602H (+)	up to 10TV	3/4	41(.500)	
3/156	<b>Mediasat</b>	12.336V/T2	5TV, 3 radio	2/3	30(.000)	
	Aurora	12.407V/T3		2/3	30(.000)	
	Aurora	12.532V/T5	Inc Zee TV	2/3	30(.000)	
	Aurora	12.595V/T6		3/4	30(.000)	
	Aurora	12.657V/T7	TV tests	2/3	30(.000)	
	Aurora	12.720V/T8		3/4	30(.000)	
	Austar	12.314H/T9	iTV + here	3/4	29(.473)	
	Austar/Optus	12.376H/T10		3/4	29(.473)	
	Austar/Foxtl	12.438H/T11		3/4	29(.473)	
	Austar/Foxtl	12.501H/T12		3/4	29(.473)	
	Austar/Foxtl	12.564H/T13		3/4	29(.473)	
	Austar/Foxtl	12.626H/T14		3/4	29(.473)	
	Austar/Foxtl	12.688H/T15	(some FTA ra)	3/4	29(.473)	
	O1/160	<b>ABC NT fd</b>	12.258V	1TV, 3 radio	3/4	5(.026)
		<b>ABC feeds</b>	12.317H	1	3/4	6(.980)
<b>Net 7 service</b>		12.367H	1	3/4	7(.200)	
<b>Central 7</b>		12.354H	1TV	3/4	3(.688)	
<b>Imparja mx</b>		12.360H	1	3/4	5(.424)	
<b>Sport feeds</b>		12.420V	1	3/4	6(.110)	
Mediasat#3		12.424H	3+ TV	2/3	19(.800)	
<b>TVNZ DTH</b>		12.456V	2TV	3/4	22(.500)	
<b>Nine Net</b>		12.512H	1 TV typ.	3/4	5(.632)	
Sky NZ		12.519/546V	7TV/7TV	3/4	22(.500)	
Sky NZ		12.581/608V	6TV/6TV	3/4	22(.500)	
Sky NZ		12.644/671V	9TV	3/4	22(.500)	
<b>ABC HDTV</b>		12.670H	5TV	7/8	14(.300)	
Tel/Saturn		12.707/733V	8+TV, 1 radio	3/4	22(.500)	
P8/166		<b>ABC A-P</b>	12.301H	1TV	5/6	5(.858)
	TARBS3	12.326H	13TV + radio	3/4	28(.067)	
	TARBS	12.526H	13TV + radio	3/4	28(.067)	
	TARBS2	12.606H	13TV + radio	3/4	28(.067)	
	TARBS5	12.646H	testing	3/4	28(.067)	
	TARBS4	12.726H	13TV + radio	3/4	28(.067)	
	JEDI/TVB	12.686H	11+ TV	3/4	28(.126)	
	<b>ABC A-P</b>	4180/970H	2TV, 2 radio	3/4	27(.500)	
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(.125)	
	NHK Joho	4065/1085H	7TV, 1 radio	3/4	26(.470)	
	ESPN USA	4020/1130H	7+TV, data	7/8	26(.470)	
	Discovery	3980/1170H	8 typ.	3/4	27(.690)	
	CalBqt/Pas8	3940/1210H	up to 8TV	7/8	27(.690)	
	<b>CNBC HK</b>	3900/1250H	up to 7TV	3/4	27(.500)	
	<b>TaiwanBqt</b>	3860/1290H	4TV + 30 radio	5/6	28(.000)	
<b>CCTV Mux</b>	3839/1311H	up to 4	3/4	13(.240)		
<del>EMTV PNG</del>	<del>3808/1342V</del>	<del>1 + 2 radio</del>	<del>3/4</del>	<del>5(.632)</del>		
CNNI	3780/1370H	3, up to 5 TV	3/4	25(.000)		
MTV	3740/1410H	8	2/3	27(.500)		
P2/169	Pv Bouquet	12.281V	2+ TV, radio	2/3	27(.500)	
	WA PowVu	12.637(.5)V	4TV, 8 radio	1/2	18(.500)	
	TVB Mux	4026/1124V	up to 8	3/4	22(.000)	
	Fox Bouquet	3992/1158V	8TV/data	7/8	26(.470)	
	<b>Feeds</b>	3966/1184V	1	2/3	6(.620)	
	<b>Feeds</b>	3957/1193V	1	2/3	6(.620)	
	<b>Feeds</b>	3929/1221V	1	3/4	10(.850)	
	<b>Feeds</b>	3912/1238V	1	2/3	6(.620)	
	<b>Feeds</b>	3898/1252V	1	2/3	12(.000)	
	<b>Middle East</b>	3836/1314V	4 typ	3/4	13(.331)	
	<b>Feeds</b>	3803/1347V	1	3/4	6(.000)	
	BBC +	3743/1407V	3	3/4	21(.800)	

Receivers and Errata
Global TV - frequent changes in lineup
FTA; solid on 3.5m in New Caledonia
FTA SCPC; NT/NC only
unstable platform - testing?
Test card only reported
New Feb 2002; also 3718H, same parm
TVRI, others FTA
FTA; share time, Brunei-23hrs, Singlh
FTA SCPC, Australia OK
may be test; svc has been erratic
PowVu, some FTA (ch # 1,3)
CA & FTA NTSC: Japan, Taiwan
Aust East beam - FTA + CA
FTA - TRT+, Zee CA, feeds
Aust, NZ 90 cm; CA (*); ABC Nat
cvrs Aust, NZ 90 cm; CA (*)
Aust only; * - smart card p. 26
cvrs Aust, NZ 90cm (Optus FTA test)
Aust only; * - smart card p. 26
Austar i-TV; CA, subs avail. Aust.
CA, subscription available Australia
CA, subscription available Australia
CA, subscription available Australia
CA, subscription available Australia
CA, subscription available Australia
CA, subscription available Australia
V832, A833
also 12.326, 12.335; ex PAS8 Ku
Full schedule less commercials
VPID1280, APID 1281
VPID 1024, APID 1025, PCR 1024
Weekend footy feeds reported-FTA
FTA 2 channels; more possible
testing digital feeds
NDS CA, subscription available NZ
NDS CA, subscription available NZ
NDS CA, subscription available NZ
also 12.686 12.706H; ABC Vic, Qld
Irdeto CA, tests
Feed, Adelaide; not permanent
TPG/EurodecMDS CA, occ. FTA
TPG/Eurodec MDSCA, radio FTA
TPG/Eurodec MDS CA; TRT FTA
TPG/Eurodec MDS CA
TPG/Eurdec MDS CA; radio FTA
Irdeto CA, some FTA tests
Dateline west; east PAS2, 3901
PowVu CA
PowVu CA & FTA; subscription avail
PowVu CA; ch 11 DCP-CCP bootload
PowVu/CA (some audio FTA)
PowVu CA & FTA (EWTN)
FTA at this time
erratic service, Radio FTA
PowVu FTA, replaces PAS-2 svc
was As2; PowVu CA
PowVu, CNN/CNNI now CA
1-7 CA; #8 MTV China occ FTA
PowVu CA, WIN, ABC NT
PowVu CA, WA only - D9234
CA feeds to pay-TV; 6 chs FTA
Pv, CA/FTA (FTA ch 3 only)
PowVu (FTA) occ feeds
PowVu (FTA) occ. feeds
PowVu (FTA) occ sport feeds
PowVu(FTA) occ. feeds
PowVu (FTA) occ. feeds
LBC/ART/Al jeezera now CA
PowVu (FTA) occ sport feeds
BBC FTA, others CA usually

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS-2/169)	Feeds	4040/1010H	1	3/4	10(.850)
	7thDayAdv.	3872/1278H	1	3/4	6(.620)
	Feeds	3868/1182H	1	2/3	6(.620)
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(.620)/7(.498)
	Cal PowVu	3901/1249H	up to 8	3/4	30(.800)
	HK bouquet	3850/1300H	up to 8	2/3	24(900)
	occ feeds	3776/1374H	1 typ	3/4	5(.560)
	Korean Bqt	3762/1388H	up to 3	3/4	11(.570))
<b>I702/176E</b>	AFRTS	4177/973LHC	8TV, 12+radio	3/4	26(.694)
	RFO Poly	4027/1123L	1TV	3/4	4(566)
<b>I701/180E</b>	TNTV	11.060&11.514	9	3/4	30(.000)
	Canal+Sat	11.610H	16TV, 1 radio	3/4	30(.000)
	TVNZ	4195/955RHC	1	3/4	5(.632)
	TVNZ/BBC	4186/964RHC	1	3/4	5(.632)
	TVNZ	4178/972RHC	1	3/4	5(.632)
	TVNZ/Aptn	4170/980RHC	1	3/4	5(.632)
	TVNZ/feeds	4161/989RHC	1	3/4	5(.632)
	RFO-Canal+	4086/1064L	4TV, radio	5/6	12(.500)
	TVNZ/feeds	4052/1098RHC	1	3/4	5(.632)
	TVNZ feeds	4044/1106R	1	3/4	5(.632)
	NZ Prime TV	4024/1126L	1	2/3	6(.876)
	NBC to 7 Oz	3960/1190R	1	7/8	6(447)
	WorldNet	3886/1264R	1TV, 37 radio	3/4	25(.000)
	Ioarana	3772/1378L	1	3/4	4(.566)
	TVNZ	3846/1304R	1	3/4	5(.632)
	10 Australia	3769/1381R	4	7/8	20(.000)
	USA feeds	3749/1401R	4?	?	26(400)

Receivers and Errata
PowVu occ FTA feeds
Sat, Sun 0030, 0900+UTC
FTA (occ sport); also try 3863,Sr6.100
FTA-typ NTSC-occ sport, live Shuttle
PowVu CA + FTA
was 4148Vt; some FTA
occ feeds, typ FTA; also Sr 5.600
Korean MUX, reload June 01
PowVu CA
SE spot beam
east spot; 10TV + r each, vertical pol.
3 FTA, Mediaguard; also 10.975
DMV/NIL early version, occ feds, typ ca
DMV/NIL early version, occ feds, typ ca
DMV/NIL early version, occ feds, typ ca
DMV/NIL early version, occ feds, typ ca
DMV/NIL early version, occ feds, typ ca
DMV/NIL early version, occ feds, typ ca
east hemi 20.5 dBW thru 2003+
DMV/NIL early version, occ feds, typ ca
SCPC, mixed CA and FTA feeds
PowVu CA; Auckland net feeds
CA, Leitch encoded
New Feb 2002; vert strong NZ, Pacific
FTA SCPC; East Hemi Beam-Tahiti
SCPC, mixed CA & FTA, feeds
PowVu CA & FTA; #3 TBN
16-QAM (not MPEG-2 compatible)

**MPEG-2 DVB Receivers:** (Data here believed accurate; we assume no responsibility for correctness!)

**AV-COMM R3100.** FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. Av-COMM Pty Ltd, 61-2-9939-4377.

**Benjamin DB6600-CI.** FTA, Foxtel/Austar w/CAM+card. Autosat Pty Ltd 61-2-9642-0266 (review SF#72)

**eMTech eM-100B (FTA), eM-200B (FTA + CIx2), eM210B (FTA + 2xCI + positioner);** KanSat 61-7-5484 6246 (review SF#89)

**Humax F1-CI.** Primarily sold for TRT(Australia), does (limited) PowerVu (not Optus Aurora approved).

**Humax ICRI 5400.** Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available, review SF#76.

**Hyundai-TV/COM.** HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good. SATECH (V2.26)

**Hyundai HSS700.** FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.

**Hyundai HSS800CI.** FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.

**MediaStar D7.** FTA, preloaded w/ known services, exc. software (review SF July 1998). MediaStar Comm. Int. 61-2-9618-5777

**MediaStar D7.5.** New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777

**MultiChoice (UEC) 660.** Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738

**Nokia "d-box" (V1.7X).** European, FTA, may only be German language, capable of Dr. Overflow software. Tricky to use.

**Nokia 9200.** When equipped with proper CAM, does Aurora, pay-TV services provided software has been "modified" with Dr Overflow or similar program was available from (www.BAKKERELECTRONICS.COM), now only from established users.

**Nokia 9500/9600.** Numerous versions for different world parts; not distributed in Pacific but assistance from Av-Comm Pty Ltd.

**Pace DGT400.** Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818)

**Pace DVR500.** Original DGT400 modified for NBC (PAS-2) affiliate use, with CAM equivalent to DGT400 but more reliable.

**Pace "Worldbox"** (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version.

**Panasat 520/630/635.** MCPC FTA, Irdeto capable, forerunner UEC 642, 660. Out of production, spares fax ++27-31-593-370.

**Panasonic TU-DS10.** FTA + Irdeto CA; one of 2 IRDs approved by Optus for Aurora, but never available in Australia.

**Phoenix 111, 222.** PowVu capable, NTSC, graphics, ease of use. (111 review SF#57). SATECH(below)- 222 out of production

**Phoenix 333.** FTA SCPC, MCPC, analogue + dish mover. Detailed SF review Nov. 1998. SATECH 61-3-9553-3399.

**Pioneer TS4.** Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)

**PowerVu (D9223, 9225, 9234).** Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, GWN+ PAS-2 Ku, CMT etc). Scientific Atlanta 61-2-9452-3388.

**Prosat 2102S.** FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.

**SatCruiser DSR-101.** FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-3749)

**SatCruiser DSR-201P.** FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above).

**STRONG Technologies SRT2620.** SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review March 2002 (# below).

**Strong SRT 4600.** SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Aust 61-3-8795-7990.

**Strong 4800.** SCPC, MCPC, embedded Irdeto+ CAM slots, Aurora, exc. vendor support. Strong Aust 61-3-8795-7990.

**Strong 4890.** SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSeqC 1.0, 1.2 (review SF#84); Strong Aust 61-3-9553-3393

**UEC642.** Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faultyP/S. Norsat 61-8-9451-8300.

**UEC660.** Upgraded UEC642, used by Sky Racing Aust., Foxtel-limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.

**UEC700/720.** Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers.

**Winersat DigiBox 200.** C + Ku basic receiver but includes Teletext for NZ TVOne, 2 VBI. Satlink NZ, fx 64-9-814-9447.

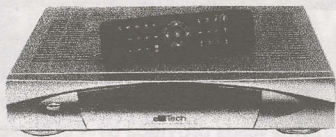
**Xanadu.** DVB compliant special-priced receiver for members of SPACE Pacific (Av-comm Pty Ltd, tel +61-2-9939-4377)

**Accessories:**

**Aurora smart cards.** New v1.6 now available, 1.2 no longer available for RABS. Price now A\$105, Sciteq 61-8-9306-3738.

**PowerVu Software Upgrade:** PAS-8, 4020/1130Hz, Sr 26.470, 7/8; pgm ch 11 and follow instructions (do not leave early!)

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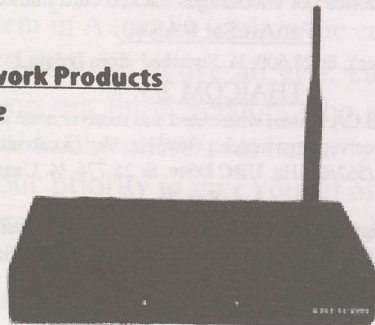
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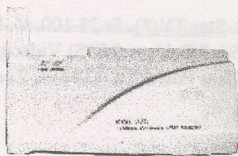
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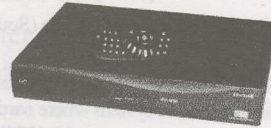


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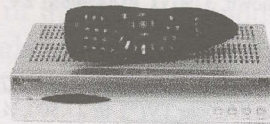


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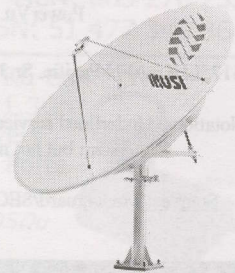


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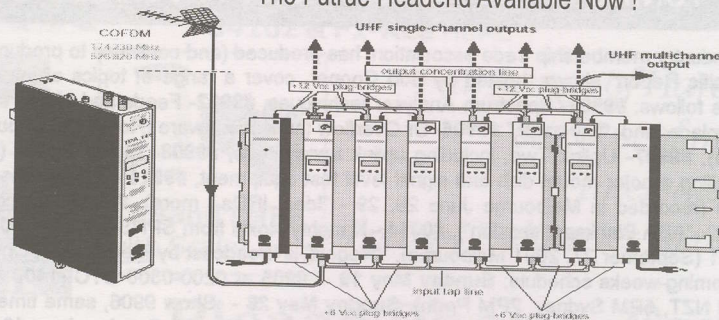
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## Status of Smart Card CA Systems in Pacific Region

As this issue reports (page 6), hacking and piracy have taken on an entirely new meaning with the filing of a lawsuit by Canal Plus parent Vivendi against NDS. Just how wide scale is the commercialisation of hacking (that is, the sale of smart cards by a "grey market" which operates outside of both the pay-TV programmer and apparently the law as well)? We set out to find out, by sending five Emails to people whom we thought might help us "survey" the current scene, and then spending 5 hours on Internet following leads provided by 4 of these 5 (one failed to answer). Our results follow with this notation. **DO NOT** contact us for more information; what you see here is **ALL** that we plan to reveal. If we could locate this much data in five hours on Internet, you should be able to do as well, if that is your intent. SatFACTS neither condones nor encourages hacked card marketing.

### PanAmSat PAS10:

3716/3744/3836/3863V. MultiChoice (South Africa); Sr 20.600, ¾. Switched from Irdeto 1 to Irdeto 2. 12.722V; SABC. Sr 26.651, ¼.

### THAICOM 2/3:

3480Hz. TARBS Sr 26.667 2/3. Uses Taiwan designed MDS CA system where card and receiver must match. 3640Hz. TARBS. Sr 26.667, 2/3. Uses Taiwan designed MDS CA system where card and receiver must match.; 3695Hz. Sky (Australia) Racing. Sr 5.000, ¾. Uses Irdeto 1. 12.438/479/521/562/604Hz. UBC DStv. Sr 25.776, ¾. Uses Irdeto 1.

### AsiaSat 2:

3640Hz. Egyptian-TARBS. Sr 27.850, ¾. Uses Taiwan designed MDS CA system where card and receiver must match. 3708Vt. Skylink. Sr 13.021, ¾. Uses Codicrypt: status unknown. 3796Vt. F(Fashion) TV. Sr 2.533, ¾. Uses Viaccess 2. 3845Vt. TVSN. Sr 4.300, ¾. Uses PowerVu. 3951Hz. 5-Star. Sr 8.890, ¾. Uses Irdeto 1.

### AsiaSat 3S:

3700Vt. Zee TV. Sr 27.500, ¾. Uses Mediaguard. 3760Hz. Tech TV. Sr 26.000, 7/8. Uses PowerVu. 3780Vt/3980Vt. Star TV(\*). Sr 28.100, ¾. Uses (NDS) Videoguard. 3860Vt. Star TV(\*). Sr 27.500, ¾. Uses (NDS) Videoguard. 3880Hz/3940Vt. Star TV(\*). Sr 26.850, 7/8. Uses (NDS) Videoguard. 4000Hz. Star TV(\*). Sr 26.850, 7/8. Uses (NDS) Videoguard. 3960Hz. CNNI. Sr 26.000 (changing late April), ¾. Uses PowerVu. 4140Vt. Zee TV. Sr 22.000, ¾. Uses Mediaguard.

### JcSAT 3:

3960Vt. C-Sky Net (\*). Sr 30.000, 7/8. Uses Viaccess 1. 3996Vt. GWNS. Sr 22.000, 5/5. Uses PowerVu.

### Optus B3:

Austar/Foxtel/Aurora (10 frequencies - see p. 23). Use Irdeto 1.

### Optus B1:

12.483Vt. Saturn (\*). Sr 22.500, ¾. Uses Irdeto 1.

12.519/546/581/608/644/671: Sky NZ (\*). Sr 22.500, ¾. Uses Videoguard.

### PanAmSat PAS8:

3780Hz. CNNI. Sr 25.000, ¾. Uses PowerVu. 3808Vt. EMTV. Sr 5.632, ¾. Uses PowerVu. 3880Vt. ABS-CBN. Sr 28.094, ¾. Uses PowerVu. 3940Hz. California Bouquet. Sr 27.690, 7/8. Uses PowerVu. 3980Hz. Discovery. Sr 27.690, ¾. Uses PowerVu. 4020Hz. ESPN. Sr 26.466, 7/8. Uses PowerVu. 4060Hz. NHK Premium. Sr 26.470, ¾. Uses PowerVu. 4140Hz. Disney. Sr 28.125, 5/6. Uses PowerVu. 12.326/526/606/646/726. TARBS. Sr 28.067, ¾. Uses MDS.

### PanAmSat PAS2:

3836Vt. Middle East Mux. Sr 13.330, ¾. Uses Irdeto 1 (on 2 service channels). 3901 Hz. California Bouquet. Sr 30.800, ¾. Uses PowerVu. 3992 Vt. Fox Mux. Sr 26.470, 7/8. Uses PowerVu. 4026 Vt. ERA Bouquet. Sr 22.000, ¾. Uses Viaccess 1 (on 2 service channels). 4058 Vt. TVB. Sr 13.238, ¾. Uses PowerVu. 12.281Vt. Telstra lease. Sr 27.500, ¾. Uses PowerVu. 12.637Vt. Telstra lease. Sr 18.600, ½. Uses PowerVu.

### Intelsat 701:

4175LHC. AFN Pacific. Sr 3.680, 2/3. Radio only. Uses PowerVu. 10.975/11.610Hz. Canal + Caledonie. Sr 30.000, ¾. Uses Mediaguard. 11.060/11514Vt. TNS Tahiti. Sr 30.000, ¾. Uses Viaccess 1.

Notations: Underlined services have been hacked but commercial exploitation of the hacking has not yet occurred. (\*) indicates hacking has been done to same CA system but not necessarily for this programmer. **Bold face** indicates modest to large scale marketing activity for hacked cards is reported.

Sources: Mediaguard/SECA is from Canal Plus. Viaccess created by AB Satellite. Nagravision by Swiss Kudelski SA Switzerland. Irdeto by Irdeto BV, subsidiary of MIH Holland. Videoguard by NDS. PowerVu by Scientific Atlanta.

## TUNING IN THE INDUSTRY'S TV PROGRAMME

SPACE Pacific, the Asia-Pacific industry membership trade association, has produced (and continues to produce) a series of one hour television programmes. These "SPACE Pacific Report" shows, hosted by Bob Cooper, cover a range of topics of interest to installers and enthusiasts. Show numbers and content are as follows: #9901- Spectrum Analyser techniques, #9902- Feeds and LNBS, #9903- Dish antenna designs and problems, #9904- The dish marketplace, and, "tiny parts," #9905- Dr Overflow (Nokia) software (Robin Colquhoun), #9906- How the uplink works (tour of RCA's Vernon Valley site), #9907- Uplink Two, including uplink transmitters, #9908- Digital Basics (Mark Long), #9909- Real World Installs (Mark Long), #9910 - Installing a polar mount dish and signal level test equipment, #9911 - "SPIN" (the hidden side of satellite). #0012 - First Report from SPRSCS 2000 (recorded in Melbourne June 28, 29 - "Ideal IRDs," more), #0013 - Second Report from SPRSCS 2000 (recorded in Melbourne June 29, 30 - "ABA Blackspot session"), #0014 - Naughty Nokia from SPRSCS 2000; #0101 - Preview of new technology including SDS from SPRSCS 2001 (Septemer 27, 2001 Melbourne). "Report" is broadcast by Mediasat on Optus B3, 12.336Vt, ad-hoc channel 4(\*) (Sr 30.000, FEC 2/3). The coming-weeks schedule: **Sunday May 19** - 9905 at 0200-0300 UTC (1400 NZT, 1200 AEST, 0900 Western Australia; repeats 0700 UTC/7PM NZT, 5PM Sydney, 2PM Perth). **Sunday May 26** - Show 9906, same times as May 19; **Sunday June 02** - Show 9903, same time as May 19; **Sunday June 09** - Show 9908, same times as May 19; **Sunday June 16** - Show 9900 same times as May 129; **Sunday June 23** - Show 9910, same times as May 19; **Sunday June 30** - Show 9911, same time as May 19 (\* - MediaSat may pre-empt showings, check other bouquet channels - such as 3 - if not on 4. MediaSat is currently reloading their transponder and you may have to reload your receiver as well.) In the event of schedule changes (\*), SPACE Pacific attempts to pre-announce which show(s) will appear through <http://www.apsatv.com> Sponsorship of SPACE Pacific Report. In general answer to queries - Av-Comm, Satech and Sciteq have contributed corporate funding to make possible the production of the first set of nine SPACE Pacific Report programmes. IKUSI ANZ contributed funds for completion of 9910. If interested in sponsoring future shows, contact Bob Cooper at [skyking@clear.net.nz](mailto:skyking@clear.net.nz) (64-9-406-0651) \* - Note: Mediasat Sunday feed loads have increased and the first showing (0200UTC) may be "bumped" to accommodate other clients. The 0700UTC feed typically is not bumped and would be the better choice if taping for later review.

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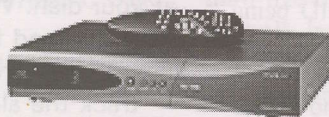
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# WITH THE OBSERVERS

**AsiaSat 2/100.5E:** UAE Radio & Television has signed "long term" lease for full 36 MHz transponder (4020Vt, Sr 27.500, 3/4). Present service is EDTV, Dubai Business Channel and Dubai Sports Channel - all FTA, + 2 radio services. Plans are to expand the package and to stay FTA! The sport service, incidentally, is "not bad" and heavy on soccer as well as USA coverage not typically available on other (pay) packages.

**AsiaSat 3S/105.5E:** New symbol rate for CNN (3960H) is 27.500, FEC remains 3/4. "New FTA called Xing Kong is now within Star Asia 4000Hz (Sr 26.850, 7/8), PAL format, plays on UEC 642 without problems. A surprise here - movies with English subtitles!" (IF, Queensland) "747 Channel [V] China now FTA here as ch 1, plus (also FTA) ch 6 is '726 Phoenix Infonews', ch 8 '743 Phoenix Chinese' which is also parallel to analogue service. Current ZTV line-up is as follows: 3700Vt, Sr 27.500, 3/4: (1) (Zee) English, (2) International, (3) Movies, (4) Test 2, (5) Bharathi (FTA PAL), (6) Kaveri (FTA PAL), (7) Cinema, (8) Zee TV, (9) Nickelodeon, (10) Zee Music. And 4140Vt, Sr 22.000, 3/4: (11) ZED, (12) Z News, (13) Punjabi, (14) Gujarati, (15) Bangla, (16) Marathi, (17) Test 3, (18) Test 4." (D. Leach NSW, AI, Australia) "Sahara TV analogue now on 4185Vt, PAL, audio 6.8" (Gerald Smith, PNG).

**JcSat 2-A-8: 154E:** "A major disappointment. This satellite may possess the EIRP to be useful on smaller dishes in Australia but the testing observed to date fails to verify that. Tests on 3960Vt, Sr 21.700, 1/2 were/are either not video to begin with or below threshold. PIDs have been all over the park, 505/512 et al through 8119/8166 with blocky video briefly seen using VPID 512." (Bill Richards, Aust).

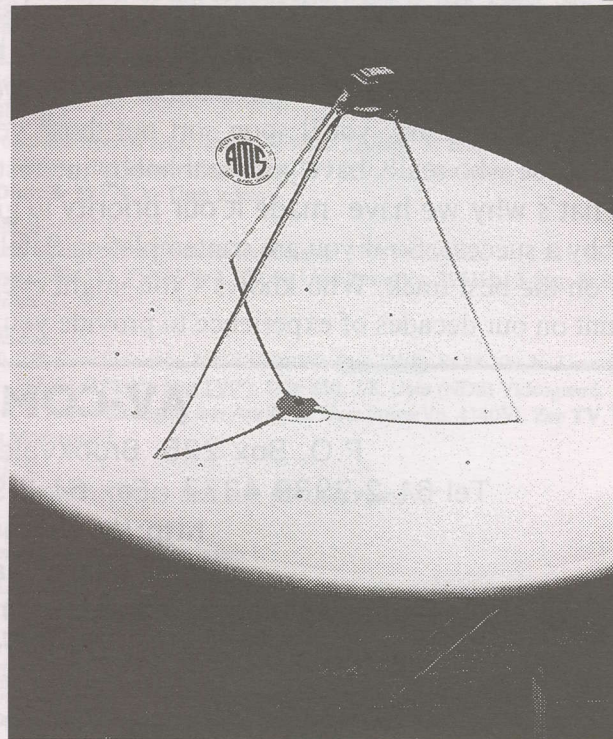
**LM1/ 75.0E:** "3961Hz, Sr 27.497, 2/3 but no PID being transmitted - possible new service." (Bill Richards, Aust)

**Optus B1/156E:** "Big Brother feed from Ten Net, 12.430Vt, Sr 6.980, 3/4." (D. Mitchell, NSW) "Labelling now says 'Telstraclear mux' on 12.707Vt, Sr 22.500, 3/4; TVNZ TV ONE (S45) was V518, A656, Text 576, PCR 154, SID 45; TVNZ TV2 (S98) was V519, A567, Text 577, PCR 155, SID 98." (C. Sutton, NZ).

**Optus B3/160E:** "NSL (National Soccer league) games previously on C7 can be found being fed by Mediasat's 'occasional channel' [12.336Vt, Sr 30.000, 2/3]. Check Saturday nights, for example, around 9PM Australia Eastern. Logo in upper right corner says 'C7 Sport Live' indicating Optus cable must still be carrying this service. Later same

## AT PRESS DEADLINE

Aurora's carriage of trio + of Indian language channels (12.532Vt) is now history - they are on Mediasat's 12.336Vt transponder but their FTA status is unlikely to continue. DVB-T? Retravision in flier distributed as we go to press has set-top terrestrial devices for \$A299. Euro Bouquet AS2 Tr shut down May 7, 1930UTC unexplained. And C7 sport is now officially "gone."



Solar rub-out. We have just come through the March "solar alignment" period (prior to March 22 for those north of equator; post March 22 for those south). When the position of the sun aligns directly behind "your" satellite belt (for several days) there is a period each day (a few to 15 minutes) when solar noise drowns out the C (and Ku) band signals at your dish. With a prime focus dish, the shadow of the feed falls squarely in the centre (photo above) when the alignment is taking place. You can track the alignment by merely observing the position of the shadow reference the dish centre each day. Next occurrence - prior to September 22 for receivers south of the equator, post 22nd for those to north.

evening, noticed delayed telecast of same match on GWN but without the C7 corner bug" (AI, NSW). "Zee TV Australia, Zee Cinema Australia, SET Australia began testing April 23 on 12.336Vt (FTA at time of testing) with PIDs of 1260/1220, 1360/1320 and 1660/1620." (G. Salisbury, Aust.)

**WITH THE OBSERVERS:** Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. Photos of yourself, your equipment or off-air photos taken from your TV screen are welcomed. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady. Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for June 15th issue: June 3 by mail or 5PM NZ June 5th if by fax to

64-9-406-1083 or Email skyking@clear.net.nz.



**Palapa C2M/113E:** "3760Hz, Sr 26.087, 3/4 Globalvision. Initial announcement slide read, 'Wait for a great surprise ...Globalvision is the ultimate home entertainment that is all you will ever need for you and your family.' Unfortunately, the track record for anything on C2M (or Telekom 1) has been miserable and it is difficult to work up much enthusiasm for yet another effort." (NS, Victoria) "You keep dropping Indosiar 4074Vt, Sr 6.500, 3/4 which has a solid lock on 3.5m in New Caledonia." (S. Holzt) "RCTI, formerly 3755Vt, is now on 3473Hz. 4080Hz Mux, Sr 28.125, 3/4 continues to shuffle programmers daily/weekly." (Boris L, NT, Aust) "4080Hz, Sr 28.125, 3/4 may have up to 5 programme channels, (1) 'Global TV' which has been carrying MTV Asia but with unusual Global TV logo top left corner, (2) 'Metro TV', (3) 'TVRI', (4) 'Metro TV Test' carrying ANteve, (5) 'SCTV Tesmp' (sic) carrying SCTV. Of course like almost everything on this satellite, musical chairs have them changing programmers very often and this list will doubtless be out of date before the ink dries! Oh yes, the video quality for each of these is very poor, for example TVRI looks like it is coming off satellite in analogue using a receiver which has the IF bandwidth adjusted too narrow." (IF, Qld).

**PanAmSat PAS2/169E:** "Seen April 14th for one day, 3939Hz, Sr 6.620, 3/4 this strange collection of channel labels: (1) BBC TV1, (2) BBC CH 2, (3) Ch3, (4) CH4, (5) DWTV, (6) RTP, (7) German TV, (8) BBC Future English, (9) BBC Future Port/Cue. Obviously at most one of these in *real* time video would fit into a Sr of 6.620 so purpose of transmission unknown." (D. Mitchell, NSW). "SID and PID for ABC Asia Pacific and Radio Australia (3901 California bouquet) are (SID) 1, PIDs 1160/1120 and 1122." (Anthony, NSW). "Occasional feeds on 4054Hz, Sr 6.620, 2/3." (B. Richards, Aust) "4063Hz, Sr 6.620, 2/3 V2160, A2120, SID201, NAPSA2 Adventist Church feed CA 0150UTC; 4054Hz, Sr 6.620, 2/3 V2160, A2120, SID201, NAPSA3 encrypted feed; 4036Hz, Sr 6.620, 2/3, V3160, A3120, SID302, NAPSA4 encrypted feed." (B. Richards, Aust) "Al-Jazeera Satellite Channel, 3836Vt, is now Irdeto 2 encrypted (new PIDs 2314/2315). Cards distributed for paid access are actually out of DSTV (Multi-Choice) South Africa, have 'PAS-2 C Band' marked on them." (Chuck S. NZ)

**PanAmSat PAS8/166.5E:** "Correction to 'At Deadline'. ABC feed, apparently out of Adelaide and a test for a limited period, is 12.301Hz, Sr 5.858, 5/6." (D. Mitchell, NSW) "Channel J is gone - an apparent victim of nobody watching (NHK, 4060Hz) - replaced with test card." (G. Salisbury, Aust).

**ST1 /88.0E:** "Here's a surprise - 3632Vt, Sr 26.667, 3/4 at very decent level; BBC World FTA as I report this, V3121, A3105, PCR312 + others here CA." (David Nolan, Aust)

**ThaiCom 2/3: 78.5E:** "3600Hz, Sr 26.662 and 3/4; V525, A761, SID11, PMT266 labelled 'Sky Channel'." (B. Richards, Aust) "Travel Thailand Television, 3574Hz, Sr 6.311, V512, A640, 3672Hz, Sr 11.500, 3/4 MRTV Occ, MRTV3 and MRTV1." (B. Richards, Aust)

**Soapbox:** "ABC Australia Engineering now using our Winersat DVB-S teletext capable set-top to monitor their own transmission" (P. Escher, Satlink NZ). "Telstra seems to be like a boat drifting at sea without a rudder - they are being slammed by Australian news reports for their announced interest in acquiring one of the existing commercial TV networks and their public stock has taken a nose dive as public confidence erodes" (IF, Queensland). "Putting our (Ritech

Communications) business up for sale. We do cable TV, satellite, video systems and will entertain offers and explain what is available to interested parties" (Tony Jund, Holder A.C.T. 02 6288 3248). "Imparja may, as you have suggested, not be 'fond' of SF but they apparently do read it! After mention of lousy quality of AM radio station relayed on Aurora Radio channel 42, it is now repaired - apparently somebody discovered how to make an AM loop or long wire work!" (NS, Vic). "Firm calling itself 'National Technology Installations' seeking experienced installer help should be investigated carefully before anyone signs on. Remember what happened with Comet!" (Gabriel, Vic). "California Amplifier has purchased the assets of antenna manufacturer KTI - Kaul-Tronics; new contact is Jim Atkinson in USA at 608 647 8902" (Sciteq Pty Ltd). "Letter from Minister of Broadcasting Mirian Hobbs in response to my concerns that TV3/4/Prime are still being held for ransom by Sky, states '*It would be preferable* if these signals were not encrypted when they are broadcast by Sky. However, the decision whether or not to encrypt those signals is a commercial matter for CanWest (the operator of TV3/TV4), Prime and Sky to agree upon. As Minister of Broadcasting I do not have the power to direct that such signals should not be encrypted. For your information, the reason that TV One and TV2 are not encrypted is because of the commercial agreement that Television New Zealand Ltd. (TVNZ) has negotiated with Sky and because TVNZ holds the lease over the satellite capacity that is used additionally by TVONE and TV2. I would not be at all surprised if, in time, CanWest and Prime also negotiate a similar arrangement with Sky." (Peter Escher, Auckland) "Anti-surge spiral wound fuses are available at RS Components, outlets in Adelaide, Brisbane, Melbourne and Perth. Stock #415-569 is 1 AMP, order line is 1300 656 636 or fax 1300-656-696. If you are having repeat problems with SMPS fuses or components failing because of mains surges, suggest following: (1) Anti-surge fuse, (2) Metal Oxide Varistor (such as V250LA40A by Harris Semiconductors; RS stock #238-946), (3) bi-directional TransZorb such as General Instruments 1.5KE400CA and RS #192-890. The fuse is the third line of protection whereas the Varistor will handle (and control) large mains surges without being destroyed. The TransZorb is the best protection money can buy against very fast rise time - such as lightning induced - surges. When you are quoted pricing for any or all of the above, sit down - not cheap. But - the upside is whatever it costs, it will be less than having to rebuild or replace a complete power supply - multiple times!" (IF, Queensland) "Austar has added a FTA 'Service Menu' channel to their 12.314Hz transponder; a 5 minute looped demonstration on using their Tmail service, labelled 'IATV1'. Fox Sport and Fox Sport 2 now appear within the 'Optus Bouquet' labelled as Spt1 (ch 29; ex-DTH bouquet as ch 52) and Spt2 (ch 31, ex DTH as ch 51). History Channel ('HIST' on EPG) on Austar ch 12 is identical to Foxtel of same name. Country Music Channel is now relisted as Austar Ch 29, labelled CMC on EPG. Music County (MC on EPG) has been moved to channel 54." (Jonathan B, Vic). "Changes in Mediasat Optus B3 Vt (12.336). Apparently the high cost of distributing Indian language television through Aurora (lest we forget Bill Khan's defunct service!) has motivated the Indian service providers to move here. Latest (but probably will change) channel list is (1) SET Asia, (2) Zee Cinema, (3) Set test card, (4) MSAT occasional (Mediasat Syd test card - this is where SPACE Pacific Report appears on

Sundays), (5) TRT International, (6) Tzu Chi TV. Radio channels are (1) TRT FM (Turkey), (2) VOT (Turkey), (3) ABS Radio, (4) Tamil Radio, (5) SNG IFB (satellite news gathering - internal feedback to loop back to announcers in field)." (Peter Kellogg, NSW). "Those who are having difficulties with mobile towers might consider selecting an LNB(f) with a different LO. For example, using a 10 GHz LO places French 1701's 10.975 at 975 MHz L-band and 11.610 at 1610 L-band. Most people seem to be having problems with the L-band region between 950 and 1000 and the 'trick' is to select a LO frequency that gets you away from 950-1000 to avoid mobile tel/cell phone transmitter overload of the receiver. A cell phone tower within a km or two will get through the shielding on even quad shielded product travelling to the IRD along with any LNB(f) produced signals that also happen to be in that frequency region. It does not take much cell phone signal falling even at 950 - 960 MHz to completely disarm a IRD trying to process French TV service at 975 MHz L-band. Moreover, it is now apparent the 1701 10.975Hz

transmission is from 1 to 3 dB lower in level than the 11.610 transponder which means either Intelsat has a less than functional transponder on their hands or the French were duped into going there before proving this transponder had comparable coverage and EIRP to the 11.610 original one. The good news - if there is any - here is typically only 2-4 services are on 10.975Hz and hopefully it will stay that way until either Intelsat gets more power out on that frequency or they select an alternate transponder as a replacement." (IF, Queensland) "PAS-2 satellite feed of ABC Asia Pacific now appears likely to stay here; Tarawa, for example, President has embraced service with open arms, cabling to foreign ministry as well; happy chappies." (Colin Hill) "John RuBay as District Manager for Palmerston North RFS has notified any dealer holding stock of non-NZ-government safety approved IRDs to return them to the importer and request a refund. Dealers who have receivers not CE-certified or approved for sale in NZ should be able to get full refunds because of the importer/distributor's failure to follow the regulations (obtaining approval) before offering them for sale (to dealers)." (Paul Burton, Waipu Cable TV) "AsiaSat 4 now scheduled to be completing vacuum and temperature extreme testing as you read this; exact launch date uncertain although had originally been scheduled for late May. Satellite will go to 122E, with 28 C-band and 20 Ku (4 of which will be BSS for DTH into Hong Kong). C-band footprint(s) are essentially identical to As3 with added advantage of being higher in sky for Australia (and Pacific), suggesting 1.8m dishes will work over very large area. Clients for As4 have not been announced, possible some As2 and 3 traffic may be shifted to new satellite." (W Pang, HK). "Ruggedised DTV (DVB-T) testing now essentially complete, results suggest by using new transmission parameters, many of the (downtown) Sydney sectors with shadowed reception can be served without resorting to new repeaters at Kings Cross and North Head. Additionally, have recently completed largest multifaceted MATV/satellite system yet attempted. Am using COFDM to PAL transmodulators to generate really clean PAL analogue from COFDM signals. With this system, found Ikusi MCP600 is unbelievably clean. When you fire up on selected channel and inspect on a spectrum analyser, the only "grass" you see is on the selected output channel. There is simply nothing coming out of the modulator on any other channel anywhere in the spectrum - talk about piece of mind! The installation has a bank of 18 MCP600s augmented with 5 COFDM to PAL transcoders - 23 total, all frequency agile. This delivers 5 off-air digital terrestrial channels, 8 Foxtel channels, 2 off-satellite services through SA D9223s, a studio channel, a WebCam channel as well as the entire FM band and 4 AM radio stations running as unmodulated (video) signals on TV channels 66-69 - each with a 'video ID' to tell the listener what radio station they are listening to. It all fits into a fully ventilated computer rack cabinet fed with mains voltage through a large UPS and centralised computer room air conditioning. The cleanliness of the (Ikusi) VSB modulators is the most impressive part of the system - what a joy to use state-of-the-art equipment!" (Eric Fien, NSW). "PowerCom decoders on hand for now gone MMBN, when equipped with FTV supplied card, works fine on Fashion Television: decoders for MTV on PAS-8 - we have been told to source Philips DVS-8000 models - of which there are 12 separate model versions including variants of the audio output connections." (G. Welsby, PNG)

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# AT

## Sign-off

### What will they do when the last card is hacked?

E-mail received as we go to press.

"The latest release of MultiDec decoder with (its' own) software CI can decrypt Irdeto 2 and SECA 2 on a Pentium PC with a Hauppauge DVB-S Multimedia card. That's right - no CI is required! How? Because the CI/CAM is emulated by software in the PC. The magic continues."

History repeats. The first - very first - smart card technology applied to pay-TV transmission was created by News Corp through their (now) NDS Israeli subsidiary. Rupert Murdoch needed some way to "secure" the Hollywood movies he was transmitting in the early analogue 4-channel Sky days. The system was "hacked" and an estimated 500,000 (pirate) cards, mostly sourced in Ireland, flowed over England and the continent.

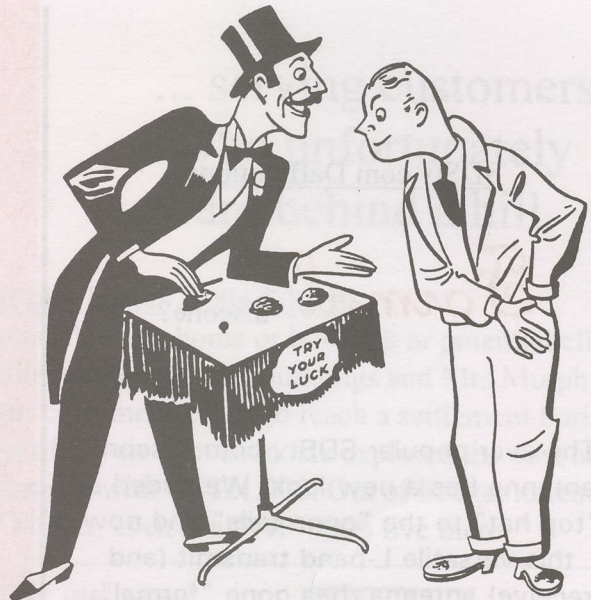
A half dozen smart card competitors to NDS appeared, sold their techniques to would-be secure telecasters and by year 2000 tens of supposedly secure pay-to-watch services were initiated throughout the world. There was one fatal flaw in the business plan. "Secure" was misrepresented.

At first they worked - some for a month, some for a year, but eventually the flawed plan was revealed as service after service was "hacked" by people who it would turn out had more skills than the folks being paid big bucks to develop the "security."

The real losers here are the investors who are misled by financial analysts who tell them, "Invest in ABC satellite company because it is a good deal." The concept that people will *pay* for television, if the television programming is unique and attractive enough, was the *false* foundation upon which pay-TV was built. There are only two categories of television "worth paying for" - sport and recent movies. In the case of sport, Rupert Murdoch's News Corp during April admitted it was paying "far too much" for sporting rights and it promptly announced it would be "giving back" its ownership rights in Australian rugby teams (Canberra, others). And they would "write off" their investments therein. When News Corp "writes off" sums like a billion US dollars, casually, the people who really lose are those who have invested in News Corp stock. Sports rights are like buying bricks for a building - and then admitting after you have done so you paid, "a billion dollars to much," and advising your investors, "we are reducing our actual value by a billion dollars."

Just like that - a simple announcement, a stroke of the pen and Arthur Andersen accountants sign off on the decision.

There is a scam here - "a trick, swindle or fraud." And it is perpetrated on innocent people who are suckered into investing in "ABC Satellite" by stock investment advisors who have everything to gain (commissions for their pocket) and nothing to lose (they are not spending their own money) by recommending a particular investment. In fact, one of the great swindles involves stock brokers and analysts who are given "incentives" (perks - "perquisite: an extra profit or



allowance additional to regular income") by firms such as ABC Satellite when they hype ("extravagant or excessive publicity promotion") a particular stock.

It is a shell game. When a particularly damning report comes along (such as NDS's loss of the DirecTV security account), which should be a large red flag to investors, NDS rushes out a press statement claiming, "increased profits for the most recent quarter year," as if losing the DirecTV account is *not* important. And the (investing) public forgets DirecTV.

People who hack cards have as many incentives to "cheat" as those who operate the hacked system. There is personal glory and satisfaction (the one which no amount of NDS "security" can control), and there is intense hatred of a commercial system which spawns ("produces or generates in large numbers") the kind of business ethics we witness in Enron's hiding of corporate debt in offshore, untraceable bank accounts and subsidiary corporations, or NDS's funding of THOIC.com where complete hacking instructions of News Corp competitor iTV Digital were posted.

Through all of this runs the now obvious thread that plastic based smart cards encrypted with algorithms are in fact not only fallible but attractive to hackers. And therefore any business plan which *begins* with the presumption that selling a product secured by such cards is a "good investment" is - in fact - a bad investment.

Rupert Murdoch and his minions ("a servile agent; a slave") have known smart cards to be an "illusion" from their 1988 introduction. But because they were considered the experts and because they had initial success with their use, a fantasy has grown up around these devices making them something they are not nor ever have been. *Secure*.

"If you say it fast, it sounds plausible" applies to smart card technology. And the stock market folks who stand to make commissions when selling News Corp and other "ABC Satellite" stocks say it fast and often to investors who have no technical background, and who can barely turn on their TV set and change channels without assistance.

You, on the other hand, have a technical background. You also may be enticed to "try" newly developed gadgets such as the "Magic Module" just to see what this is all about. Be warned. Caveat emptor (buyer beware). Cards are grey market, in Europe they are controlled by Mafia types, and hacker Tron did not die because he was depressed and distraut. This is a very dirty business, at both ends.

SDStv.com Daffynitions

## *Formal* discone?

The ever popular SDStv.com Discone antenna has a new look. We added a "top hat" to the "cone tails" and now this versatile L-band transmit (and receive) antenna has gone "formal".

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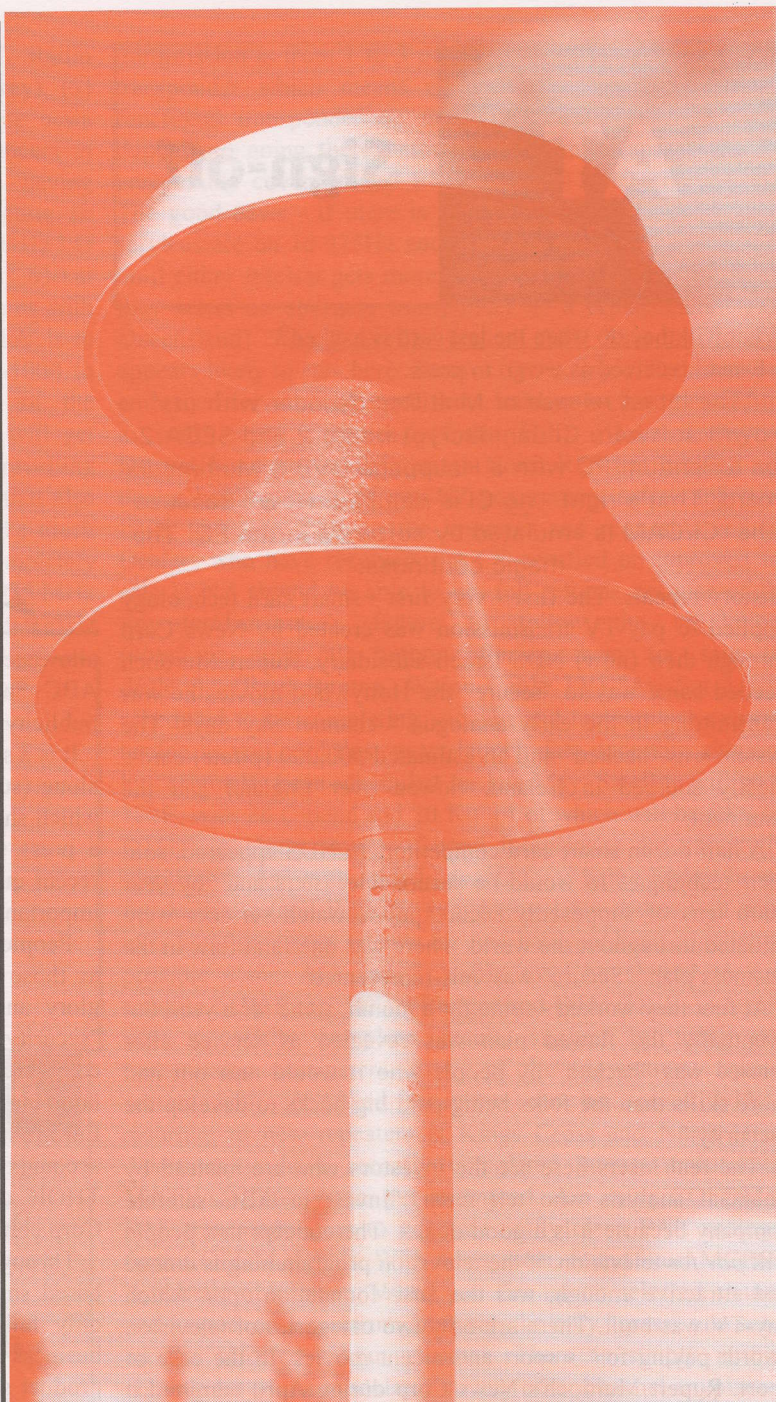
**Lower radiation angle:** more than 90% of the transmitted power (or receive sensitivity) is concentrated within 3 degrees of the horizon

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HOW do you distribute an adult channel in an African country that has no such service? Erect a sizeable dish, capture the service with a matching receiver and then plug the resulting decrypted audio and video into an mW20 transmitter. Now add a SDStv.com 10 watt amplifier, a "Top Hat Discone" and pump those watts into the atmosphere. Result? The installer is a doing a brisk business in SDStv.com receiver system sales, expects to hit 1,000 installs by July. Sometimes the "colour of money" is silky-white.

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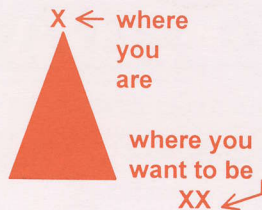
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# How to CLIMB over the HILL



... serving customers who unfortunately are behind a hill.

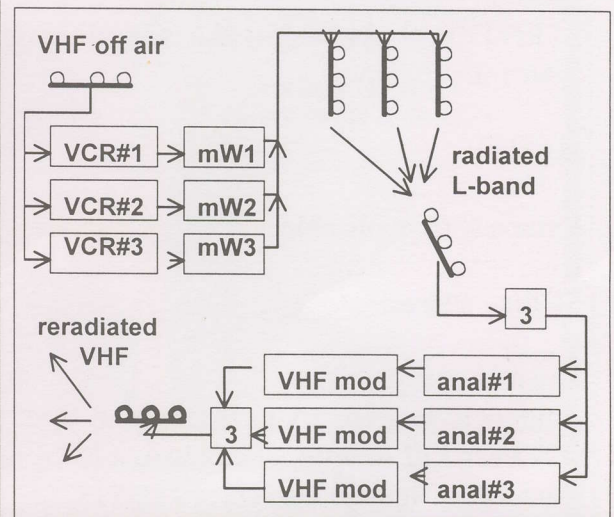


### SDStv.com case history C004/F001B:

"Not every broadcaster is able to reach every home or business or potential client with line of sight. Sometimes hills, mountains, tall buildings and Mrs Murphy's washing line gets in the way. Our customer needed to reach a settlement buried behind a hill with three channels of off-air television. He explored the cost of a standard 3-channel relay and came up with US\$21,000. Out of budget to reach fewer than 100 potential homes, even if a "VIP" does live there. "

**SDStv.com was the cost effective answer.** For under US\$1,900 he installed an off-air antenna for his 3 channels on the hilltop, demodulated the channels in standard VCRs (to video and audio) and then fed these baseband signals into a trio of mW20 SDStv.com L-band transmitters, each feeding its own SDStv.com passive transmit antenna.

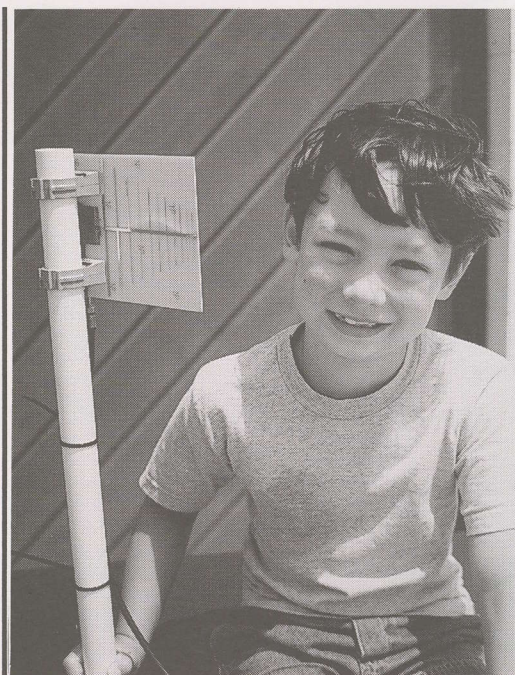
One km distant, in the settlement, a single SDStv.com active logi, a 3-way splitter, and 3 \$50-cost standard L-band analogue receivers each feeding a DSB VHF channel modulator. The three channels were then reradiated on VHF to each home where rabbit ear or simplistic window frame antennas fed the TV set. For **less than \$20 per home** cost! Plus, another settlement 2 km further away is now installing their own pickup system using the same hill relay site.



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SDStv.com designs are forcing people to rethink why they spend **huge** amounts of money to create 0 to 30 km television/radio/data links using microwave technology. Our 27 MHz bandwidth FM analogue design mW20 transmitter/modulator is user frequency selectable (push-button agile) on 24 channels between 950 and 1450 MHz. Our 10 watt solid state amplifier is the least expensive "circuit booster" available in the world! Video (plus inbuilt subcarrier audio) links are a primary use but any data signals you can stuff into 27 MHz comes out the other end without resorting to high cost technology.



### Foreground:

Our prices are sooo-low that you might think SDStv.com equipment is not of professional quality. That would be **wrong**. We just happen to be extremely clever daring to move into the latest microwave chip devices while the high priced guys are still charging "traditional" multi-thousand dollar amounts for equipment they build for a few hundred dollars. SDStv.com designers have pioneered microwave transmission and reception technology since 1979. And by using 27 MHz wideband FM, users benefit because any and every L-band analogue satellite TV receiver makes a dandy receiver for a fraction of normal receiver costs.

**THIS important notation: SDStv.com operates on user-selected frequencies between 950 and 1450 MHz (L-band). Or on special order - up to 2150 MHz. Not every country will allow SDStv.com licensing (if licensing is indeed required) so check first before ordering.**

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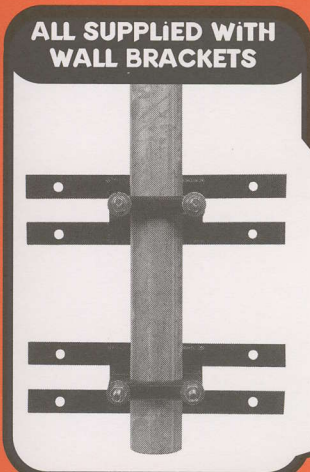
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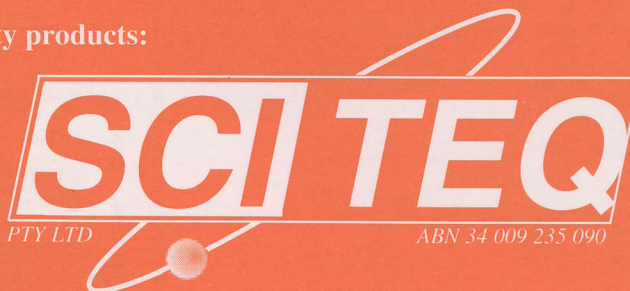
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