Bob Cooper's

JULY 15 2004

SatFACTS

MONTHLY

Reporting on "The World" of satellite television in the Pacific and Asia

IN THIS ISSUE

0.3 dB Low Noise LNBf? We test.

Blind/code-key + 2CI Fortec does it all

No card, no CAM, no code-key!

✓ Latest Programmer News
✓ Latest Hardware News
✓ Fiji delayed; TARBS shuts down
✓ Observer Reports

Vol. 9 ◆ No. 119
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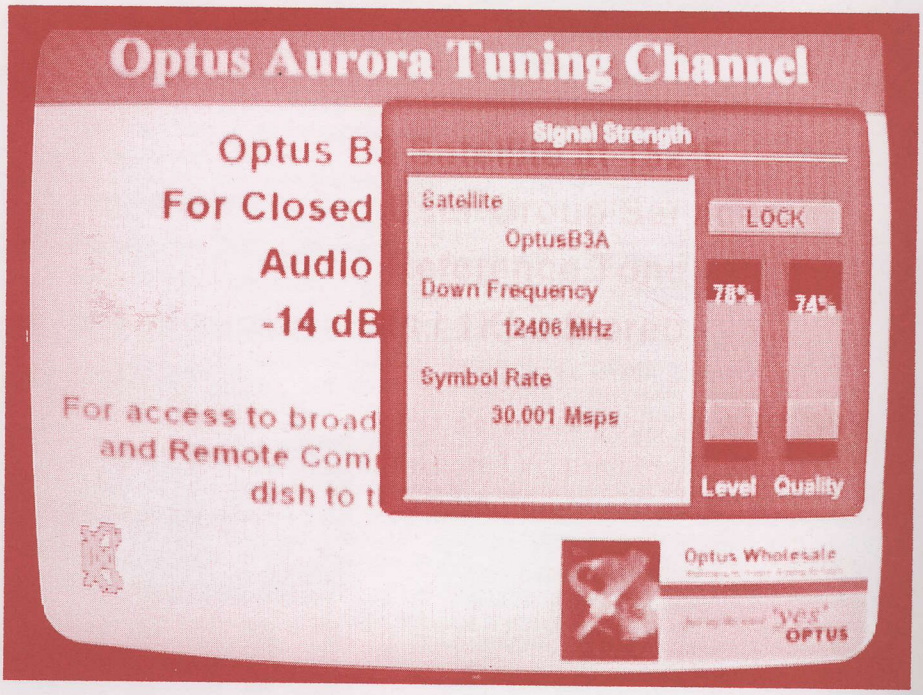
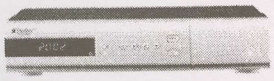


Phoenix Technologies

Satellite Equipment & Accessories One Stop Supermarket

Phoenix JT3100T Digital Terrestrial Receiver

- Digital Audio Output (S/PDIF)
- Dolby Digital
- Wide Screen (16:9) Hot-Key
- S-VHS, CVBS & RGB Video Outputs



- Super-Fast Channel Scan
- Electronic Program Guide
- Channel Rename Function
- Software Upgradeable

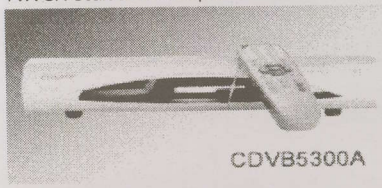
$180/each (for 6 unit)
$160/each (for 30 units)

Magix 8800 Receiver $220
(Made in Korea)

Coship digital receiver $220
(Iredto V2.09 CAM embedded)

SPACE 5300A CI Receiver
(Two Common Interface Slots)

Auto PID correction
C & Ku band input
PAL/NTSC auto converter
5000 channels
Picture in picture EPG
DiSEqC1.0/1.2 control
TV/VCR Scart & RCA output
$180



SPACE 2300 digital receiver
Auto PID correction
C & Ku band input
PAL/NTSC auto converter
5000 channels
Picture in picture EPG
DiSEqC1.0/1.2 control
TV/VCR Scart & RCA output
$140

NextWave 3220 FTA digital receiver
(Made in Korea)

C & Ku band input, PAL/NTSC auto converter
5000 channels Picture in picture EPG
DiSEqC1.0/1.2 control
TV/VCR Scart & RCA outputs
$160

NextWave 3220C digital receiver
(Two common interface slots) **(Made in Korea)**

C & Ku band input
High symbol rate >45,000
PAL/NTSC auto converter
5000 channels Picture in picture EPG
DiSEqC1.0/1.2 control
TV/VCR Scart & RCA outputs
$220

Irdeto 2.06B CAM	$140	Zinwell C band LNBF	$35
Viaccess CAM	$140	Zinwell 10.70/11.3 /Universal Ku band LNBF	$25
65cm offset dish	$27		
75cm offset dish	$40	MTI C band LNBF	$35
Superjack DiSEqC 1.2 motor	$95	One cable solution C-banc LNBF	$50
Universal Mount	$15	Satellite finder	$30
2.1m mesh dish	$120	Silver Card (10/bag)	$125
2.3m mesh dish (motorized)	$170	Gold Card (10/bag)	$85
		RG6 Stripper	$20
2.4m heavy duty mesh dish (motorized)	$210	RG6/11 Crimper	$30
1.8m 6 panel dish	$130	Angle meter (made in USA)	$85
RG 6 Dual cable (305m/roll)	$75	Compass	$30

Optus C1 Aurora Kit
Coship digital receiver

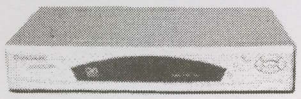
(Iredto cam embedded)
11.3 GHz/Universal Ku LNBF, 75cm dish, Mount bracket.
$315/set
+Aurora card $75

LBC, ART, Al Jazeera Kit
Coship digital receiver

(Iredto cam embedded)
C-band LNBF, 2.3m Mesh dish.
$435/set
+Subscription fee $20/month*

Free to air kit (for NSS 6, Optus B3)

Including dish, LNBF, digital receiver, etc.
Start from $250/set



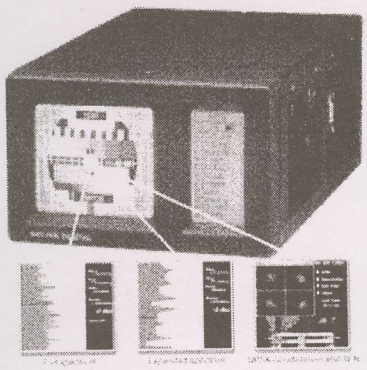
Changhong 1000 Digital Receiver
Aston 1.05 Cam embedded

Best Value For Indian & French
(C-band on Asiasat 3s & Ku band on Intelsat 701)
C & Ku band input, 2000 Channels.
$170

(Top quality) TESTING EQUIPMENT SPECIAL (made in Sweden)

Satlook MARK III $950
- 4,5" B/W monitor for PAL/NTSC/SECAM
- Satellite-receiver 920-2150 MHz
- Tunable sound 5,5-8,5 MHz
- Spectrum analyzer
- Expanded spectrum
- LNB voltage 13/18 V
- 22 kHz tone switch
- KU- and C-band (normal/inverted video)
- Built in rechargeable battery
- Only 3,5 kg complete with carrying-case

Satlook Digital NIT $1550
We are pleased to introduce our new SATLOOK Digital NIT. NIT stands for NETWORK INFORMATION TABLE, which today almost all DVB-satellites transmit as standard. The NIT contains information about the Satellite and TV/Radio-channels. It's very easy to identify a Satellite when reading out this information. The different TV/Radio-channels on a transponder can also be read-out.



Satlook COMBO $2550
- Input frequency: 2-900 MHz and 920-2150 MHz
- 4.5" B/W Monitor for PAL/NTSC/SECAM
- Lots of memory positions for spectrum pictures
- RS232 for PC-connection
- Built in, rechargeable battery. Only 7kg complete with carrying case

TV-PART:
- 2-900 MHz spectrum analyzer
- Presents full range spectrum (and expanded)
- Very high accuracy, ±1dB (at 20°C)

SAT-part:
- 920-2150MHz spectrum analyzer. Digital BER, QPSK and S/N-ratio
- Satellite-ID and TV/Radio-channel info (NIT)
- Tunable audio bandwidth 5.5-8.5MHz
- LNB voltage 13/18V, 22kHz tone switch
- DiSEqC according to level 1.0, 1.1, 1.2
- KU- and C-band (normal/inverted video)

Full range of C/Ku band satellite dish - panel & mesh, prime & offset, from 45cm to 4.5m
Full range of Zinwell, MTI C/Ku LNBF - Dual output, one cable solution, C/Ku combination
Full range of actuator - From 12" light to 36" heavy duty
DiSEqC 1.2 Positioner & SupperJack EZ2000 Positioner
2.4 GHz AV sender and Remote extender
RG6 Cable and Motor cable
Full range of satellite accessories

THIS MONTH SPECIAL

SPACE 2300A FTA Digital Receiver $1300/(10 units)
Magix 8800 Digital Receiver $1200/(6 units)
Phoenix 2.3m Mesh dish $1650/(pallet of 10 sets)
Zinwell LNBF 15K C-band LNBF $648/(box of 24 units)

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is published 12 times each year (on or about the 15th of each month) by Far North Cablevision, Ltd. This publication is dedicated to the premise that as we enter 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 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.

Editor/Publisher
Robert B. Cooper (ZL4AAA)
Office Manager
Gay V. Cooper (ZL1GG)

Reaching SatFACTS
Tel: 64-9-406-0651
Fax: 64-9-406-1083
Mail: PO Box 330
Mangonui, Far North
New Zealand
Email -Skyking@clear.net.nz
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our TENTH year!

COOP'S COMMENT

July 15, 2004

When something seems "too good to be true" I have found after 66 years of life it usually is - *too good to be true.*

When Foxtel promotes their current version of satellite and cable as "NEW digital TV" and then has their telephone sales people talking down the previous satellite service as "old fashioned analogue" - *beware.*

When an adult television service offers two or three channels for a "lifetime fee" of under $200 (NZ, Australia) promising to never charge an annual fee, *beware.*

When a supplier offers a receiver that claims to function as a "master" capable of feeding conditional access (CA) instructions to "an unlimited number of 'slave' receivers" - *beware.*

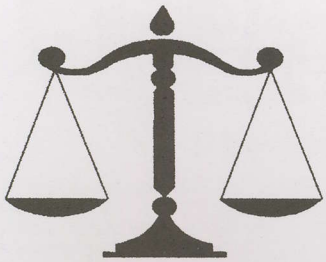
Competition is the life blood of the world's economic system. If company "A" can offer a widget for $100 and make a profit, and company "B" comes along with a gold-plated version of the widget for $49, "A" had better get their product in line or suffer the ravages of a disloyal market driven only by the appearance of value. Half the price plus gold-plated? *Adios "A"!*

Paying for television reception, through a monthly or annual fee system, is relatively new. Before there was pay-TV, we had (starting in 1936 and the BBC in London) *free TV.* When free-TV was being born, there was an immense debate as to whether the costs of television production and transmission could ever be paid for by advertising and/or annual license fees such as the UK still collects (as does Australia as a means of funding ABC television and radio). Zenith, one of the pioneer US manufacturers of radio receiving sets, was totally convinced that TV was going to be so expensive that it could only be funded by pay-to-view technology. Zenith introduced Phonevision in 1946, struggled for five years to get it accepted and finally threw in the towel. Later pay television projects by a wide variety of players all learned the same lesson over and over again through the 60s/70s and 80s. All failed because free-to-air was not so bad that people were willing to take money out of their pocket and stick it into a slot as an option.

Two elements changed in the late 80s and 90s to create what we now accept as pay-TV. The first was volume - many more channels. As a very savvy pay-TV guy once observed to me, "individually, not one of these channels would cause me to pay $0.50 a month to have in my home. But bundle together 20 or 30 or 40 and charge $50 a month - and they stand in line to sign up!" The second was dollars and greed. Pay-TV entrepreneurs, Rupert Murdoch in particular, worked out that by offering to pay sporting teams huge (not big - HUGE!) sums of money for their "TV rights" the sporting groups could be enticed to shut-off their events to advertiser supported "free TV." Suddenly, "pay-TV" owned *exclusive* rights to major sporting events and disenchanted viewers had two choices - pay to watch or not watch.

Understandably, an element of society found this intrusive, not acceptable. Pay-TV piracy was largely fuelled by folks who responded to "pay to watch or not watch" by drawing their own lines in the sand. How about, "watching but not paying???"

The first major piracy occurred in 1986. For each "piracy breakthrough" there has been a pay-TV response, increasing the complexity of the security system. Too good to be true? *Beware!*



LETTERS

PROGRAMMER PROGRAMMING PROMOTION UPDATE

JULY 15, 2004

16 footer for sale?

"Is there anyone out there with a spare/surplus 16 foot dish available? I want to return to C-band (from a brief excursion to Ku) now that I have a digital receiver."

Warwick/ZL1WL North Cook Isles
penrhyn@airraro.co.ck

The northern Cooks should have a good shot at North American C-birds including 127, 131 and 135W using a 16' dish.

LNB failure?

"We had an LNB using 10.7 GHz LO which produced an 'excellent' quality signal at the dish but no picture at the receiver (C1). When we replaced the LNB, it worked fine. Is there a LNB test for the bench before getting into the field?"

Keverall J. Catterson, .65 Group

A 10.7 LO (local oscillator) will mix/convert 12.250 to L-band 1550 while 12.750 will shift to 2050. Those who normally use a 11.3 LO (local oscillator) LNB expect to find 12.250 at 0.950 and 12.750 at 1.450 (L-band). A receiver loaded for L-band signals in the 0.950-1.450 region must be reloaded (memory wiped clean, rescanned) when the LNB changes with a new LO. That is a reminder, some overlook. Most "inline installer meters" respond to all of L-band (0.950-2.050/2.150) and you have no way of knowing where in that frequency range the indicated signal actually is; another reminder why you really need a meter that tells you more than simply bulk signal level. Now - your problem? A LNB with a properly functioning "front end" (low noise stages 1 and 2 amplification) would indicate OK at the dish because there is no line loss or virtually no line loss to the meter. But at the end of 30-40-50m of RG6 cable, signals in the 1.550-2.050 region will be significantly lower in level (attenuated). LNBs follow the low noise "front end" with "bulk gain" stages which provide the gain required to make the trip through high loss coaxial cable. Perhaps one or more of these stages was bad in the object LNB. As for bench-checking LNBs - see p. 10 here.

Fiji's Sky?

"So what is happening? July 1 has come - and gone!"

Distant TV, Samoa

Not a pretty sight (site!). One hell of a mess - see update p. 28, here

RAI? *We were wrong.* SF#118 reported RAI's AsiaSat 2 service within the European Bouquet was going to be encrypted, or removed from FTA. Our information source on this was incorrect. It now appears that Australian based World Media (which distributes RAI's PAS-2 version in CA format by subscription on 3836Vt, through Strong Technologies), while it would be delighted to have RAI on As2 eliminated as an FTA service, is not about to be so rewarded. RAI Rome maintains the As2 service within the European bouquet, and Australia is but one of As2 served 55 countries where the service is seen (and used). To eliminate RAI on As2, to "reward" an Australian firm that would perhaps benefit, would cause 54 other countries to lose service. It is not going to happen - contrary to our report. What *is* underway is a *gradual* reduction in "entertainment" and "sport" programming through RAI As2, which will have the long term effect of making the subscription service on PAS-2 sold by World Media more desirable.

PowerVu??? Fortec Star line of IRDs manage fast loading blind search plus code-key (some of which auto-update) plus in one model CAM/CI ability; p. 12 here. But PowerVu? "Key Code Function" menu in Fortec Star lists the CA formats which it claims it can handle as a code key entry. SECA, Viaccess, Irdeto/ Betacrypt, Nagravision, CryptoWorks and sure enough - it says "PowerVu." Is this for real? Has anyone seen it work?

No card, no CAM, no code-key??? Yeah right. Out of the box and plug it in and there they are? Yes, we were sceptical of course. The line between free-to-air and encrypted just blurred; by a bunch. Of course there *is* some clever "after-market" software buried inside and the factory says, "*Hey - not us! We didn't do this!!!*" The "X-Box" (made in Korea) rips through all (that is ALL) of the C1 channels in Irdeto V1. Page 15, here.

TARBS bankruptcy? Had to happen. Installers notified "stop work" July 5th, NSS6 Arab feeds cut off same day. See p. 29.

UCAS Enabled? Clever marketing folks use this phrase for advertisements in (European) magazines (such as TeleSatellit, What Satellite) to say to reader - "*We do code key!*" in a broader "EURO" marketplace where, in fact, code-key might not be "legal."

138E. Oops. June 29th launch Telstar 18/Apstar 5 (to 138E) defective - bird stopped at 21,000km (should have been 36,000). This would have been - could be still a big one with footprints to NZ and Australia to 2m region C-band. Stay tuned.

The first Digital meter FOXTEL Approved.

Analogue and Digital, BER and MER, QPSK and COFDM or QAM for DTH, MDU, MRE, MATV, SMATV or UBB work, the challenges new technology bring to your tv measurements are many.

The new EP300 TV meter is a better TV meter and the first to be fully approved by Foxtel for all types of TV work.

Faster responses to Digital measurements and calibrated digital MER are among the features of the EP300. Not to mention instantaneous spectrum analysis and outstanding Analogue TV measurements.

Improved Data Logging and newly precise Spectrum measurements round out the features of an instrument that is even built better.

Give your customers the measure of a lifetime - with an EP300 from Laceys.tv

EP-300
faster true BER for QPSK COFDM QAM.

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Free-X TV problems?

"A local web site announces that as of the end of July, Free-X TV's two/three channels of NSS-6 service will switch from Neotion-System CAM modules to Viaccess 2. This means those who believed they had purchased 'lifetime service' with the CAM will now have to payout something in the range of GBP40 for a further two-year subscription. Further, apparently it is not possible to simulcrypt Neotion and Viaccess 2 so something like a million present Neotion users will find themselves without the package until they add Viaccess 2 capability."

Siam Global, Bangkok

In fact, the only announcement made to date is for Free-X service through European 13E Hotbird transmission. Whether NSS-6 service will, simultaneously or sometime soon, also scrap the Neotion CAM system remains uncertain. GBP40 is early July worth A$105. Building a business plan around one-time payments and depending on continuous growth forever into the future was probably not their smartest decision although if in fact they have run up 1,000,000 subscribers, someone has done rather well with the GBP60,000,000 (A$156,732,373) collected! See our further comments, p. 31.

Europe and piracy

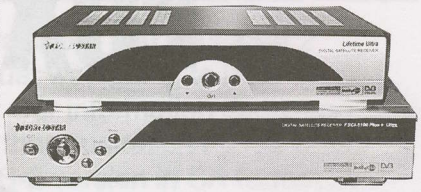
"I am anti-piracy but pragmatic. I once believed that if everyone paid their dues, we would all have access to services legally and at cheaper prices. Sky UK has killed that concept stone-dead; a monopoly charging whatever it likes. Moreover, TV reception runs totally contrary to the new 'EU' order of life. We are now allowed to live and work wherever we wish but EU laws continue to make it illegal for French folks residing in the UK to watch French TV while here, or conversely Brits living on the mainland are not allowed to legally watch British TV. So much for the 'No Frontiers' clause in the original EU agreement! So it is no mystery what fuels piracy here - even before we enter the realm of adult porno."

Roy Carman, UK

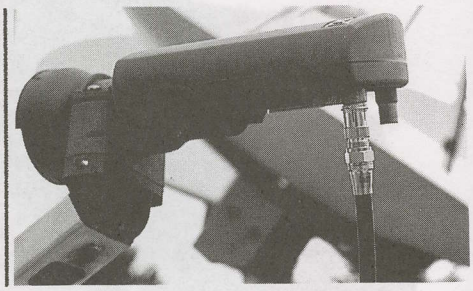
While it is true British monthly What Satellite accepts advertising from many piracy-card/system sellers, it is important to note they do not publish "codes" or tell readers where to find the mandatory codes that are often required for turning on a "EU directive" service that may be illegal to watch in some countries. (p. 31, here). Now that we have auto-update available, who needs codes? (p. 12, 15)

HARDWARE EQUIPMENT PARTS UPDATE

JULY 15, 2004



Smaller and smaller. But - better and better??? We explore the latest hot shot does-it-all FTA + CI + code key box from Fortec. The UK's Roy Carman observes, "What an odd receiver this is turning out to be; you could write a book on this one." Not quite - you'll have to settle for 2 pages (p. 12).

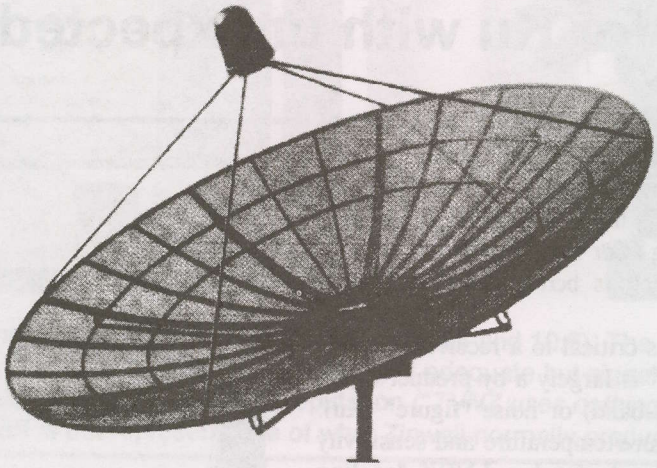


"**Greatest myth** of the 21st century?" Garry Cratt suggests those who claim to be producing a 0.3 dB noise figure Ku band LNB/f smoke funny cigarettes. "Real" 0.5 dB devices cost thousands of dollars from brand name reputable firms such as Norsat (and they NEVER claim 0.3 dB). So how can someone you never heard of operating from a shed in China create 0.3 dB? Page 6 here.

Tiny tots. How much physically smaller can the basic satellite receiver become? This palm-sized FTA model is only slightly longer (deeper) than the small RCU, uses a wall-wart SMPS power supply (thereby greatly reducing case heat) and is now being distributed by Av-Comm Pty Ltd (61-2-9939-4377). The Ku-band LNBf at rear? Just to provide an indication of how small it can be! SF review in August.

Too little, too late? New Zealand's radio spectrum regulatory body, (the) Ministry of Economic Development, has issued a 16 page document which proposes to have the country create and launch a satellite to 158E (half-way between SingTel's C1 at 156 and B1 at 160E). The proposal, detailed at http://www.med.govt.nz/rsm/spp/satellite/discussion/index.html, requires written (Email OK) responses by 30 July. New Zealand, and all ITU signatory countries, had an opportunity to "reserve" geostationary / Clarke Orbit locations more than twenty years ago and it did not. The activation of the 158E location , using 12.25 - 12.75 GHz, would require existing users of 156E (C1) and 160E (B1), to replace all existing dish antennas so as to avoid interference from NZLSAT at 158E, or, to alternate polarisation which would be tricky (and not technically satisfactory) to reduce (not eliminate) interference.

JOYSAT



SIX Reasons to Choose a JOYSAT Mesh Dish !

Cost Effective, Economical

Heavy Duty Frame with Strong Mesh

Suitable for Windstorm areas

High Performance, High Gain

Both C and Ku Band: 2-13GHz

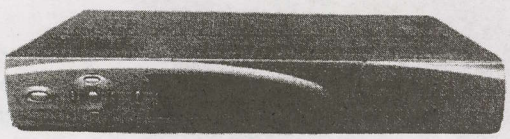
Choice of Colours: Black, Cream and Dark Green

And SEVEN More Reasons !

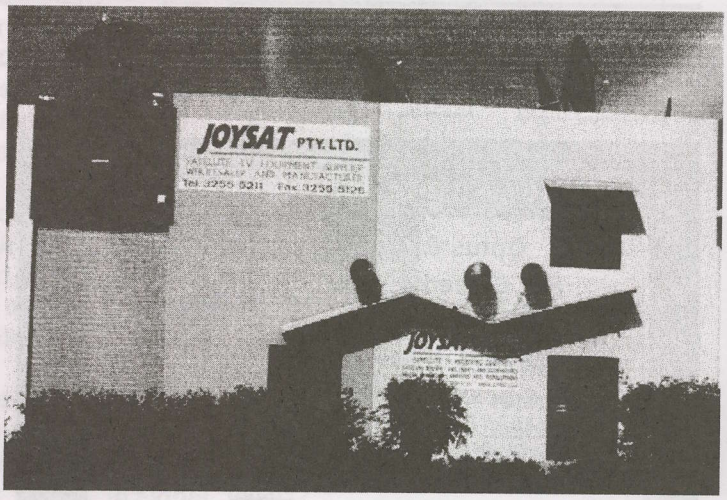
2.3m 3.07m 3.7m 4.5m 4.9m 6.1m 9.0m

Supermas

Digital Terrestrial Set-top Box



Teletext, EPG, Signal Strength Meter, 4.3/16.9 Signal Output, Sleep Timer, Games, SCART, RCA and RF connections and much more !



Telephone: 07 3255 5211 + Fax 07 3255 5126

http://www.joysat.com email: info@joysat.com

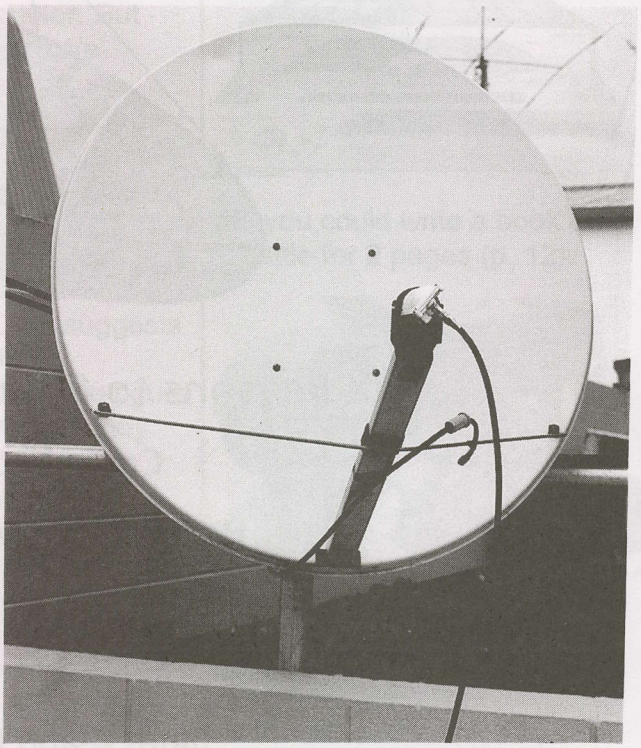
Revisit: SatFACTS Tests "Low Noise" LNBs for Ku with unexpected results

SatFACTS for March 2002 (#91) addressed the matter of LNB/f "sensitivity" and reported on laboratory testing performed on several different models. More recently, SF#114/February 2004 looked at how LNB/f products amplify and then convert the incoming C or Ku (band) signal(s) to a frequency band (L-band) which is better suited to system design.

"Sensitivity" of the LNB/f is critical to a receiver system's performance. And "sensitivity" is largely a by-product of the LNB/f noise "temperature" (C-band) or noise "figure" (Ku). SF#57 explored how noise figure/temperature and sensitivity inter-relate while SF#58 conceptualised a LNB/f "cooling system" to lower the internal physical temperature of the device and improve low sensitivity performance.

Noise originating within the LNB/f is a natural side effect of signal amplification and as long as electrons are flowing in an electronic circuit, some noise will be created. The trick with all LNB/f circuits is to amplify the very weak antenna + feed collected signals while adding a minimum of "amplifier generated noise" to the electron flow.

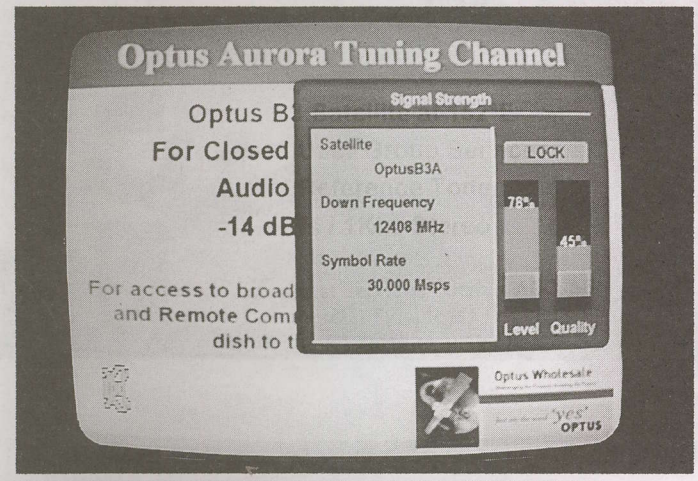
Many receivers have a built-in signal monitoring system displaying (upon request) on the TV screen two different measurements; "signal level" and "signal quality." Using standards established more than 20 years ago, a satellite receiver designer anticipates that the LNB/f at the antenna will contribute between 50 and 60 dB of signal gain (voltage amplification) to the overall system. The gain built into the receiver proper depends upon - counts on - no less than 45/50 dB of actual signal voltage gain before the antenna signal appears at the input to the receiver. If a receiver sees less than 45/50 dB of LNB/f voltage gain, there may not be sufficient signal *voltage* present to produce a blemish free image on the screen. "Signal Level" is the receiver's report to you of how much "signal voltage gain" is available.

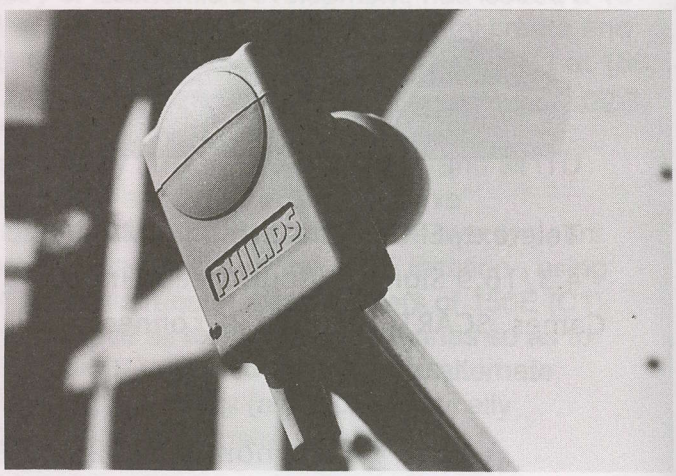


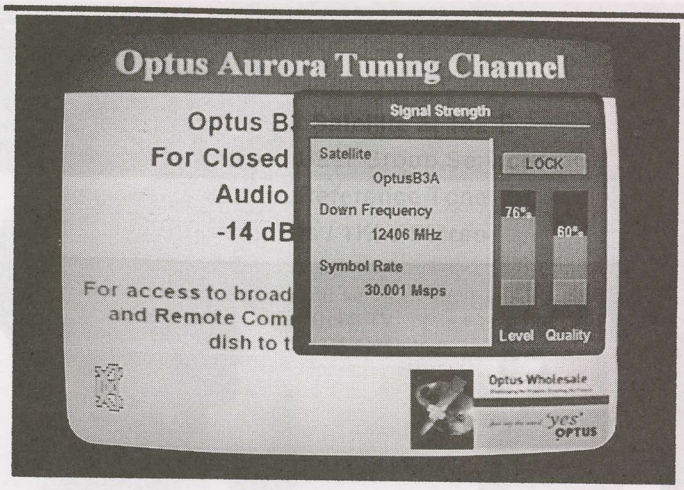
TEST bed. 1.2m Grundig offset dish fixed on B3 (vertical) service on four transponders being fed into Australia + New Zealand.

However, signal "voltage" is not by itself adequate to produce clean images. There must also be suitable "signal quality" which is a totally different measurement of (digital) error rates as monitored by the receiver. "Digital errors" occur when there is a weak signal voltage, or, a high interference level of "noise" which battles the receiver's circuits for

REFERENCE LNB - Philips Single (LO 11.300) LNB(f) model SX963R from 1998 era. This LNB/F was, at the time of its first-release, top of the line. Of course technology marches on and we include it here only as a "flag" to alert you that if your own LNB/f is of a similar age, the current models may provide improved performance.







ZINWELL "Universal" Single LNB model ZKF-CJ21 (LOs of 9.75 and 10.6). The 10.6 LO produces 12.250 at 1.650 GHz and 12.750 at 2.150 GHz. Voltage gain (76%) is adequate but signal quality (error rate) at 57% is sub-par. The Zinwell products have an excellent reputation ("*TVNZ uses nothing but ...*") and we would like to think this particular LNBf is not representative of what Zinwell normally produces. Further testing ahead.

attention. Noise can originate in a number of spots but the one of concern here is LNB/f created noise. A "clean" or "low noise" system has fewer digital errors and correspondingly a higher "signal quality."

Test procedure

We collected seven Ku-band LNBf devices for test. The antenna is a 1.2m Grundig (brand) offset. Some of the LNBf units use a 11.300 (GHz) LO or local oscillator and with the antenna peaked on Optus B3 (vertical) there are four MCPC transponders scattered from 1.204 to 1.420 GHz. Other LNBf units tested use a "Universal" (twin) LO system, receiver applied voltage selection which turns on either a 9.750 GHz local oscillator or a 10.600 GHz local oscillator. The 9.750 GHz LO is not intended for reception in the B3 12.250-12.750 GHz band; the 10.600 is. With this LO, B3's 12.404 is frequency converted in the LNBf to 1.804 GHz while 12.720 will be found at 2.120 GHz with two more transponders between these two extremes.

Between the 1.2m Grundig dish and the receiver there is RG6 cable; 25m to be precise. This cable at L-band 1.204 GHz has a loss equivalent to reducing the "Signal Level" as displayed at the receiver by 6 points; i.e. with the receiver right at the dish + LNBf, a reading of 80% is diminished to a reading of 74% after 25m of RG6. However, at 1.804 GHz, the same cable's loss is equivalent to reducing the receiver's displayed signal level by 10 points; 80 becomes 70. Why? Because cable loss increases as the frequency of transmission increases (1.804 versus 1.204).

To keep each LNB/f "equal" (whether using a 11.300 *or* 10.600 LO), our results reported here are for the receiver located directly at the antenna (3m of cable between the receiver and the LNBf). The receiver chosen for the tests is the Fortec Star FSCI-5100 Plus + Ultra; reviewed separately here on p. 14.

Some caveats. There *are* better methods of determining the performance of a LNBf. We backstopped our own tests by

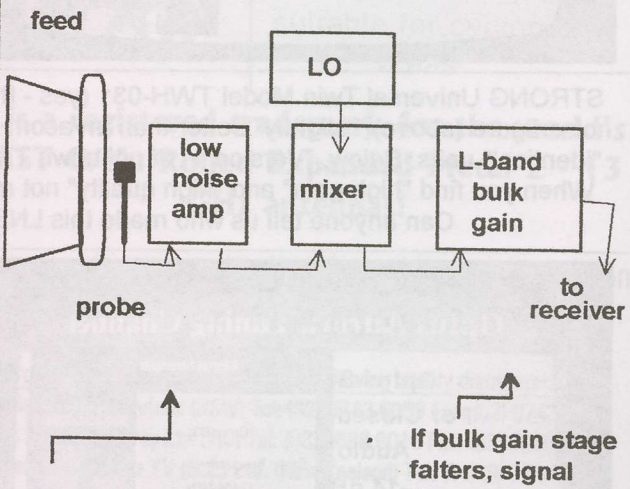
Voltage gain versus noise versus "signal quality"

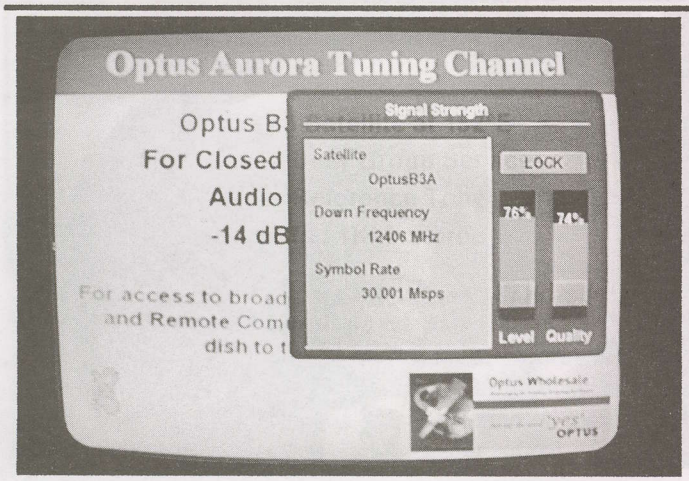
LNB and LNBf devices perform three prime functions: (1) Using specially formulated low noise transistors, to "grab" the weak signal from the background noise, and amplify it to a useful "voltage" level; (2) The amplified signal is frequency converted from C band (3.7-4.2 GHz) or Ku (10.7-12.75 GHz) to L-band (0.950-2.150 GHz) using a LO (local oscillator) and "mixer" circuit; (3) The new L-band spectrum is further amplified in "bulk gain" stages to allow for cable losses (at L-band) during the passage to the receiver.

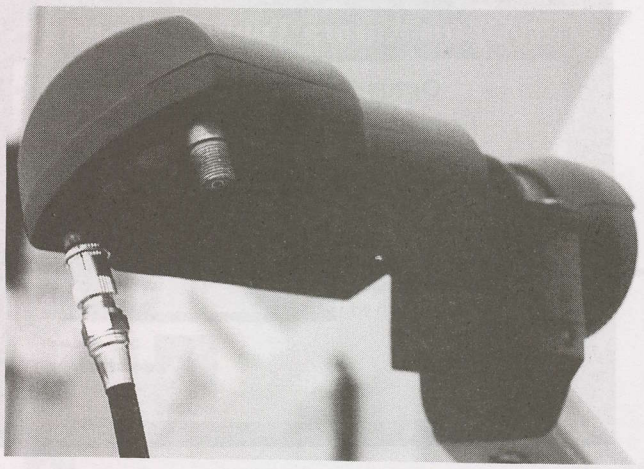
"Sensitivity" is dependent upon the "low noise" factor of the first one or two LNB/f stages. The lower the LNB/f noise figure (measured in degrees Kelvin at C-band, in fractions of a dB at Ku) the lower the signal can be and still produce acceptable images (measured as "quality" by a receiver's metering system).

"Signal level" is pure signal voltage without respect to signal quality and largely depends upon the L-band bulk-gain stages after the C or Ku band input signal(s) have been frequency converted.

A high "signal *level*" is <u>not</u> a guarantee of "high *quality*" reception.







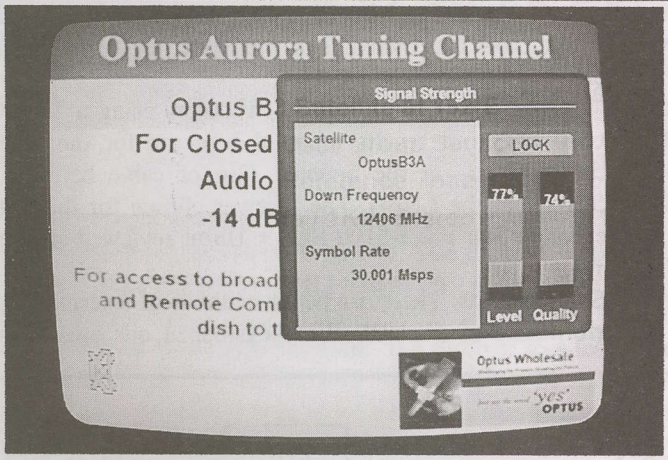
INVACOM Universal Twin model TWH-031 with claimed noise figure of 0.3 dB; LO 9.75 and 10.6 (GHz). In truth, "0.3 dB noise figure" in the 10-13 GHz (region) is quite an accomplishment. The commercial folks pay upwards of US$2,000 for "guaranteed" 0.6 dB noise figure which makes us suspicious that some 0.3 dB "better" even exists.

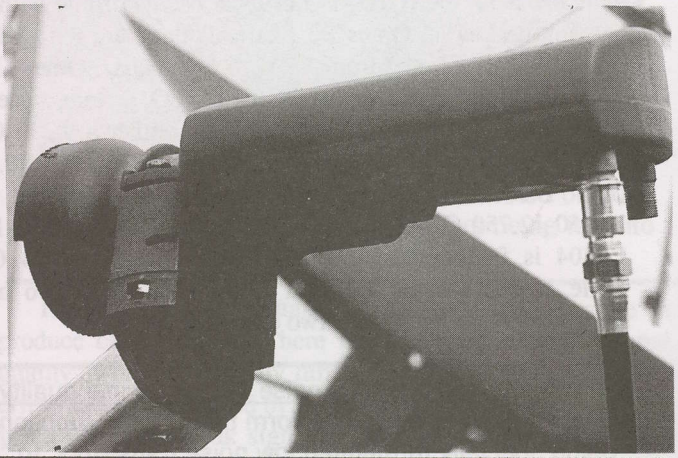
using a Scientific Atlanta D9223 receiver as a more technically sophisticated "bit error" analysis option - comparing the Fortec results with the D9223 with notes within the sub-report of a Sharp model LNBf appearing here.

Results

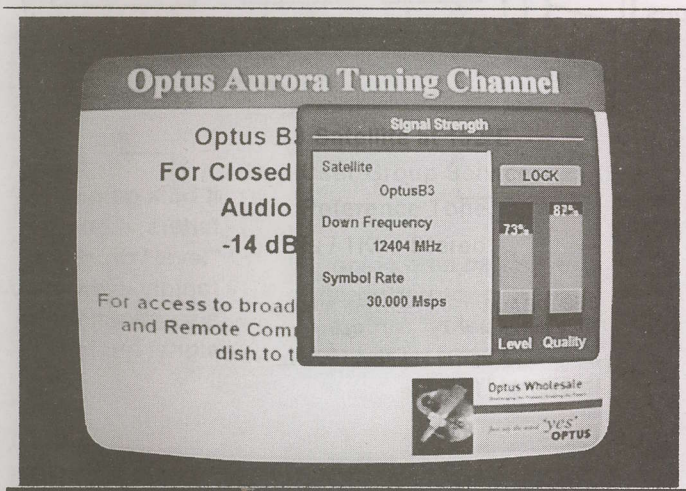
Leon Senior (Strong Technologies) and Jason Radich (aDigitaLife) each supplied 0.3 dB (claimed) noise figure LNBf units for test. AdigitaLife also supplied a Zinwell 0.3 dB (claimed) device. We supplied two unbranded (we think made in) Taiwan LNBf units, a reference LNBf from Philips and a Sharp (Sky NZ) version installed by Sky that very day.

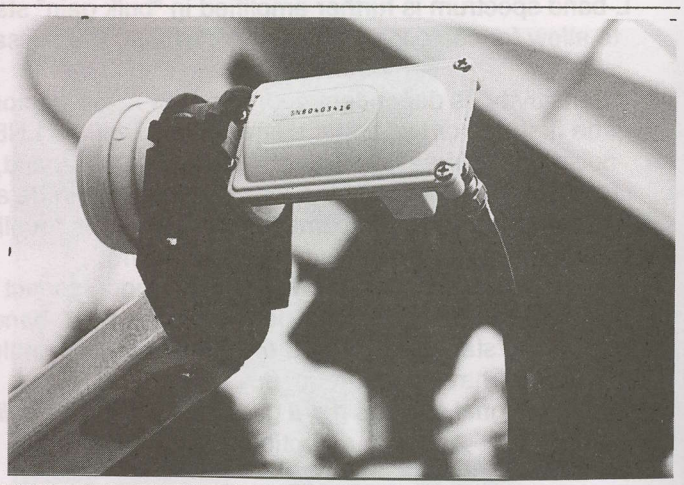
"Signal level," remember, is an indication of overall voltage gain of the LNBf. It is possible to have lots of voltage gain and still have unsatisfactory "signal quality;" the Zinwell





STRONG Universal Twin Model TWH-031 (yes - the same as the Invacom above) with an also "claimed" 0.3dB noise figure (above); "slightly" better than Invacom labelled version - no more than we might expect between two "identical" units. Below, "Version 1" of unknown Taiwan (?) LNB (serial number ending ..16) with 11.3 GHz LO. When you find "high gain" and "high quality" not marred by high phase noise (see. p. 10) the unit is a winner. Can anyone tell us who made this LNBf, a model number and if it is still in production?





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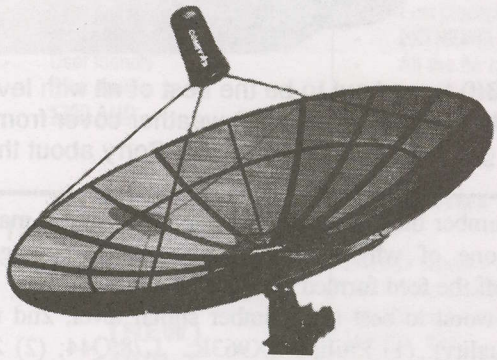

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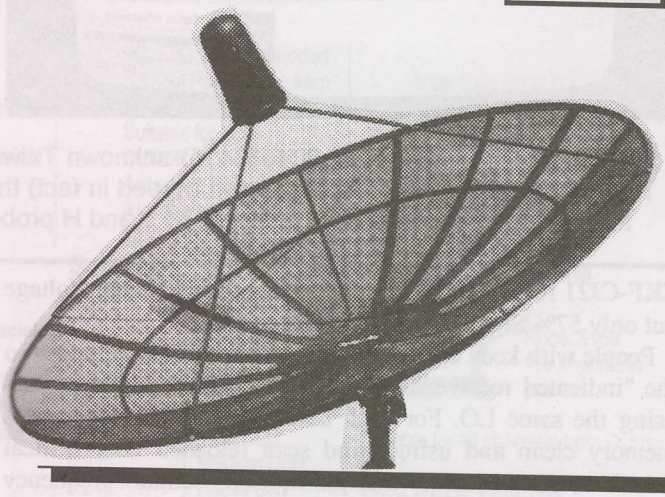

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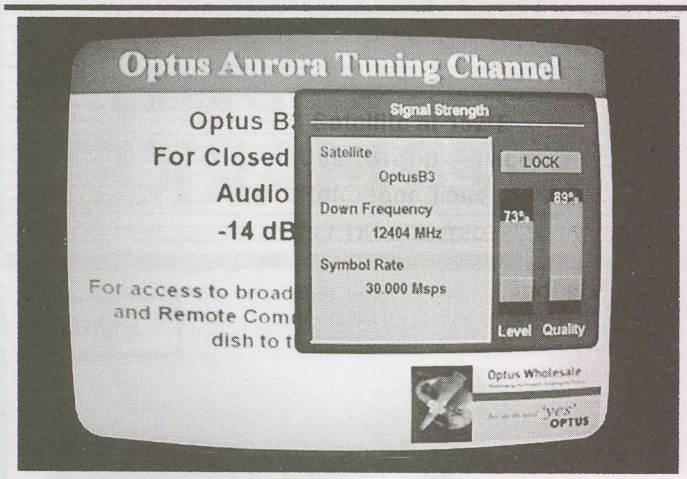
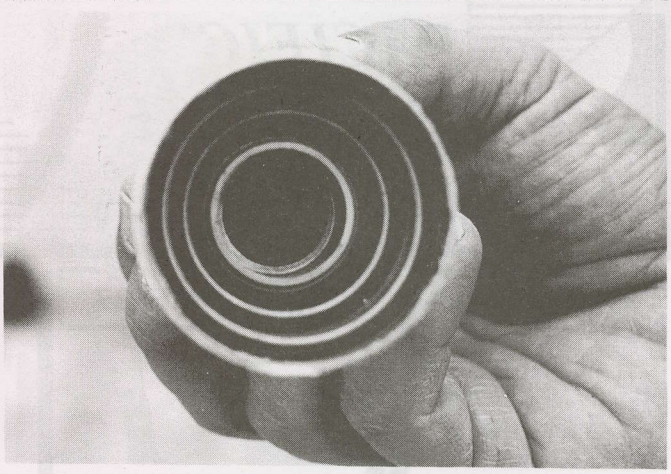




VERSION 2 (serial number 804033415) unknown Taiwan (?) LNB(f) turned out to be the best of all with level of 73% and quality of 89%. We had torn (ripped in fact) the factory hard-plastic (moulded) weather cover from this to inspect the internal voltage-switched V and H probes before grabbing it as a test object. Sorry about that!

ZKF-CJ21 results are an example of this (76% Signal Voltage but only 57% Signal Quality).

People with keen eyesight might notice a slight variation in the "indicated receive frequency" for different LNBf devices using the same LO. For each LNBf we wiped the Fortec's memory clean and using blind scan reloaded B3's vertical side. Yes, there is some variation in local oscillator frequency as indicated by the receive frequency displayed. But overall, there was significant correlation between the units.

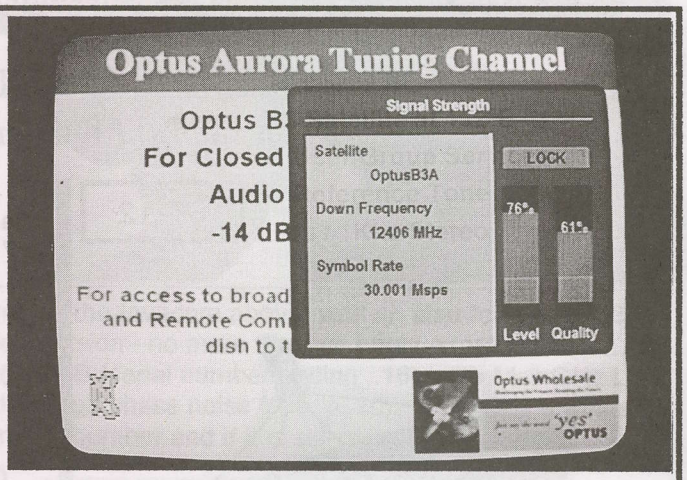
The two 0.3 dB units from Strong and aDigitaLife measured nearly identical. But the surprise was a pair of ancient (well, several years old) "junk box stored" unmarked (serial number only - no product name nor part # markings) LNBfs; one of which we had previously "damaged" by ripping off the feed formed plastic protective shield.

From worst to best (1st number signal level, 2nd number signal quality): (1) Philips SX963R: L78/Q44; (2) Zinwell ZKF-CJ21: L76/Q57; (3) Sharp (Sky NZ): L78/Q59-75(*); (4) Invacom/aDigitaLife TWH-031: L77/Q72; (5) Strong TWH-031: L76/Q75; (6) ? brand-SN015: L85/Q75; (7) ? brand-SN016: L87/Q79.

So *which* should *you* use? The Invacom/aDigitaLife and Strong 0.3 dB (claimed) noise figure versions are appealing, unless your junk box has our "mystery source" units as well!

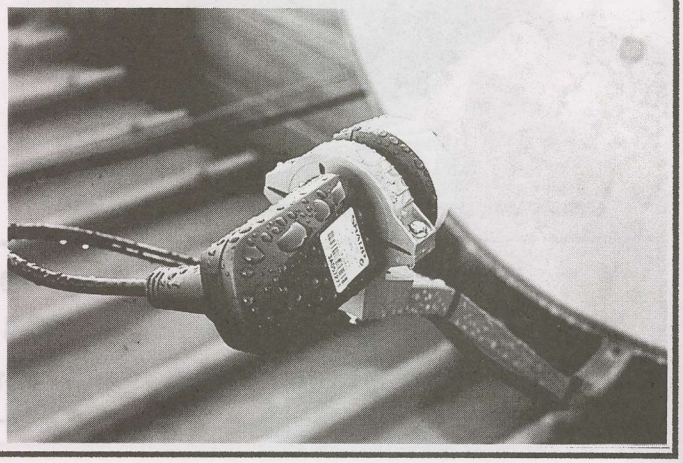
Sky NZ's Sharp Model Ku-LNBf LNB

*/ Signal **level** normally remains stable unless there is rain or heavy, blowing cloud cover. Signal **quality** does bounce around a bit with virtually any LNB/f. The major cause of "quality-bounce" is something called "Phase Noise" generated within the LNB/f. Phase noise was rampant in older LNB/f products (it did not matter - much - in the analogue days; it *does* matter with digital!) but has largely been contained in current versions. *Except* in the Sharp LNBf we tested. The quality jumped around, constantly, from a low of 59 to a high of 75 - a 16-point swing. Other LNBf tests here typically had a 2-5 point *swing* which we consider nominal and normal for "*reduced* phase noise" products. Yes, other factors can also affect "quality swing" - beyond the scope of this discussion. Bottom line? Large quality swing? Not good!



Bench Testing LNBf?

Lacking sophisticated noise figure test set equipment, no actual performance tests can be done off the dish and away from a receiver indicating gain and quality parameters. However, if you have an installer meter that tells you how much current (in mA) the LNB/f uses, measure the unit when brand new and write the number in waterproof ink on the case. If a L-band "bulk gain" stage fails, the unit should use significantly less current (such as 105 mA when new, 85 after a gain stage failure). The bad news is not all LNB failures change the current drawn so this is not a foolproof test for bench-grading LNB/f products!

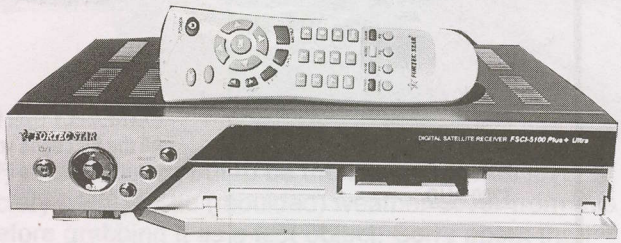


Code-Key + Blind Search + CI

Fortec Star FSCI-5100 Plus + Ultra
Claims to do it all

There are two recent Fortec models of interest; the "Lifetime Ultra" which combines FTA and code-key functions, and, the FSCI-5100 Plus + Ultra" which adds a pair of Common Interface CAM slots for use with Alpha CAM, Conax, Cryptoworks, Irdeto, Nagravision, (PowerVu-see p. 3) and Viaccess. Both are capable of "blind scan" although as we and others have found (see Roy Carman, p. 14) there are differences in the ability of this function between the two. Roy Carman's separate observations aside, we will concentrate here on the CI x 2 format more expensive version.

Is this receiver a step up from previously offered blind search models? Our bottom line here. It is less of a "step up" and more of a "step sideways," primarily because in additional to acceptable (if not yet perfect quality) blind searching, it adds the grey market functions attached to code-key editing (enter 1668 to access the code function) plus a pair of in-built CAM slots allowing the user to access smartcard services.



Common interface CAM (x 2), 5,000 channel memory, code-key edit, 1.5 - 45 Ms, blind-scan, DiSEqC 1.3, auto PAL/NTSC, and more.

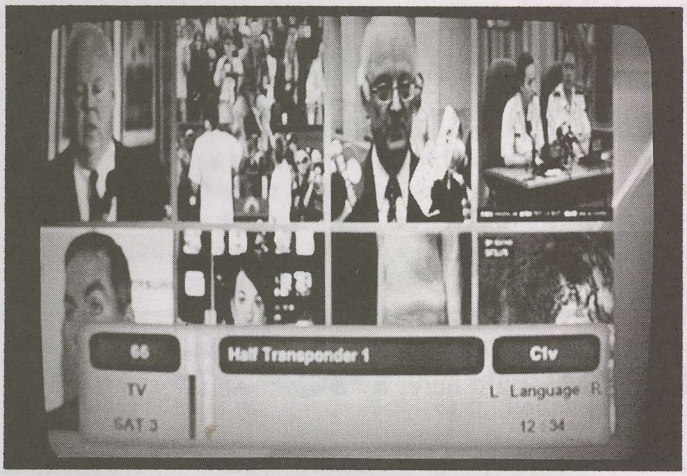
The blind search is not yet "perfect" (it produces unexpected 'rogue channels' which may or may not actually exist) and the 3,000 channel limit (television and radio combined) may sound like more than enough for Pacific region use but as we and Carman found, when it is 'full' a number of unpleasant things occur requiring a full at-mains shut-down and reboot.

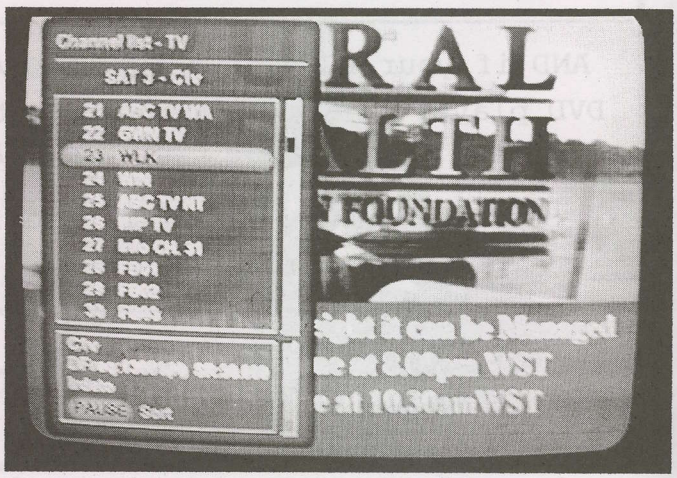
Is it better than the three primary blind search competitors - i.e. Coship, Innovia and Satwork? The Coship remains at least an equal, but better - yes - than Innovia or Satwork. But blind search is a function appealing to only a limited set of users (the "DXer Super Enthusiast") and in fact may be a negative for folks who are not ready to dedicate their life to "being first" to locate obscure services the day (or hour) they first appear on satellite. Those 3,000 memory positions, by the way, are eaten up in a hurry when you allow through menu selection the receiver to lock onto and memorise "ALL + D" channels found; "D" is digital data and we watched in horror as one AsiaSat 4 pass rolled up more than 50 totally useless memory positions in around 3 seconds time.

As we suggested in SF#116 (p. 6), the current family of (STi 5518 32 bit) processors available for satellite receivers reached its natural limits of capability six months or so backwards in time. For a truly "DXer perfect" blind search machine, we must await the next "engine" to come out of the processing lab world.

As for the alternate functions - those "sideways additions" that separate the Fortec 5100 from other blind search capable

FORTEC FSCI-5100 Plus + Ultra (a most strange product name) has above average sensitivity (equal of Humax 5400). Scanning is fast - select sats to be scanned, scan each, select "SAT" button-push, then to "TP Edit" to create list(s) you wish. Software upgrades via Internet postings are issued frequently and the written manual details the proper way to "extend the lifetime" of the IRD with these updates. In many ways, this is more of a "do-everything" enthusiast's receiver than a consumer box.





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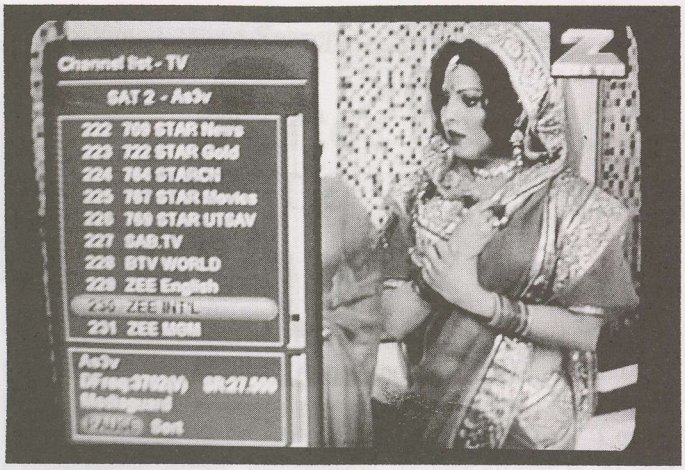
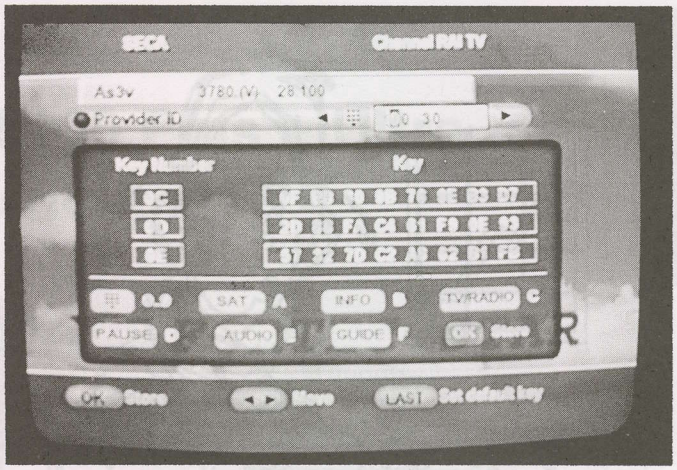




SURPRISE number one with code-key: Out of the box, plug it in, and there they are. No code key menu to find (one is there, however - right hand photo); no numbers to enter. The factory claims no "knowledge" of the "aftermarket software" that allows code-key to function. Yes, it appears to be "auto-updating" but until we've gone through a code-key change this is supposition on our part. It doesn't get much simpler than this.

receivers. Yes, it appears capable of accessing through code-key edit plus access numbers gleaned from "the web" (SF#116, p. 8) a number of version-**one** CA format services, without a smartcard. The code-key software (late June) covers Betacrypt/(Irdeto), Conax, Nagravision, SECA, and Viaccess. However, software released in mid-June added Conax to this list and software updates require serial cable downloading and likely the assistance of a dealer with special skills. Of interest, the Fortec written manual devotes more than two pages to downloading new software with this pointed warning: "Never turn off the receiver during software downloading. Any interruption while downloading will damage the flash ROM, and will void the warranty." In fact, the same manual totally ignores code-key functions and this suggests the manufacturer considers this a post/after manufacture feature. If, in fact, the code-key software is added by a mysterious someone/somewhere *beyond* the factory, has the factory warranty (already) been voided when unpacked from the factory carton by the unsuspecting consumer? Or are the manufacturer (Asia) and the format-distributor (Canada) just being legally-cautious by including code-key but leaving it to Internet to provide the necessary detail to make it work? Just for your own reference, our 5100 C2 software has the following "date codes" and reference numbers:

A17 BAR-2.29; Boot Ver 5, 04.11.2004.

Given all of the warnings and Carman's experience (below) we cannot in good conscience suggest this receiver to users who find "fiddly menu instructions" intimidating or web posted "updates" frightening.

Not recommended? Not to the *average* consumer user. To someone else? Yes. For the first time the 5100 C2 allows those with above average skills, and a tolerance for less than simplistic menu commands, to sample *everything* that is current and "hot" in the home dish world, all in one receiver. Until the Fortec, you needed one for blind search, another for code-key and a third for CA smartcard use. Fortec, by stepping sideways, has rolled it all into one.

Source: aDigitaLife, P.O. Box 1026, Paradise Point, Qld 4216 Australia (61 7 5529 5683; www.aDigitaLife.com). Price: A$399, delivered in Australia. Alternate "home" source: Fortec Communications Inc, 2780 Skymark Ave, Unit 8, Mississauga, Ontario, Canada L4W 5A7.

Roy Carman on "Fortec"

Carman, our non-resident blind search aficionado, is perhaps the most qualified individual in the world today to test receivers claiming this function (see SF#107, p. 6). His observations.

"Both models appear to be very fast with blind search; the threshold is a little questionable. Both claim a (blind search) symbol rate of 1.5-45Mbps; in fact the 2CI version (5100 Plus) won't latch onto symbol rates below 2800 (exactly the same as the Innovia) although the FTA model (Lifetime Ultra) does go to 1300. Fortec Canada, a product source, has promised an upgrade to fix this but if you take their website literally (www.fortecstar.com), receivers must be returned to an authorised dealer for updating (a potential nightmare for dealers!). The 5100 CI is much faster (doing blind search) than the FTA model but speed is a trade for doing a thorough search (both use a search parameter of 8 MHz steps with a search +/- 2 MHz from that point). For example, Turksat 1C: the 2CI model took 6 minutes to locate 52 TV and 39 radio channels; the FTA took 14 minutes 5 seconds to load 65 TV and 39 radio from the same bird (the additional TV channels being those below Ms 2800, which the 2CI could not identify). European magazine Telesatellit in their review of both did something slightly dishonest; they reported the channel total load from the FTA (which had the most) and the blind search loading speed of the (faster) 2CI version - as if they were the *same* receiver. Not so of course - a bit like taking the 0-100km time for a Ferrari and the kilometres-per-litre figure from a Fiat and representing they were both from the Ferrari! The clock function is quite useless. When removing loaded data, you must eliminate the TP and then the channels (or vice versa sequence); channels should be made to disappear when you remove the TP. 'Network Scan' and 'Advanced Scan' appear to perform similar/identical functions although the menu screens are different and TPs appear that are not on the TP list. Software updates? It appears software changes require their own unique 'software loader' and a serial cable. And, select 'auto' rather than NTSC or PAL or you will lose the one you did not select during loading! Finally, the receiver doe not recover on its own after a (rain) outage; requires mains intervention. " (r.carman@ntlworld.com)

The "No Card" game notches up a step

Aftermarket "X Digital" pushes the envelope for cardless receiver systems

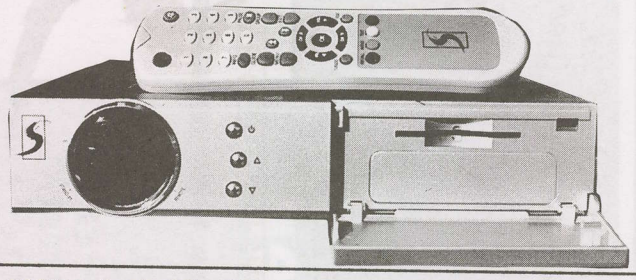
- In the automotive world, it is called "*the aftermarket*" which describes the commercial opportunities for folks who make automotive accessories to capitalise on something the original factory overlooked or neglected to do properly. Adding a DVD player + display system to your vehicle is one example of "aftermarket." Or tinting the windscreens. The "aftermarket" has well and truly arrived in the home satellite world. And for now, it is all about *software*.

The "X Receiver" is our instant example; a receiver which the factory designed for one purpose has been adapted by software malcontents to do something quite different. Such as play Aurora without a card, or a host of other services which normally require a smartcard, an optional CAM, or both.

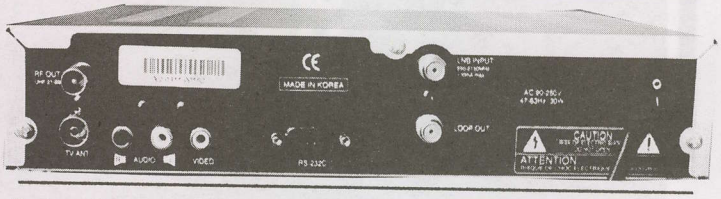
As SatFACTS first reported in #116, for several months now it has been possible (and practical) to purchase what purports to be a straight FTA (free-to-air) receiver, and then by going to one or several web posted Internet sites locate new software which when injected into the otherwise innocent IRD turns it into a device which is capable of accessing some (certainly not all) encrypted services.

For the record, Irdeto Version 2 (also known as Mcrypt by originator Mindport) is <u>not</u> one of the encryption systems which these CAM-less, card-less receivers can infiltrate. At least not today. But Irdeto 1, the encryption system in use for segments of Australia, along with numerous other "Version 1" encryption systems, can be accessed if the receiver contains "the right stuff" - *software*.

All of this becomes an unexpected, not anticipated, potential bonanza for sellers of the "X Receiver" because somebody with lots of time on their hands and a number of special skills has created *software* that turns the



SMALL footprint - To modify, a card reader board is installed (typically A$30 cost) and software loaded from Internet sources (through RS232 port).

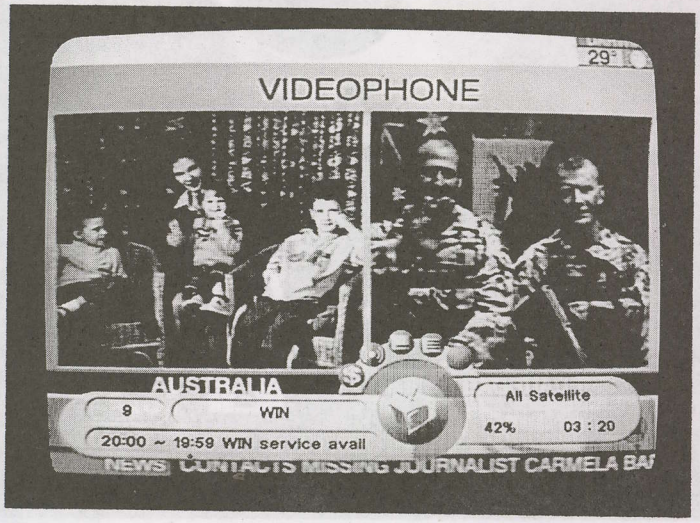


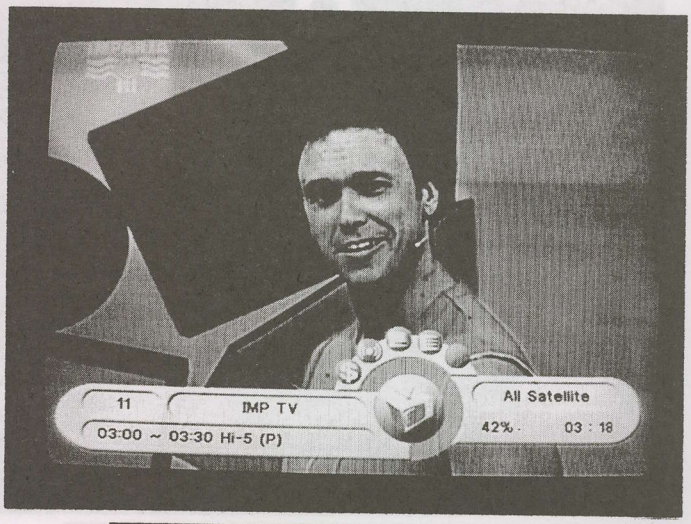
factory-innocent IRD into a lean, mean street machine. In street language, the family car just became a hot rod.

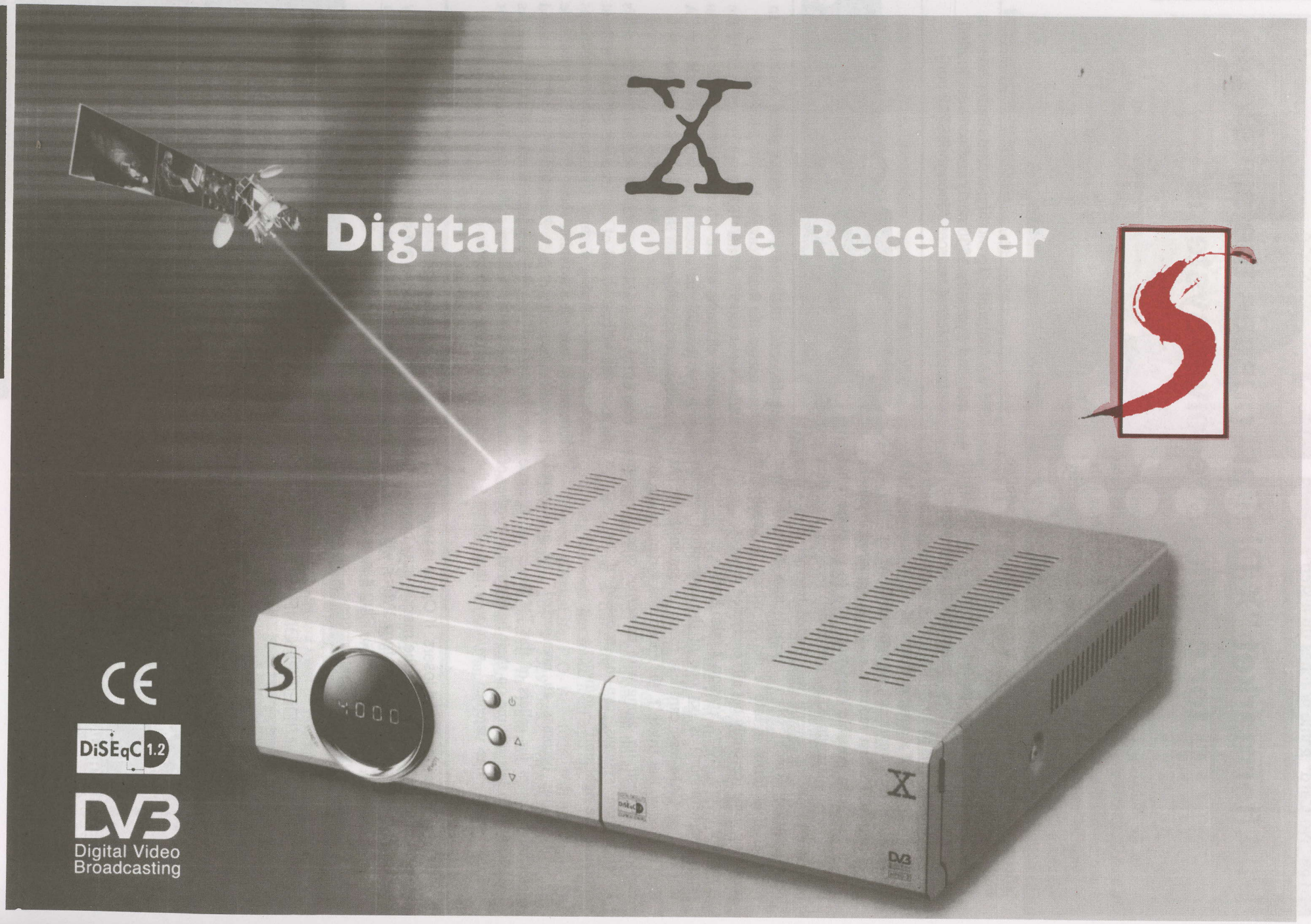
When "street modified" the IRD simply tunes in all of the programme channels loaded whether they are FTA (free to air) or CA (conditional access) provided - *provided* the CA channels are compatible with the "*aftermarket software*."

One of the can-you-believe-this??? capabilities claimed is for complete access to *all* of the Irdeto-1 services, without respect to even owning a card. Unfortunately (or perhaps fortunately, now that we think about it!) the C1 vertical side footprint does not reach New Zealand so SatFACTS enlisted the assistance of a capable engineer in Australia to run checks for us prior to the test receiver showing up in our own Lab for additional testing. His report, *done in Australia,* follows:

POTENTIAL winners and losers. If Optus is unable to straighten out their in-shambles card authorisation system (see "Sound Off" here, p. 28) the market may be forced to "skip that step" making a mockery of the ABA's carefully constructed "out of market" system. Which will have the effect of speeding up the day when Mcrypt replaces Irdeto version "1" in use by Optus. Plug it in and play - WIN (left) and Imparja (right). Yes, it does the <u>full</u> list.






X
Digital Satellite Receiver
CE
DiSEqC 1.2
DVB
Digital Video
Broadcasting

SX Digital Satellite Receiver

- DVB, MPEG-2 compliant
- 4000 channel capacity
- Extended EPG
- Program reservation through EPG
- Teletext decoding
- 8-event timer
- Parental control
- Renameable 8 favorite groups
- 4 sorting modes
- DiSEqC 1.2 USALS
- Picture-in-graphics
- Automatic NIT scan
- Multi language support OSD
- Software upgrading
- Unit-to-unit data transfer

IF SECTION

Input Frequency Range	: 950 - 2150 MHz
Input Frequency Level	: -65 dBm - -25 dBm
Noise Figure	: 12 dB Max.
Input Impedance	: 75 ohm
I.F. Bandwidth	: 36 MHz
Input Return Loss	: -8 dBm
Tuning Step Size	: 125 KHz
Demodulation	: Shaped QPSK
Symbol Rate	: 2-45 Mbauds
FEC Rates	: 1/2, 2/3, 3/4, 5/6, 7/8, AUTO

LNB SECTION

Connector	: F-Type - Loop-through	
Power	: 400 mA Max.	
Polarization	: Horizontal	: DC 16-19 V
	Vertical	: DC 11-14 V
Band (Hi/Lo) Selection	: 22 KHz On/Off	
DiSEqC 1.2 USALS	: 64 Universal LNB Control	

SYSTEM RESOURCES

Processor	: 32 bit (80 MHz)
SDRAM	: 8 Mbyte
FLASH	: 2 Mbyte
EEPROM	: 32 Kbyte

VIDEO SECTION

Decoding	: MPEG-2 & MPEG-1 Compatible
Compression Technique	: Main Profile, Main level
Format	: PAL (NTSC)
Frame Rate	: 25 (30) Hz
Aspect Ratio	: 4:3, 16:9
Active Pixel	: 720 x 576, 720 x 480
Output Impedance	: 75 ohm
Composite Output Level	: 1Vp-p±0.07Vp-p (75 ohm load)
S/N Unweighted	: 57 dB Min.
Frequency Response	: 3 dB Max. (0.5-5.0 MHz)
Data Rate	: Up to 15 Mb/s

AUDIO SECTION

Compression Technique	: MPEG-1, 2 Layer 1 & 2
Sound Mode	: Dual (Main/Sub), Stereo
Frequency Response	: 2.0 dB - 20 Hz to 20 KHz
Output Impedance	: 600 ohm unbalanced
Total Harmonic Distortion	: 1% Max. - 40 Hz ~ 20 Khz

CONNECTORS SECTION

A/V Out	: RCA x 3
RF Out	: IEC Male
Aerial In	: IEC Female
Service Port	: RS-232C (115 Kbps Max.)

MODULATOR SECTION

Output: PAL G/I/K CH : 21-69 UHF

POWER SUPPLY

AC 80-264 V, 47-63 Hz, 40W Max. Power Consumption : 30W Max.

DIMENSIONS

260 (W) x 240 (D) x 58 (H) mm

WEIGHT

1.9 Kg.

E. & O. E.

DISTRIBUTED BY:

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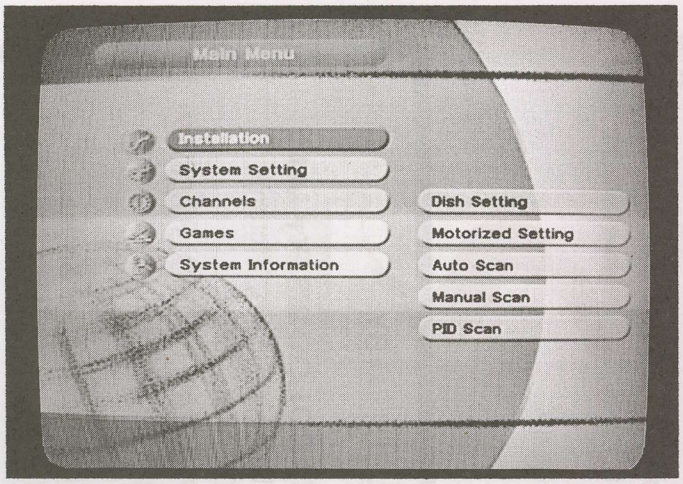
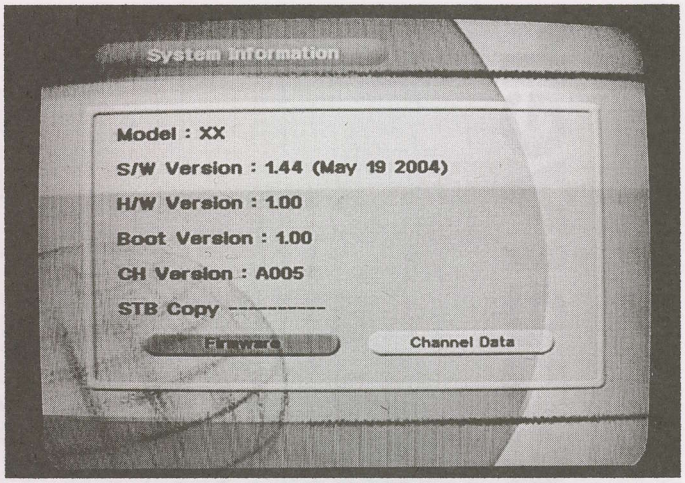




WHOMEVER is responsible for the "card/CAM/code-key-LESS" functions built-in has been clever enough to totally hide the unusual "UCAS Enabled" functions from prying eyes. User/dealer plug-in "card reader" sells in region of A$30, install time under ten minutes. Source? Try John's Electronics (61) 418 698 106.

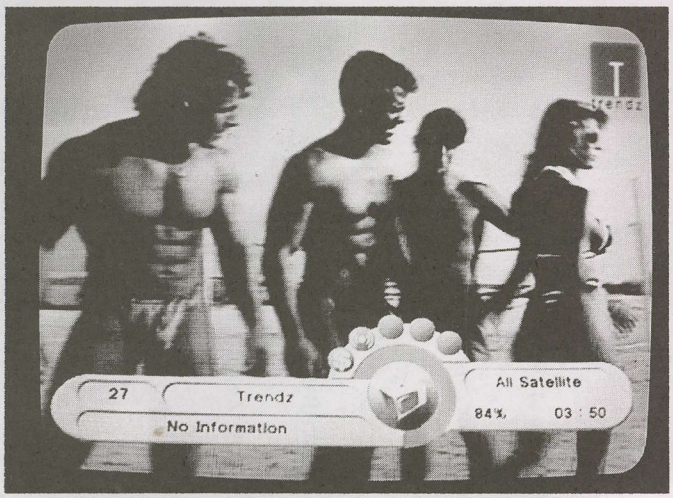
"Out of the box the 'X' only did FTA when switched on. I tested by inserting a NSW locale authorised Optus Aurora card and it worked like any Irdeto-1 compatible receiver would with this particular 'official' card (i.e., no BTV1, BTV2, WIN). *After installing* the smartcard reader, I punched in 4-digit number provided (see John's - above) and the receiver did a quick hic-cup followed by a return to the same reception as prior to entering the 4 digits. I pulled the card out (no card at all) and found I *now had* BTV1, BTV2, WIN *in addition to* the full compliment of other non-pay-TV channels."

No, having a card in place to jump-start the machine was **not** essential as we found with a C-band As3S service when "X" arrived in NZ. When the "X Receiver" arrived at SatFACTS, after loading it using the transponder scan menu, it promptly displayed more than a dozen (CA) channels. Once loaded the receiver reported "Scrambled Channel" *until* we entered the same four-digit code on the RCU; hic-cup and there they were. It is our understanding this is a one time only chore; the software folks tell us it will "auto-update" from now on. And, like other "code-key entry" systems, they provide a "code-key menu" inside (RCU - punch in 8282) for those who are insane enough to "play" with the software.

Some additional notes. Not many IRD manufacturers actually specify the IF (L-band) segment "noise figure." The "X" does: 12 dB for a 36 MHz wide transponder. They also specify the L-band tuner "input return loss" as "-8 dBm" and we *think* they mean the 75 ohm match produces an 8 dB "match factor." If that is what they mean, 8 dB is *not* a very impressive number - quite contrary to a 12 dB noise figure (which *is* impressive). We found the overall sensitivity (ability to lock onto and hold a weak transponder before tiling/glitching) remarkably good - *easily the best* we have seen from *any* (digital) receiver. We will look into this further in a future issue to see if it stands up to "front-end analysis."

Teletext? Yes. EPG? Yes. DiSEqC? Yes - 1.0, 1.1 and 1.2 USALS. Auto NIT scan? Yes. Timer? 8 event. NTSC/PAL? Yes - Auto. Picture in graphics? Yes. Renameable favourite channel groups? 8. Multi-language OSD? Yes; 10 languages. Smartcard reader? Yes (extra). Last channel recall? Yes. UHF Modulator? Yes - PAL G/I/K channels 21-69 (471.25 through 855.25 MHz). PID entry/scan? Yes. Satellite scan? Yes, as factory loaded or manual (not blind scan). Factory reset? Yes - *but watch it* - may wipe out "aftermarket software!" Edit/Move/Skip/Delete? Yes. L-band loop? Yes. Power consumption? 30w max claimed. Warranty? Factory, 12 months. Source: Australia - Strong Technologies (61-3-8795-7990); NZ Hills (64-9-262-3052). Pricing? A$220 region *suggested list* less recognised dealer discount, plus alternate sourced card reader (see above - John's).

ASIANS? Again, no problem. As long as the CA system is a "Version-One" format (Alpha CAM, Conax, Cryptoworks, Irdeto, Nagravision, or Viaccess), the X2 "aftermarket" version should do the decoding. (However, the "X" is so new that this review is the first to appear anyplace in the world and additional tests in Europe, North America will be required to know the limits - *if any* - of the software; reportedly, it does "the rest" as well.)



TECHNICAL TOPIX

PowerVu oddity

Users of the PowerVu D9223 are a legion of tough folks who put up with an uncommon amount of heat, frequent power supply failures, indifferent factory support and outrageous charges for both transport to repair (US$150 - both ways!) and any work done (including loading a new software program in an older receiver - US$150 again). But if your contract service is in PowerVu - well, you ain't got no choice but to swallow and send along your credit card information.

Our Far North Cable TV CNN receiver, for PAS-8, suddenly quit. But not in the normal fashion (the power supply was still functional). In the normal processing mode, the receiver display read "No signal" when in fact in the installer or tune-mode the signal was "Locked" and displaying suitable numbers (error rate XX-E4, signal level 59, AFC 0). But the installer or tune mode is in virtual channel number 0 ("zero") and once you have a signal "locked and loaded" in that mode, you punch the "View" button, then select the appropriate "Channel" position with the front panel button. Our CNN from PAS-8 comes up on channel 1. Switch there and the receiver advised, "No signal." A lie of course. Plenty of signal, even lock. Just no display.

This one looked like a software mod (there goes US$150 times 2 for transport, and another US$150 for a "factory" reload) plus who knows how much they will charge to "bring the receiver up to date." Owning a SA receiver is a bit like subscribing to Foxtel; the costs just keep going up!

Enter a subset menu, one seldom accessed except by folks who have run out of field options. The advice to do this came from Darius West, Cable and Satellite Electronics Services Pty Ltd (Email darius@cases.net.au; telephone 61-2-9792-1421).

"Can you try setting the tune mode to non-PowerVu and letting me know if it locks onto signal, even though you may not get a picture? I assume you know the code - Menu, User, Next, Yes."

Buried deeply inside a D9223 is a choice - will it process PowerVu signals (which are unique to SA encrypted services), or, will it by menu decision process MPEG-2 (FTA) services (i.e., non PowerVu)? A D9223 of a very early variety, and the predecessor D9222, did not have this option. It was PowerVu or - nothing.

Darius was suggesting that the cause of our failure to switch from "Lock" and "Signal" in the tune mode to "No signal" (lying piece of crap IRD!) was a software fault. Switching to "Non-PowerVu" would tell us, and him. We did this expecting at most to see it stay "locked" or loose lock.

Surprise. In the non-PowerVu mode, suddenly CNN was back. Yes, of course it is PowerVu. No, it should *not* work this way. So back to Darius with a report, expecting some sort of "Holy Cow! That is amazing" response. Wrong.

Darius: "This is not unheard of; I know quite a few people who are using the decoder in this setting and it is a fault which has developed in your unit. Sometimes a software reload will correct the problem and sometimes the only way is to exchange the motherboard. However, if it is going now, it should be fine as long as you use the decoder for one channel at a time, which suits your particular application. If it does fall over again, you will need to send it to us for further investigation."

Which is the end of this report. It runs in "Non-PowerVu" and it captures and displays PowerVu format CNN from PAS-8 - and we are not about to touch anything!

Intermod at the modulator

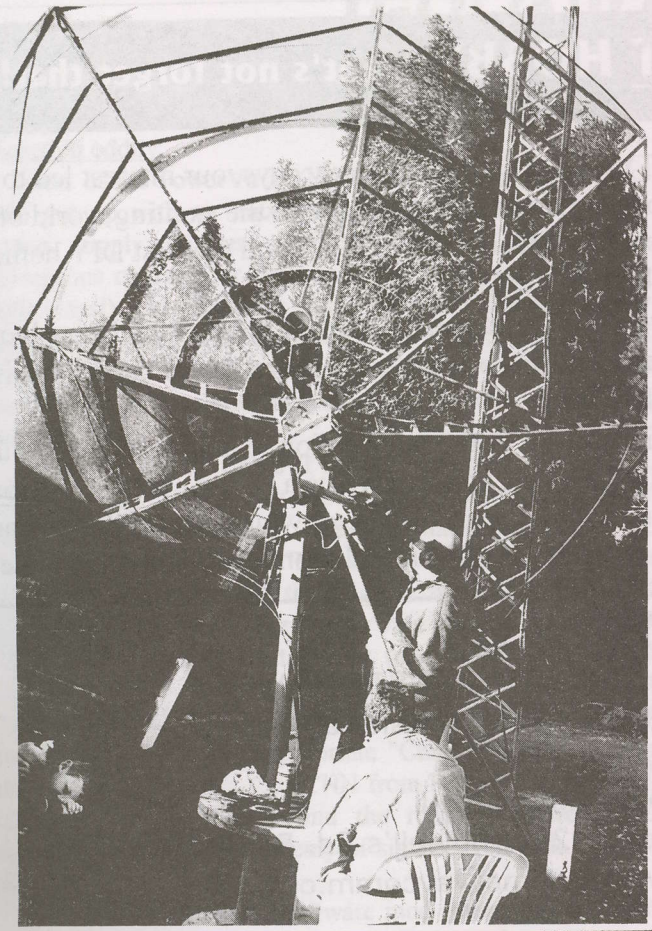
Recently a TV modulator in our system displayed an odd quirk; drifting behind the desired video was a separate set of syncs including a frame bar and if one stared at it long enough, you could pickout occasional bits of video image. As this was at the headend of the distribution system, the first test was at a -20 dB output test jack on the modulator. *Clean video.* That would seem to eliminate the modulator proper. Next check was in the 12 channel combiner where this modulator (on 69.25 MHz) was joined by 11 others for single cable combining. The combiner's test jack showed the same artefact suggesting the combiner was creating the unwanted drifting video frame. One by one, briefly, each of the other 11 channels going into the combiner was disconnected and then quickly replaced. No luck - unless there were *two* (or more) channels "mixing" internal to the combiner to create the drifting frame bar overlay, this was not going to locate the problem.

Perhaps the extra video was coming into the modulator via a video line that had lost its shield? But if this was true, why wouldn't the -20 dB modulator test point show the same extra image? Running the output level control up and down over a 20 dB (RF output) level range did not change anything - even at low outputs the extra video remained. Which pointed back at the combiner again.

Perhaps if the modulator was disconnected from its combiner and plugged briefly into another combiner the artefact would go away? Disconnecting the F6ARS connector from the modulator output revealed the cause; the (Winersat WCM-300) single channel modulator's output F fitting was loose. The chassis mounting F fitting, through which the output flowed, was several nut turns short of being physically tight. The fitting was floating inside of the rear chassis hole and when it made good contact, no floating image. But when it was not properly grounded (by the loose F connector nut) on the outside of the case, the connector was acting like a "demodulator" rectifying the output signal and then dropping it back into the fitting-system as an unwanted and very annoying (reverse image) frame bar on top of the actual output level.

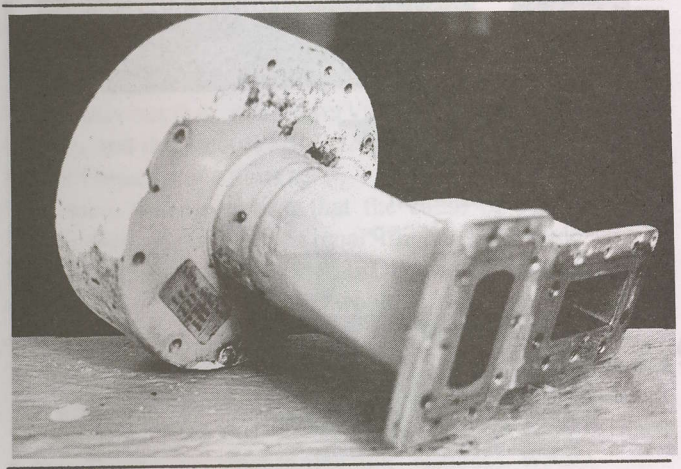
There had been a clue here - not recognised until after the problem was found. The output level of that channel had been acting erratic, OK when the chassis mounting fitting touched the aluminium case, down by as much as 10 dB when the fitting was 'floating.' Check how tight the nuts are on your output F fittings - when loose, some strange things can happen!

Still screwing around with NA

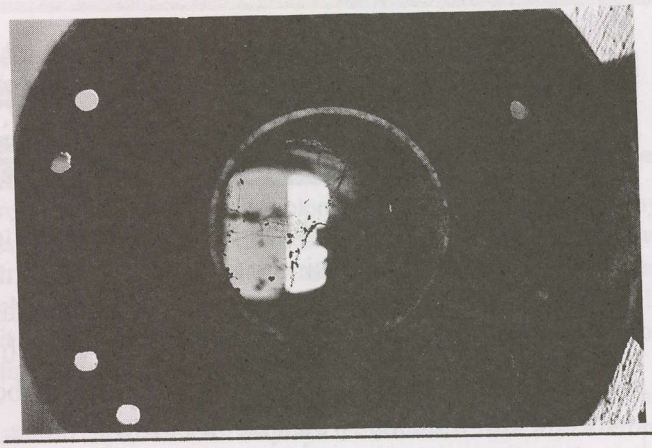


This Paraclipse (4.2m) mesh dish is a step-up from our 135W/127W previous SatFACTS tests with a Patriot 3m. Well, sort of. Notice this dish is significantly (25-30%) surface-blocked by bamboo (and Radiata Pine) at the 135W elevation/azimuth setting shown here. We found more signal (by 1 dB average) than the 3m suggesting our blockage loss is in region of 1.5 dB. Our hunt for a suitable 7m or larger continues!

This dish, previously on PAS-2, had an ADL dual mode (vertical and horizontal) hybrid feed on it. And it was totally sealed up tight (front plastic cover, LNBs on both vertical and horizontal ports).



Like any 8 year old never-touched feed it had "weathered" (above) but otherwise appeared pretty much as when-new in 1996. Appearances can be deceiving. In fact, when the LNBs



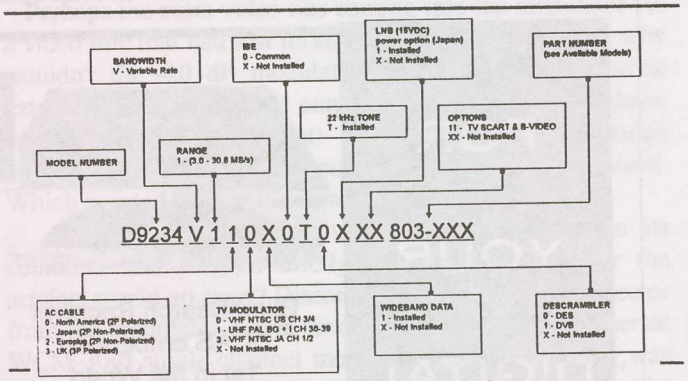
were removed, the inner throat area (through which the C-band microwave signals flow) was "dirty" - a collection of multiple spider webs, dead bugs, and corrosion attaching to the inner surface of the waveguide "pipe." So - how did a "spider colony" get through the physical barriers to set up housekeeping inside? More to the point, if they got inside (somehow), how did the dead carcass shells of other bugs get trapped and be brought inside to feed the colony???

Memo to self: "*Check the interior of feeds more often than once every 8 years!*" Yes, those dead bugs do adversely affect 4 (and 12) GHz signals trying to flow past their remains!

What use D9234?

"I have been offered a large quantity of Scientific Atlanta model D9234 PowerVu 'Business Satellite Receiver' for well under A$100 each; ex the PAS-2 Ku service that used to supply WIN, GWN, ABC et al to Western Australia. Lacking that service, how can they be used?"

HJJ, SA



Nothing fuels experimentation like a $50 net cost "bargain" receiver! First, identify what version (there are many) you have (see above). Note it is capable of Sr 3.0>30.8 with a variety of LOs. The bad news is that unlike the larger version D9223 (et al) series there is apparently no way to make it function on MPEG-2 DVB free to air services. Moreover, the D9234 is a single transponder receiver - determined by the parameters you enter. It will recover programming from two or more transponders only when the NIT is employed. This means the primary and intended use, full-time reception from a single programme service or a single MUX/NIT, is a major limitation.

If someone has discovered (or will in the future work out) how to use this on DVB compliant services, that will increase the utility but lacking a "memory core" for switching between non-related services, it will remain a single function IRD.

SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 July 2004

Bird	Service	RF/IF &Polarity	# Program Channels	FEC	Msym	Receivers and Errata
Thcm3/78.5	SkyChAust	3695/1455H	up to 3	3/4	5(.000)	CA (#1, 3); FTA audio #2 (dm)
	Korean Central	3665/1485H	1	2/3	3(.367)	Global footprint; changes 02/03.
	TARBS ME mux	3640/1510H	12TV, 12 radio	2/3	28(.066)	CA + 2 FTA(A1TV, IRB3)(
	Ch Nepal	3626/1524V	1	3/4	15(.556)	New 03/03; FTA
	Mahar mux	3600/1550H	11TV, 1 rad	3/4	26(.667)	Thai + Indian services; FTA
	SE asia Mux	3569/1581H	2+ TV	3/4	12(.500)	MRTV3, MRTV (DM)
	RR Sat mux	3551/1600H	8TV,10 radio	3/4	13(.333)	3TV, 5radio currently in use
	JAIN TV	3538/1612V	1TV	3/4	3(.300)	PIDs 4132/4133
	PTV1 +	3521/1629V	1TV, 1 radio	3/4	3(.333)	frequency change
	TARBS	3520/1630H	12TV, 12 radio	3/4	28(.066)	Feeds to TARBS Australia and PAS-8
	TVK Cambodia	3448/1702H	1TV	1/2	6(.312)	**FTA**
	TARBS/Th5	3480/1670H	12 TV+radio	2/3	26(.667)	**3FTA**: TV5, VTV4, ATN Bangla
	KCTV/Korea	3424/1726H	1TV	3/4	3(.366)	Not 24 hour; FTA?
	Thai Global	3425/1725V	up to 7?	2/3	27(.500)	FTA (reaches SE Australia)
InSat 2E/83	**ETV mux**	4005/1145V	6+ TV	3/4	27(.000)	Several ETV now here; wide beam
	Hyd Dig 2E	3910/1240V	1	3/4	5(.000)	SCPC, OK E. Aust. wide beam
	Kairali TV	3699/1451V	1	3/4	3(.184)	SCPC, OK E. Aust wide beam
	Indian mux	3643/1507V	3	3/4	19(.531)	corrections 12/02
	ETV Mux#2	3485//1665V	4+TV	3/4	27(.000)	Several new ETV here; Asia beam
	Sky Bangla	3430/1720V	1TV	3/4	6(.000)	New - November 2002
NSS6/95E	Free-X TV, plus	12.729V-Australia	5+TV	7/8	27(.500)	Require authorisation: sales@bluekiss.biz; some fta
As2/100.5E	**Euro Bouqt**	4000/1150H	6TV, 21r	3/4	28(.125)	FTA TV + radio; TV5 Asie moved "down" April
	Reuters News	3905/1245H	1TV	3/4	4(.000)	Was 3923H; sometimes **FTA**
	WorldNet	3880/1270H	4+/28radio	1/2	20(.400)	FTA; multiple audio services V2360, A2320
	APTN Asia	3799/1351H	1	3/4	5(.632)	Sometimes **FTA**; also 3895Vt
	Reuters/Sing.	3775/1375H	1	3/4	5(.631)	**FTA** & CA
	Egypt/Nilesat	3640/1510H	7+, radio	3/4	27(.850)	Thru TARBS Aust, occ. **FTA**
As2/100.5E	**Macau MUX**	4148/1002V	5TV	3/4	11(.850)	5 chs TV, FTA, some tests
	Feeds	4086/1064V	1	3/4	5(.632)	FTA SCPC feeds
	Dubai MUX	4020/11430V	4+, radio	3/4	27(.500)	FTA , EurteSport PID change (1213/1313) June
	Fashion TV	3795/1355V	1	3/4	2(.626)	FTA as of May 1, 2003
	3-ch miniMUX	3752/1398V	up to 3	3/4	5(.640)	Sun-TV, Surya TV, KTV (FTA)
	Saudi TV1	3660/1490V	7+/tests	3/4	27(.500)	FTA MCPC; Yemen, MBC EUROsport tests
As3S/105.5E	Telstra I-Net	12.596V	no TV	5/6	30(.000)	Signal useful for dish testing - no TV
	RR Mux	3669/1481V	up to 5 TV	3/4	13(.333)	Bluekiss adult here; CA cards sales@bluekiss.biz
	Zee bouquet	3700/1450V	10TV	3/4	27(.500)	Mediaguard + Conax CA; 2 occ FTA
	Ch News Asia	3706/1444H	1TV (+)	3/4	6(.000)	New September 2003; English + V1160, A1120
	BTV World	3725/1425V	1TV	3/4	4(.450)	Bangladesh TV FTA started early March 2004
	SAB TV	3743/2407V	1TV	3/4	3(.300)	
	Arirang TV	3755/1395V	1	7/8	4(.418)	FTA SCPC; New PIDs V3601, A3606 June 2003
	New TV +	3760/1390H	up to 8TV	7/8	26(.000)	CA + NOW, B'berg, Indus Music, MTA **FTA**
	Star TV	3780/1370V	7(+)TV	3/4	28(.100)	NDS CA (Pace DVS211, Zenith)
	GXTV	3806/1344V	1TV + 3 radio	3/4	4(.420)	Guangxi TV; was As2
	Shaanxi TV	3813/1337V	1TV + 2 radio	3/4	4(.420)	Was As2
	Anhui TV	3820/1330V	1TV + 2 radio	3/4	4(.420)	Was As2
	Jiangsu TV	3827/1330V	1TV + 2 radio	3/4	4(.420)	Was As2
	HLITV	3834/1316V	1TV	3/4	4(.420)	Was As2; HeiLong
	Star TV	3840/1310H	7(+) TV	7/8	26(.850)	NDS CA (Pace DVS211, Zenith)
	Star TV	3860/1290V	5(+)TV	3/4	27(500)	NDS CA (Pace DVS211, Zenith)
	AbuDhabi MUX	3880/1270H	8+TV, 2Radio	3/4	27(.500	New April 2004: link to Optus B3 Globecast
	Dragon TV	3886/1264V	1 TV	3/4	4(.800)	Shanghai
	Shaandong	3895/1255V	1TV + 6 radio	3/4	6(.813)	Apparently Mongolia; was As2
	Jilin TV	3914/1236V	1TV + 1 radio	3/4	4(.420)	Was As2
	Star TV	3920/1230H	4+ TV	7/8	26(.850)	Star Sports Asia (+), **FTA** NTSC; V512, A640 English
	Star TV	3940/1210V	6(+)TV	7/8	26(.850)	NDS CA as above; may NOT be operational
	CNNI	3960/1190H	8(+)TV	3/4	27(500)	PowVu CA; new SR Apr 29; CNN radio **FTA**
	StarTV	3980/1170V	6+TV	3/4	28(.100)	NDS CA; Star News India **FTA** VPID 514, APID 648
	Star TV	4000/1150H	8(+)TV	7/8	26(.850)	NDS CA w/ **4(Chinese) FTA**
	Sahara digital	4020/1130V	8TV	3/4	27(.250)	New Sr September
	Hubei TV	4035/1115H	1TV + 2 radio	3/4	4(.420)	Was As2
	Sichuan TV	4051/1099H	1TV + 1 radio	3/4	4(.420)	Was As2
	Qinghai TV	4067/1083H	1TV + 2 radio	3/4	4(.420)	Was As2
	Hunan TV	4082/1068H	1TV + 1 radio	3/4	4(.420)	Was As2
	Pakistani TV	4091/1059V	4TV, 1 radio	3/4	13(.333)	new Sr, channels, Nov 2003
	Sun TV	4095/1055H	1	3/4	5(.554)	"History Channel" - SCPC
	TVB8 Mux	4110/1040H	3	3/4	13(.650)	**MATV Chinese movies FTA** +CA; new Sr 05-04
	Indus News	4115/1035V	1	3/4	3(222)	Hindi (+ "Plus")
	CCTV bqt	4129/1021H	4(+) TV	3/4	13(.240)	moved from 4115
	Zee Bqt #2	4140/1010V	8(+) TV	3/4	27(.500)	Mediaguard (SECA) CA
	Henan TV	4166/984V	1TV + 4 radio	3/4	4(.420)	Was As2
	Fujian TV	4180/970V	1TV + 2 radio	3/4	4(.420)	Was As2
	Jiangxi TV	4187/963V	1TV + 2 radio	3/4	4(.420)	Was As2
	Liaoning TV	4194/956V	1TV + 2 radio	3/4	4(.420)	Was As2
Cak1/107.5	Indovision (S-band)	2.535, 2.565, 2.595, 2.625, 2.655	33(+) TV	7/8	20(.000)	NDS CA using RCA/Thomson, Pace IRDs; **2.535 has 2 FTA**
T'Kom/108E	**IndoBqt**	3460/1690H	up to 6	3/4	28(.000)	also 3586H/17.500, 3496H/19.615
C2M/113E	**TPI**	4185/965V	1	3/4	6(.700)	FTA SCPA; NT/NC only
	TVE Asia-Africa	4160/990H	1	3/4	5(.632)	New August 2003
	Anteve	4144/1006V	1	3/4	6(.510)	change from 4055V; FTA SCPC
	Indo Mux	4080/1070H	5+ TV	7/8	28(.125)	Global TV - erratic new FEC 06/03
	Indostar	4074/1076V	1	3/4	6(.500)	FTA (new 06-03); V2201, A2202
	SCTV	4048/1102V	1	3/4	6(.618)	FTA SCPC; NT, New Caledonia only
	Indonesian Mux	4000/1250H	6+ TV	3/4	26(.085)	unstable platform - not always there
	Satelindo	3935/1215H	1	3/4	6(.700)	test card - only - reported
	Bali TV	3926/1224H	1	3/4	4(.208)	FTA, may not be active full time
	Indo MUX	3880/1270H	3+ TV	7/8	28(.121)	FTA; Sr change 01/03; erratic
	Global MUX	3760/1390H	up to 11 TV?	7/8	28(.121)	frequent changes; often only test cards

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym	Receivers and Errata
	Brunei/Sing	3733/1417H	1TV	3/4	6(.000)	FTA ; Singapore 23hrs, Brunei 1 hr;Brunei V1200
	RCTI	3473/1677H	2	3/4	8(.000)	FTA SCPC; Australia, New Caledonia, some English
As4/122E	**STV mux**	38801270H	8 or more	3/4	26(.500)	First TV mux to appear this new bird; erratic service
Jc3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(.000)	PowerVu; some FTA (Ch. 1 & 3)
	Asian bqt	3960/1190V	up to 8	7/8	30(.000)	CA & **FTA** NTSC: Japan, Taiwan
Jc2A 154	**BYU-TV**	3915/1245V	1+languages	3/4	4(.166)	Erratic service; strong NZ & Australia
MeasSs2	**Astro Mux**	11.602H	up to 17TV	3/4	41(.500)	Aust East beam - **3 FTA** + 14 CA
	VTV MUX	11.522V	3 TV	3/4	9(766)	WA only? Skew path, intended Asia
B3/152	Optus tests	12.407V	4+ TV, 4+ radio	2/3	30(.000)	now differs from 12.407 C1; **tune ch FTA**
	GlobeCast tests	12.501H	MultipleTV, radio	3/4	30(.800)	Nat B beam; unusual parameters-wrong NIT
	Globecast tests	12.525V	8+ TV, radio	2/3	30(.000)	GlobeCast; frequent programming changes
	Sydney Racing	12.564H	1+ TV	2/3	30(.000)	Competitor to TAB; **FTA** but not for long
	Globecast Main	12.657V	8+ TV	2/3	30(.000)	Globecast "home" 1 February; temporary?
	WA/NT mux	12.688H	3TV, radio	2/3	30(.000)	GWN, WIN, ABC NT have been FTA here
	Aurora tests	12.701V	1+ TV, radio	7/8	14(.288)	ABC WA tests, FTA
	Aurora tests	12.720V	4TV, radio	5/6	12(.600)	SBS, radio tests WA FTA
	WA tests	12.738V	2TV, radio	7/8	14(.295)	Irdeto V2 CA, tests (GWN, WIN)
C1/156E	Optus testbed	12.290V/T1L	9tv, 24 radio	1/2 (*)	30(.000*)	testing late May; * - may be temp #s; on and off
	Optus test bed	12.324V/1U	mixed	1/2 (*)	19(.530*)	testing late May;*-may be temporary numbers
	Unknown test bed	12.367V/T2	TV+	2/3	27(.800*)	Tests; not always operational; NDS only? SBS.
	Aurora Biz	12.407V/T3	TV + radio	2/3	30(.000)	NZ (90cm) + Australia (**Only svc left on NZ; C1**)
	Pay-TV	12.447V/T4	varying # TV services	3/4	27(.800)	Australia NA only (leakage to Norfolk, New Cal)
	Unknown test bed	12.487V/T5	TV+	3/4	23(.333)	Australia NA only (leakage); 9-Net x 3 widescreen
	Pay-TV	12.567V/T7	varying # TV services	3/4	27(.800)	Australia NA only (leakage to Norfolk, New Cal)
	Pay-TV	12.607V/T8	varying #TV services	3/4	27(.800)	Australia NA only (leakage to Norfolk, New Cal)
	Pay-TV	12.647V/T9	varying #TV services	3/4	27(.800)	Australia NA; has unique NIT
	Austar	12.278H/T11	varying TV + data	3/4	30(.000)	CA, subscriptions available Australia, Norfolk
	Pay-TV	12.358H/T12	varying #TV services	3/4	27(.800)	CA, subscriptions available Australia, Norfolk
	Pay-TV	12.398H/T13	varying #tv services	3/4	27(.800)	CA, subscriptions available Australia, Norfolk
	Pay-TV	12.438H/T14	varying #TV services	3/4	27(.800)	CA, subscriptions available Australia, Norfolk
	Pay-TV	12.478H/T15	varying #TV services	3/4	27(.800)	CA, subscriptions available Australia, Norfolk
	Pay-TV	12.518H/T16	varying #TV services	3/4	27(.800)	"Home"CA, subscription available Australia, Nrflk
	Pay-TV	12.558H/T17	varying #TV srvices	3/4	27(.800)	CA, subscription available Australia, Norfolk
	Pay-TV	12.638H/T19	varying #TV services	3/4	27(.800)	
B1/160	Occ. feeeds	12.380H	1 TV - *	3/4	6(.111)	* - plus 12.451H, 12.460H
	Occ. feeds	12.384V	1 TV - *	3/4	6(.111)	* - plus 12.293V, 12.402V, 12.411V
	Net 7 service	12.397H	1	3/4	7(.200)	Full schedule less commercials - links; may be CA
	Net Ten	12.353H	1TV + 1 radio	3/4	5(.100)	Possibly feed to Tasmania?
	Imparja mx	12.379H	2TV + 8 radio	3/4	5(.424)	PIDs vary; also try 12.360, 12.370
	7 digital feeds	12.397H	1TV	3/4	7(.200)	occ. digital feeds; typ fta
	Feeds to NZ	12.411V	1 TV	3/4	6(.111)	Often NTSC; USA-Australia-NZ
	SBS Mux	12.420H	3+ TV, 2+ radio	5/6	12(.600)	Also 12.420H same params; SBS HDTV + w-s
	TVNZ DTH	12.456V	5+TV	3/4	22(.500)	FTA 4 channels (TVNZ x 4); +Maori here
	Nine Net	12.512H	1 TV typ.	3/4	5(.632)	testing digital feeds; Sr may vary
	Sky NZ	12.519/546V	7TV/7TV	3/4	22(.500)	NDS CA, subscription available NZ
	Sky NZ	12.581/608V	6TV/6TV	3/4	22(.500)	NDS CA, subscription available NZ
	Sky NZ	12.644/671V	9TV	3/4	22(.500)	NDS CA, subscription available NZ
	ABC HDTV	12.603H	5TV	7/8	14(.300)	also 12..626,.643,.670, 688, & 706H
	Sky NZ	12.707/733V	8+TV	3/4	22(.500)	NDS CA, subscriptions available NZ
	Mix 106.3	12.574H	1 radio + data	3/4	1(.851)	Radio SCPC is "cover" for high speed data
P8/166	TARBS3	12.326H	13TV + radio	3/4	28(.066)	TPG/EurodecMDS CA, **occ. FTA**
	TARBS	12.526H	13TV + radio	3/4	28(.066)	TPG /Eurodec MDSCA, **1 radio FTA**
	TARBS2	12.606H	13TV + radio	3/4	28(.066)	TPG/Eurodec MDS CA
	TARBS5	12.646H	testing	3/4	28(.066)	TPG/Eurodec MDS CA; **2 TV FTA**
	TARBS4	12.726H	13TV + radio	3/4	28(.066)	TPG/Eurdec MDS CA
	JEDI/TVB	12.686H	11+ TV	3/4	28(.126)	June 2002-Irdeto-2 CA
	ABC A-P	4180/970H	2TV, 2 radio	3/4	27(.500)	Dateline west; also east PAS2, 3901V
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(.125)	PowVu CA
	NHK Joho	4060/1090H	7TV, 1 radio	3/4	26(.470)	PowVu CA & **FTA**; subscription available
	FOX Mux	4040/1110V	up to 5TV	7/8	26(.470)	was PAS-2, previously 3992Vt; **feeds FTA**
	NET +	4121/1029V	1 TV	3/4	4(.774)	NET25 + FTA; new PIDS April '03; reload
	ESPN USA	4020/1130H	8+TV, data	3/4	26(.470)	PowVu CA; ch 11 DCP-CCP bootload; audio **FTA**
	Discovery	3980/1170H	8 typ.	3/4	27(.690)	PowVu/CA (some audio **FTA**)
	CalBqt/Pas8	3940/1210H	up to 3+ FTA	7/8	27(.690)	PowVu CA & **FTA (EWTN +)**
	CNBC HK	3900/1250H	up to 7TV	3/4	27(.500)	NDS CA (6 channels); one test card FTA
	FilipinoMUX	3880/1270V	up to 8TV+radio	5/6	28(.694)	**Myx FTA** V1960, A1920 + radio FTA
	TaiwanBqt	3860/1290H	12TV + 30 r	5/6	28(.000)	Mixed **FTA** & CA; STCgone
	CCTV Mux	3829/1321H	up to 4 + 1 radio	3/4	13(.240)	PowVu FTA, replaces PAS-2 svc
	TVBS-N	3836/1314V	**1FTA**, 4+ CA	3/4	22(.000)	Difficult because of CCTV cross pole
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(.632)	was As2; PowVu CA
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(.000)	PowerVu; some audio **FTA**
	Discovery Asia	3764/1386V	Up to 6 TV	3/4	19(.850)	PowerVu; Asian MUX; new parameters Nov '03
	MTV	3740/1410H	8	2/3	27(.500)	# 8 **MTV China FTA V289, A290;** rest CA
	ABS-CBN APT	3712/1438V	1	3/4	3(.712)	24/7 English track 2 news; V4096, A4099 11-03
P2/169E	WA Mux Pv	12.281V	3+ TV, radio	2/3	27(.500)	PowVu CA, WIN, ABC NT, SBS; status unknown
	Ariang TV	12.401V	1TV	3/4	4(.400)	Test - may not stay permanently
	ABS-CBN	12.575H	4TV, 2 radio		13(.845)	Temp **FTA**; will be CA, subs 011-800-2270-0722
	NBN	4126/1024V	1TV	3/4	3(.075)	May not be permanent; not available to NZ
	TARBS	4090V/1060V	9TV + radio	3/4	21(.000)	Occ **FTA** (Chile +); BIG power reduction Nov 03
	Feeds	4027/1123H	1+TV	2/3	6(.620)	Sporting feeds from USA (occasional)
	Feeds	3957/1193V	1	2/3	6(.620)	PowVu (FTA) occ. feeds
	Feeds	3929/1221V	1	3/4	10(.850)	PowVu (FTA) occ sport feeds
	Feeds	3912/1238V	1	2/3	6(.620)	PowVu(FTA) occ. feeds
	Feeds	3898/1252V	1	2/3	12(.000)	PowVu (FTA) occ. feeds
	Middle East	3836/1314V	4 typ	3/4	13(.331)	**Irdeto 2 CA - subscriptions avail; Strong Tech**
	Feeds	3803/1347V	1	3/4	6(.000)	PowVu (FTA) occ sport feeds inc. Japan BB
	PAS/**BBC** mux	3744/1406V	3	3/4	21(.500)	**BBC, test card FTA**, others nominally CA

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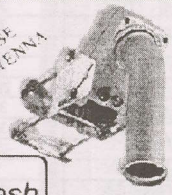

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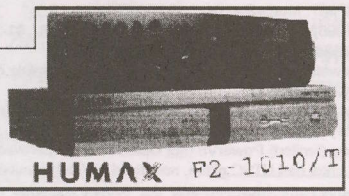

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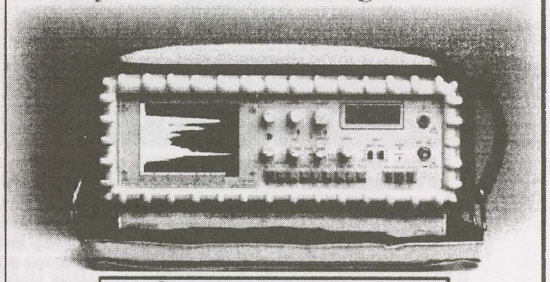

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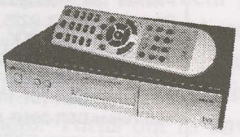

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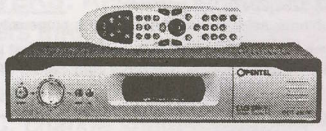

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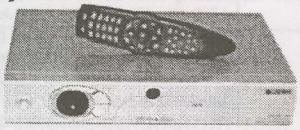

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Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS2/169E)	**Adventists.tv**	4040/1010H	1	2/3	5(.900)
	Feeds	3868/1182H	1	2/3	6(.620)
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(.620)/7(.498)
	Cal PowVu	3901/1249H	up to 8	3/4	30(.800)
	HK bouquet	3850/1300H	up to 8	2/3	24(900)
	Korean Bqt	3771/1379H	1	3/4	9(.041)
I804/176E	**iPSTAR**	12.619H	1	2/3	25(.220)
	Tests-NZ beam	12.646H	1	3/4	22(.418)
	RFO Poly	4027/1123R	1TV	3/4	4(.566)
I701/180E	TNTV	11.060&11.514	9	3/4	30(.000)
	Canal+Sat	11.610H	16TV, 1 radio	3/4	30(.000)
	TARBS Pacific	12.691H	16TV possible	3/4	28(.066)
	TVNZ/BBC	4186/964RHC	1	3/4	5(.632)
	TVNZ	4178/972RHC	1	3/4	5(.632)
	AFRTS DTS	4175/975L	3 TV, 3 radio	2/3	3(680)
	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(.041))
	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)
	NBA (Barker) Ch	3803/1347R	1	3/4	6(.111)
	10 Australia	37691381R	4	7/8	20(.000)
	USA feeds	3749/1401R	4?	?	26(400)
NSS-5/177W	Pacific IP Data	3745/1405R	none-date	3/4	44(.995)
	iPSTAR Tests	12.700V	8+ TV		

Receivers and Errata
New December 2003; 24/7 "Hope Chs."
FTA (occ sport); also try 3863,Sr6.100
FTA-typ NTSC-occ sport, live Shuttle
PowVu CA + **FTA** (BBC gone)
was 4148Vt; some **FTA**
Korean MUX, reload 02/03
Tests, late May start; also 12.646H
Testing possible data links; June 2003
SE spot beam; was 4027LHC
east spot; 10TV + r each, vertical pol.
1+ **FTA**, MediaGd "2"; + 10.975 weaker
Testing Fiji region pay-TV package (June 2004)
DMV/NTL early vers. occ feeds, typ ca
DMV/NTL early vers., occ feeds, typ ca
*DTS Direct to Sailors; audio previously FTA - no more
DMV/NTL early vers. occ feeds, typ ca
DMV/NTL early vers., occ feeds, typ ca
east hemi 20.5 dBw +; new Sr
DMV/NTL early vers.,occ feeds, typ ca
SCPC, mixed CA and **FTA** feeds
PowVu CA; Auckland net feeds
CA, Leitch encoded
New PIDs Dec 03 very strong NZ, Pacific
FTA SCPC; East Hemi Beam-Tahiti
SCPC, mixed CA & **FTA**, feeds
NBA feeds - probably CA - new Nov 2003
PowVu CA & **TBN-JCTV FTA**
16-QAM (not MPEG-2 compatible)
Data only but useful for dish alignment, top Sr check
Tests - Taiwan TV but only temporary; data coming

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

Aston Simba 201. Embedded SECA (Zee, Canal +); review SF#97. MediaStar 61-2-9618-5777.
AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. Av-COMM P/L, 61-2-9939-4377.
AV-COMM R3100(A). FTA, good sensitivity, ease of use exc (review SF May 2002). See above contact.
Coship 3188C. Review SF#107. Blind search FTA rcvr; works well. Available from Satlink NZ www.satlinknz.co.nz (**ONLY** KNOWN DISTRIBUTOR IN WORLD)
Divitone: "Left-handed" review SF#115; does "code key" entry. Available http://www.satmax.ws
eMTech eM-100B (FTA), eM-200B (FTA + Cbx2), eM210B (FTA + 2xCI + positioner); KanSat 61-7-5484 6246 (review SF#89)
Fortec Star Lifetime. Two versions, both blind search, code-key programmable, one X 2 CI. Review SF#119. www.aDigitaLife.com
Humax F1-CI. Primarily sold (originally) for TRT(Australia), does (limited) PowerVu (not Optus Aurora approved); not desirable.
Humax ICRI 5400 (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76.
Humax IRCI 5410 (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq (www.sciteq.com.au).
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.
INNOVIA IDS3088. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix Technologies, and Satmax (http://www.satmax.ws).
ID Digital CI-24 Sensor. New August 2003; new lower noise tuner, extra sensitivity; CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.
MediaStar D7. FTA, preloaded w/ known services, exc. software (review SF July 1998). MediaStar Comm. 61-2-9618-5777
MediaStar D7.5. New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777
MediaStar D10. FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.
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. SF#95, p. 14.
Nokia 9200/9500. When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 (www.satworld.com.au)
Pace DGT400/DVR500. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818). UECs replaced; Sept 18 (2003) "drop-dead" day; all were to have been "turned off" on that date (in fact, those with V1.13 CAMs may still be working; still does radio including CA, not TV).
Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).
Panasat 520/630/635. MCPC FTA, Irdeto capable, forerunner UEC 642, 660. Out of production, spares fax ++27-31-593-370. No longer works with Austar/Foxtel.
Phoenix 111, 222. PowVu capable, NTSC, graphics, ease of use. (111 review SF#57). SATECH (below)- 222; terminated
Phoenix 333. FTA SCPC, MCPC, analogue + dish mover. Detailed SF review SF#51. 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). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).
PowTek. Blind Search Chinese sourced, field tests rate it highly. Source jason@aDigitaLife.com
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 64-6-356-2749); no longer available.)
SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.
SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at tim@dmsiusa.com.
SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above).
Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superceded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin
Strong Technologies SRT2620. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below).
Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.
Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, does code-key with additional software, Aurora. Strong Technologies 61-3-8795-7990.
Strong 4800 II. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.
Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.
UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361 3636.
UEC642. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faulty P/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; propensity to fall off back of trucks.
Winersat DigiBox 200. C + Ku basic receiver but includes Teletext for NZ TVOne, 2 VBI. Satlink NZ, fax 64-9-814-9447; long term teletext problems (loses TT).
"X" Digital. When modified with "aftermarket" smartcard reader and Internet softwre, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies.

Accessories:

Aurora smart cards. MYCRYPT (Irdeto V2) cards now available (Oct. 2003), Sciteq 61-8-9409-6677.
PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)
PowerVu (Pacific) repair service: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email darius@cases.net.au)

WITH THE OBSERVERS

AT PRESS DEADLINE

TARBS bankruptcy could result in ex-TARBS PAS-8 transponders restarting carrying services such as new ABS-CBN (below) which is testing on PAS-2 Ku (below). Arirang TV launched PAS-2 12.401V (Sr 4.418, 3/4) 10 July, shutting down As3S service (3755V) July 30, adding PAS-10 4053V.

AMC11/146W: This satellite, destined to end up at 131W, should have been testing throughout June - no reports although given the unusual temporary location, that is not a surprise. Next move - to 131W where it replaces aged C3.

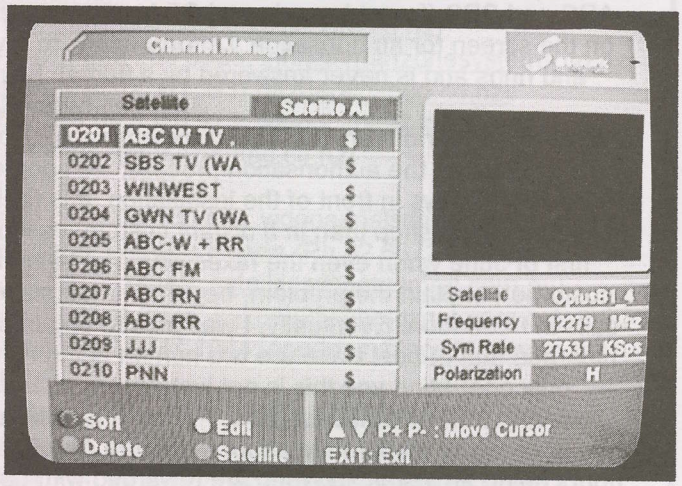
AsiaSat 2/100.5E: "ABS-CBN channels 3706V and 3714V have shut-down; also seen 4148V (PIDs 350/351)." (**KT**) "EuroSport News (4020V) changed PIDs to 1213/1313." (**D. Leach**) (Editor's note: Actually, it now loads with "$" signal for scrambled; V-1 according to reports. Why they would bother to scramble this is a mystery.)

AsiaSat 3S/105.5E: "PTV National testing 4106V, Sr 3.333, 3/4 FTA." (**NK**) "Star Utsav new 3780V, PIDs 519/668, FTA." (BD)

Intelsat 701/180E: "TARBS Pacific Broadcasting Service with 16 test cards, 12.691H, Sr 28.066, 3/4, S2 spot beam." (**S. Holzt**, New Caledonia) (Editor's note: See additional comments in 'Soapbox' and TARBS report p. 29 here.)

NSS-5/177W: "Tests appearing 12.681V (Sr15.500, 5/6) region with NZ footprint, source Taiwan." (**Craig S**, NZ) (Editor's note: Thailand's iPSTAR plans to use this boresight for NZ rural Internet on their new satellite later this year.)

Optus B3/152E: "12.501H Globecast seems to go on and off with no schedule." (**Bill S**) "Suryan FM has been added as radio channel 12.525V, APID 1622." (**PD**) "Church Channel testing 12.658V, PIDs 504/570, was 12.525V. WIN and GWN testing 12.738V, Irdeto 2 CA, Sr 14.295, 7/8 PIDs 33/36 and 2910/2911 respectively." (**A. Zapara**, WA) "12.445H, Sr 6.666, 3/4 V8 Super Car Racing master feed for Net 10 (July 4); also on 12.455H, Sr 6.666, 3/4 same race from in-car cameras, possibly for Ten digital terrestrial. 12.460H, Sr 6.666, 3/4 GWN 'News Backhaul switching between 3.2 and 8.3 MBit/s. The two V8 channels also running at 8.3 MBit/s and they play quite well on Nokia DVB2000 whereas GWN does not. However, V8 stream telling Nokia it is 4:3 whereas GWN stream says it is 16:9 thereby possibly explaining DVB2000 problem with it." (**IF**, Qld) "Sun TV (India) now part of 12.525V mux." (**DP**) (Editor's note: Sun TV scheduled to go CA 11 July, A$32 per month.) "ABC WA now on 12.701V, FTA, Sr 14.288, 7/8 includes radio; SBS WA in HD and regular, SBS News on 12.720V, FTA, Sr 12.600, 5/6." (**A Zapara**, WA) "T15/12.688H, Sr 30.000, 2/3 appears to be Optus directed from National 'B' to 'Central Australia' on occasion - could be either at this moment!" (**DM**, NSW) (Editor's note: WIN, GWN, ABC NT and 4 ABC radio were here - FTA - as of late June.)



NOT quite gone. Although PAS-2 PowerVu service for GWN/WIN/ABC/SBS was cut-off June 12th (12 noon WA time) the transmissions continued sporadically until late in June. Observers report intermittent reception as late as June 28.

Optus C1/156E: "Three SCPCs appearing: T10/around 12.675V, T11 and T12/around 12.730H. Possibly they have been used in connection with Ten Network 'Sunrise' programme feeds from Hawaii late June-early July?" (**IF**, Qld.) "C1 vertical side signals have eroded by 4% over past several months - not my system!" (**AI**, NSW)

PanAmSat PAS2/169E: "Plenty of new action here on Ku: Arirang TV (Korea) on 12.401V (Sr 4.400, 3/4) on Australia (and NZ) beam. And Filipino major broadcaster ABS-CBN has launched (1 July) a new MUX on 12.575 (also try 12.577)H, Sr 13.845 also on Australia beam. TARBS previously had exclusive rights to ABS-CBN, lost them in court battle and the Filipino firm decided to 'go direct' bypassing TARBS. As of 1 July 4 TV channels (TFC, Pinoy Central, ANC, Cinema One), 2 radio (DWRR, DZMM) with more to come." (**George**). (Editor's note: Turns out to have been a wise move at ABS-CBN; they knew something was up! See TARBS report, p. 29. These are FTA as of presstime, scheduled to become CA. ABS-CBN has established an Australian presence at Level 9, Avaya House, 123 Epping Road, North Ryde NSW 2113 fax 61-2-8875 7777 and toll

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 f5-f8 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 August 15th issue: August 3 by mail or 5PM NZT August 5th if by fax to 64-9-406-1083 or Email skyking@clear.net.nz.

SOUND OFF!

Is this what is troubling you, mate?

"Over the years we (Western Video Pty Ltd, Kingsmeadows, Tasmania) have installed hundreds, perhaps thousands, of home and commercial TV receiving systems throughout our state. When the ABC turned off the VHF channel 3 service, leaving only UHF service on channel 32, many-many homes completely lost their access to ABC. This in turn increased the popularity of satellite service and because Aurora also allows under the correct 'out of area' circumstances access via satellite as well to Central 7 and Imparja, where possible all of our installations are so packaged. There is a downside of course - neither Central 7 nor Imparja cover Tasmanian news (sport, weather) so folks who end up with a satellite system are relegated to being 'foreigners' in their own state. The real problems begin when you have an Aurora install scheduled. To turn on ABC and SBS (forget Imparja and C7 for the moment) a smartcard is required. Aurora displays a phone number on the screen for authorisation. Unfortunately, to my experience, this number is virtually useless - it simply rings and rings and is never answered by a human being; only a recording asking you to leave your number for a call-back. *Which never happens.*

"After a number of very frustrating experiences involving 200-300-400km drives to do a scheduled install only to be shut down in the authorisation process, we adopted the technique of faxing in our new authorisation request 2, 3 or even 4 days in front of the installation. It is far better to discover the IRD has not been authorised while still in your (home) shop than in a distant customer's lounge room! This procedure worked fairly well until around the first of June when even the faxes were not being followed through with activation. After postponing (call the customer, explain the problem, beg their understanding) the scheduled installs, I began making follow-up phone calls in frustration. Eventually, I was able to obtain an unlisted number to talk with a 'real person'. Which is where I learned that at best there are two human beings processing turn-on applications for the entire country and often only one! Mind you this is not just Aurora authorisations - it is the full compliment of non-pay-TV services requiring turn-on authorisations. For us, it is a case of being the unofficial, unwanted, point-men for everything that is wrong or inoperative about the entire Aurora and associated platforms. When we spend 3 hours in travel, 2 hours doing an install and then are rewarded with up to 5 hours hanging out waiting for a card to be turned on, the return 3 hour trip seems very tedious indeed!

"Moving on; there is the BVN world. Firms advertising in the Dutch newspaper (SF#116, p. 31) have become a new challenge. By offering to sell 'install it yourself' systems shipped over from the mainland, we once again become the focal point for 'service.' In the past ten days, three Dutch families have contacted Western Video seeking assistance with their pre-packaged systems. All three had been shipped dishes which were too small for our Tasmanian footprint level from B3. One of the three included a dish which, I swear, had a metal skin that was no thicker than the paper upon which these words are printed. To make these systems play, we had to upgrade the dish size in each case.

"Finally there is the dramatic difference in support we receive between Imparja (9/10 networks) and Central 7 (7 network). The Imparja web site works; Central 7 does not. The Imparja programme schedule listing works; Central 7 has been down for 5 weeks as I write this. Imparja communicates with us, does their best to support our efforts on their behalf and Central 7 won't even talk to you on the telephone."

Brian Watson, Managing Director, Western Video, Tasmania

Do YOU have a beef and need to '***Sound Off***?" Direct your story, comments, feedback to SatFACTS, PO Box 330, Mangonui, Far North, New Zealand; fax 64 9 406 1083, or, Email skyking@clear.net.nz.

Fiji TV's SKY Pacific Service is late-to-air

Fiji TV's new NSS-5 (176E) mid-Pacific region FTA + CA satellite service missed the July 1 previously announced start date (the actual date was *never* set in concrete and was for "tests" only, not full commercial service). It was not their fault. Fiji TV had explored several satellite distribution options, including I701 using a spot beam identical to that employed by New Caledonia's Canal + (Pacific), a jointly operated proposal originating at TARBS using the same I701 coverage, and, a customised footprint created just for their unique purpose by New Skies Satellites (NSS). They chose NSS-5 because this bird with a footprint adjusted to suit their special needs would bring first-time small (or medium) size dish television to a number of Pacific areas currently dependent on erratic or fortuitous C-band reception and large dishes (see our published map, SF#117, p. 6). With the custom footprint and terms agreed to, and verified by memos between New Skies and Fiji TV, the real work began: Identifying, locating, ordering in and installing more than a million US$ in origination, encryption, and uplink equipment plus an initial stock of several thousand Ku-band receiving systems.

Which is the point where the excrement hit the fan. NSS HQ in Holland decided to sell NSS-5 (and NSS-6 and others) to a new consortium (Blackstone Group). And the new guys already had, prior to their purchase, an agreement to lease out ALL of the NSS-5 Ku spot beams to a Thailand based firm proposing to deliver medium and high speed two-way Internet connections to Australia, NZ and other Pacific areas (iPSTAR operated by ShinSat, owned by the Prime Minister of Thailand). So here was Fiji TV left holding an empty bag - all dressed up ready to go to satellite and the satellite's new owners basically saying, "Get stuffed." Court actions followed - Fiji TV saying "We had a deal!" and New Skies original owners saying "Maybe - yes - but ..." FijiTV is rightfully angry, upset and "mad as hell" to being treated as a third-world second-class citizen. Next? More court action, Fiji MAY test temporarily using I701 during July/August, but remains optimistic it will eventually be permanently housed on NSS-5.

These firms are available to do contract dish installs

Fiji Islands

Safeway Electronics Ltd, **Suva + Lautoka + all islands** (Ph 3395300/6666822; safeway@connect.com.fj)(*)

New Zealand:

Tauranga TV Svcs Ltd, western **Bay of Plenty** (ethnic Ku packages) (Ph 07 578 7276; dave-tts@clear.net.nz)
Frontline Electronics, **Mosgiel** region (ethnic Ku packages) (Ph 03 489 4001)
Advanced Aerials, **Napier/Hawkes Bay**, comcls (Ph06835 6618/021 272 6618; advanceaerials@xtra.co.nz)
Nelson TV & Video Svcs, all **Nelson Bays** (Ph 03 548 0304; ntv@tasman.net)
Rexels AV Electronics Ltd, **Palmerston N, Manawatu, Hawke's Bay, Wanganui** (Ph 06 357 6186; rlblair@infogen.net.nz)
Quality Pics, entire **Waikaito** region (Ph 0800 007 667; maxnkay@xtra.co.nz)
Smartzone, **Wellington-Wairarapa-Palmerston N** (C+Ku) (Ph 029 289 6333; info@smartzonesystems.co.nz)
Homestead HiTech, **Wellington, Masteron-Levin** (PAS-2, B1, B3) (fitzgera@ihug.co.nz)
Waipu Cable Television, **Wellsford to North Cape**, (Ph 09 4320 973; waipucable@xtra.co.nz)
John Stewart, **southland** including Otago (john.s@tritec.co.nz)

New South Wales:

Woolgoola Antenna Service, **Coffs Harbour** (50km radius) (Ph 0266561889; woopaerials@iprimus.com.au)
Town & Country Antennas, 60km radius **Murwillumba/Tweeds Heads** (Ph 02 6672 8595)
Newcastle Satellite, **Newcastle + Lwr Hunter Vly** (Ph 0249614449; satellites@netcentral.com.au)
Home Satellite TV, 40km radius **Port Macquarie** (Ph 02 6584 3838; kazbah25@optusnet.com.au)
Goodcom Communications P/L, 100km radius of **Walcha** (Ph 02 6777 1044; goodcom@northnet.com.au)

Queensland:

Phil's Antenna Systems, 100km radius of **Hervey Bay** (C+Ku since 1996). (Ph 0741 256 273)

Tasmania:

.65 Electronics, **Launceston and Northern Tasmania** (Ph 03 63 330820; sales@65group.com)(*)

Victoria:

Riviera Satellite Antenna Svcs, 100km radius **Bairnsdale** (Ph 03 5152 4884; gilhooleystv@net-tech.com.au)
Geoff's Communications, 60km radius **Korumburra** (Ph 0408 582010; gwyhoon@tpg.com.au)
Foreign Satellite TVP/L, **Melbourne (region)** C+Ku since 1995 (Ph 040445509; joe12@dodo.com.au)

To be listed here, tell us: 1/name of your business or your name, 2/ your home town and radius-distance covered from same, 3/ your telco, 4/ your e-mail. Send to skyking@clear.net.nz, or fax to ++64 9 406 1083 or mail to SatFACTS, PO Box 330, Mangonui, Far North, NZ. No, there is *no charge* to be listed.
(* - NEW or modified this month.)

free telephone (011) 800 2270 0722. Announced rates are A$29.99 [+ GST] monthly. New Zealand??? It's all about dish size [no to ex-Sky 60/72cm!]). "Telstra WA mux 12.673V seems to have finally shut down." (**SJ**) "If Al-Jazeera 3836V has been lost, try new PIDs 2311/2312." (**MN**)

PanAmSat PAS8/166E: "Videoland Sports, Soundtrack + others 3860H have been in and out of CA during June-early July." (**NK**) "Disney Channel 4180H (PIDs1560/1520) was briefly FTA." (**Bill Richards**, Aust) "ABS-CBN channel 2, 3880V, PIDs 1260/1220 has shut down, replaced by FTA bars." (**Bill Richards**, Aust)

Thaicom 2-3/78.5E: TARBS 3480H moved to 3600H, Sr 26.667; excellent on Strong 2.3M mesh." (**B&D**, WA).

Soapbox: "Regarding slow turn around service from Optus in obtaining authorisations for their ABC+SBS+C7/Imparja services. I find the ONLY system that works is to fax them the ABC and SBS (ONLY!) data first and when the box turns on in my shop, I then go back for a second bite to contact C7 and Imparja. It seems that unless ABC + SBS have been turned on, the chances for delay and error multiplies rapidly. Do it in steps, be patient, and it will work. Usually!" (**John V**, NSW) (Editor's note: Or, you could threaten them with an 'X' box install - see p. 15!) "Fiji Information Minister reports 3 applications for new Fiji terrestrial TV licenses are pending, including Chinese, Canadian and Hawaiian firms. A Fiji court ruled in 2001 that an existing contract with Fiji television prevents additional

TARBS: Blowing off $132,000,000 on a flawed business plan

The recent "signs" were all there. First, a loss of Filipino service in a court fight with ABS-CBN. Then a desperation attempt to create a new "Pacific Service" to cover Fiji and nearby areas using a package of programming fed from Sydney on I701's identical-to-Canal + spot beam Ku configuration. But the clincher was millions of dollars owed to PanAmSat for 5 PAS-8 transponders. On July 2, the court appointed a receiver signalling TARBS was bankrupt. On July 5, TARBS installers were told to immediately stop all installation and service call work. On July 7, installers told to "turn-in" unused inventory (fat chance of that when virtually all are owed money for installs and service calls unpaid). And to make it plain this was for real, PanAmSat shut down all PAS-8 transponders and a similar closure of NSS6 transponders (some Thaicom 2/3 feed services remain operating at presstime, FTA for now). TARBS joins a growing list of failed Australia-Pacific services including the original ABC Export channel, Galaxy, Boomerang/TPG, Reminiscent TV, Saturn-TVNZ. TARBS set-top boxes in customer hands will be a collection challenge and possibly have no FTA or other useful abilities even in the "Grey/Sunday Boot Sale" market. Distributors report a sudden interest ("*mad rush is what we are experiencing!*" Leon Senior, Strong) in 2.3m region dishes as ex-TARBS served homes, many of whom began with C-band systems before TARBS grabbed the programming rights, are taking a step backwards in time. RIP, TARBS.

stations operating for initial ten-year period; government seeks to adopt legislation to bypass the court ruling." **(Tiki)** "Go to http://www.smartdigitaltelevision.com/ which has nearly 200 'digital television on Internet' sites posted. Delivery speeds run from a slide-show equivalent 35 Kbps (Cuba) to broadband comfortable 350 Kbps (MAC TV, Taiwan) and higher. Yes, there are a number of USA services as well as perhaps 50 other countries (Iraq, Libya, Mauritius and many more not commonly available). About half are in Real Media, most of balance in Windows Media (9 assumed). This is an incredible resource!" **(Andrew J**, Victoria) "Samoa's government operated TV service is for sale and oddly enough they have approved two new (terrestrial) TV broadcasting licenses to local groups which means there could be as many as three local channels there one day - soon." **(KC)** (Editor's note: The mid-Pacific region is about to explode in TV service and some of the growth is being driven by those planning to take one or more Fiji TV channels off of satellite for local rebroadcast through terrestrial facilities; a detailed report in SF# 121 - September.) "Major new investment underway at Sky NZ's Auckland facility - suppliers standing in line to get a piece of the action, rebuilding the now ageing facility at 10 Panorama Drive, Mt Wellington." **(John)** "WiMax is ready to roll out in USA, subject to availability of VHF-UHF frequencies, should not be far behind elsewhere in world. Basically, because of greater range of the VHF and UHF region channels, tower to (repeater) tower ranges of 45km are possible with 2km base station to laptop/portable two-way connection predicted at delivery speeds as high as 75 Mbps. This is a direct competitor to short-range WiFi 'c ells' that often are only able to serve a single building or area such as an airport waiting lounge. Largest commercial impact is likely to be on 2.4 GHz (and higher) microwave WiFi systems which are notorious for interference, spotty coverage problems. " **(Headly M**, Los Angeles) "Telstra is promoting DVD rental service (www.fetchmemovies.com.au) with a claimed 8,000 title library, free delivery and return postage, no late fees. Can a telephone service that can't seem to make cell fones work be trusted to be your DVD movie supplier? Curious minds want to know!" **(IF**, Qld) "I find it difficult to accept that a receiver manufacturer is offering an IRD that requires no card, no CAM, only Internet sourced 'numbers,' per April SatFACTS." **(P. O'Brien**, Galway, Republic of Ireland) "Dubai TV has purchased film rights to latest Warner Bros flicks (Harry Potter, Lord of the Rings +) and TV series (West Wing, Sopranos) which it intends to show on FTA programme channels." **(Archie)**

AT Sign-off

SexZ TV, NSS-6, has closed down. There *were* three adult, triple-X rated, packages available to Australia (one to New Zealand through AsiaSat 3) and *now* there are two. SexZ closed with an appeal for "viewer support" asking that dedicated fans chip in extra money to keep them going. It did not happen.

Adult channels are sold as "premium" (pay to view) channels; some require special receivers, all have special format CA (conditional access) cards. Viewers are both "willing" and "consenting" fans, and one assumes based upon the pricing structure, unlikely to be minors.

Titillating breasts, feminine and male body parts normally not shown on free-to-air television (setting aside some of the SBS movies) dominate triple-X adult fare. And "penetration" in its various forms. SexZ TV came under extra scrutiny because, they say, it allowed a "gang rape" scene to be broadcast - "an act of desperation for a service that had failed as a commercial attraction," notes one competitor.

Adult programming continues to be a major business segment in Europe. The July issue of "What Satellite" contains 33 advertisements for adult programming cards. The side effects of adult programming are many; British supplier TPS uses discount priced adult cards packaged with Force receivers as a sales gimmick (model 515S-VA, similar to the Fortec FSCI-5100 Plus + Ultra we review on p. 14, here, is GBP249 alone but when combined with cards for "Don't Panic," "SCT," "Ultra Blue," "Sex-viewTV," and "Sex-view Plus" becomes GBP328). The cards, purchased separately, come to GBP615 (one year sexscriptions) so obviously anyone who purchases cards separately is making a bad consumer decision.

A study of What Satellite suggests no fewer than 20 adult channels are now available in Europe ranging from GBP60 per year for the Free-X package of three channels ("Free-X TV," "X-Dream TV," and "Backroom") to some that top GBP200 per year.

Free-X's package is sold for a one-off payment, unlike most others that collect payment annually. When you charge less than the competition, and market a message that to become a viewer requires only one payment, one time, this of course raises eyebrows. What Free-X has to do to stay on the air is keep on selling new one-off subscriptions at an accelerated rate. The money they take in this month pays for last month's transponders (plus of course fees for material to transmit, promotion and general overhead). The money they take in next month will pay for this month's bills, *if* it continues to flow in; a dangerous financial game.

And if it stops flowing? Well, there is the unspoken option of going back to one-off subscribers and requesting a new payment. Because each subscriber has a unique smartcard address, those who don't pay could (in theory) be turned off. If this one-off approach seems familiar to you, consider the Optus Aurora one-off smartcard acquisition. For reference, late in June GBP60 is equal to A$156/NZ$171.

Running out of money is one threat. There are others as we have reported over the past several months. In Australia, only Canberra and NT allow "adult video" rental. But under the counter, out of public view, video shops throughout the country do in fact stock for rental (or sale) adult films that have not been approved by film censors or the ABA. This "wink-wink" layer of video is so pervasive that one study conducted in 2002 found Australia as a nation rents more adult films per year per household than any other country in the world.

Adult level films are a social issue with significant cultural connections. Some European countries (Denmark, for example) have monitored incidents of rape and sexual abuse of minors over decades to determine what happens when sex shops become legal. There have been some surprises here - freely available adult sex materials and places of business have *not* driven up incidents of rape and child abuse - rather such activity has actually gone down, markedly.

Women's groups argue that adult films are largely demeaning to the female half of the population - adult films (such as the alleged SexZ showing of a gang rape) routinely propagate the myth women are the "weaker sex." And that most adult films are "how to" step-by-step video manuals to encourage males to follow this pathway.

In a competitive marketplace products that fail to attract consumer interest die. DVD and PVRs will one day put the VHS format out of business; you can count on that. In the competitive adult film world, attracting consumer interest largely depends upon pushing the boundaries of what is acceptable. Playboy format "softcore porn" is an entry level genre that seldom "satisfies" an individual consumed by watching sex on the screen for more than a short period of time. "Show me the REAL thing!" leads to more and more adult-themes. In the competitive world where What Satellite (magazine) showcases dozens of advertising pages offering "the REAL thing" the only limitations are those put in place by the film's producer and director. If the competition has done every possible variation of human penetration by other humans, competitive pressures move on to animals, toys and tools of the trade.

Page 112 of What Satellite for June slides a 1/2 page advertisement from a firm called 'Omax' directly opposite a full page display for "247 SexTV." The Omax is an arousal tool ("*...it can teach you things you may have never known about your body...*"). Magazine columnist Dave Taylor, devoting a page each month to the world of adult TV, in the same issue penned, "*Surely, a move to full hardcore is now inevitable.*"

Adult TV is a "push the boundaries" kind of business. If Australia's government clamps down on the current availability of satellite services by shutting off in-country card supplies, what happens next? Does the service go away? Unlikely. With virtually every product in the world now available through Internet, shutting down an Australian card source will simply cause a new card source, serving Australia, to open up from Jakarta or Hong Kong. The availability of the service will not miss a tick as long as the service itself finds it profitable to be on satellite.

Consumers who are investing in smartcards for subscriptions are risk takers. What you as a dealer or distributor must decide is whether you are hardcore enough to be a risk taker as well.

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Hard Core (seriously SERIOUS!) "How to do it" References

☐ **UHF 20' Parabolic**: For a few hundred dollars in materials at the local lumber yard, you can build a 20+ dB gain UHF parabolic capable of providing "scatter region" reception to 300km! **$15** all regions.

☐ **Surface Wave 40+ element "yagi"** format single channel antennas. Stack 'em! Designed by the legendary Oliver Swann, this is the biggest, highest gain single channel VHF-UHF antenna ever created. Oliver routinely used them for 600km reception. Not for careless folks. **$10** all regions.

☐ Tech Bulletin 9402: **MATV** (master antenna terrestrial) systems - wiring up a home, motel, hotel, camp grounds from one set of antennas - **$15** all regions.

☐ Tech Bulletin 9404: **Home Satellite Dish Systems**. "Newbie" trying to work out what all of those funny terms mean and how a home system goes together? Perfect. **$15** all regions.

☐ Tech Bulletin 9405: **Satellite to Room Systems.** Combining MATV (TB 9402) with satellite (TB 9404) to distribute satellite TV to multiple outlets - 2 to 1000+! **$15** all regions.

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☐ TB9304: **UHF - Big Antennas** for 300km+ Reception over terrain! Professional. **$15** all regions.

☐ TB9305: **Cable TV** - the basics. How a cable system works, how to build one! **$15** all regions.

☐ **Nelson Parabolic Manual**. Step by step allows you to build satellite dishes with high accuracy to 13' - 4m diameter. Nelson was the very best and his techniques have stood the test of time. **$15** all regions.

SOFT CORE - recent back issues of SatFACTS (while supply lasts)

☐ SF#93 (May 2002). **European Piracy**, hundreds of web sites detailed - $10 all regions

☐ SF#96 (August 2002). **Nokia BDM**; faster channel zapping. $10 all regions.

☐ SF#97 (September 2002). Turning **FatCAMS** into Multicams. $10 all regions.

☐ SF#100 (December 2002). **d-box2** BIG report. AC3 surround sound. $10 all regions.

☐ SF#101 (January 2003). **d-Box2 conversion** to LINUX operating system. $10 all regions.

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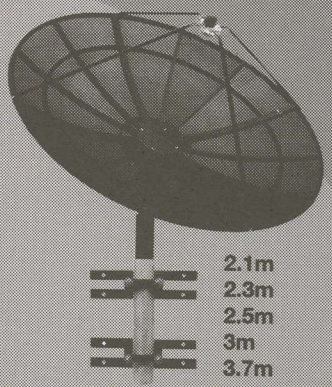

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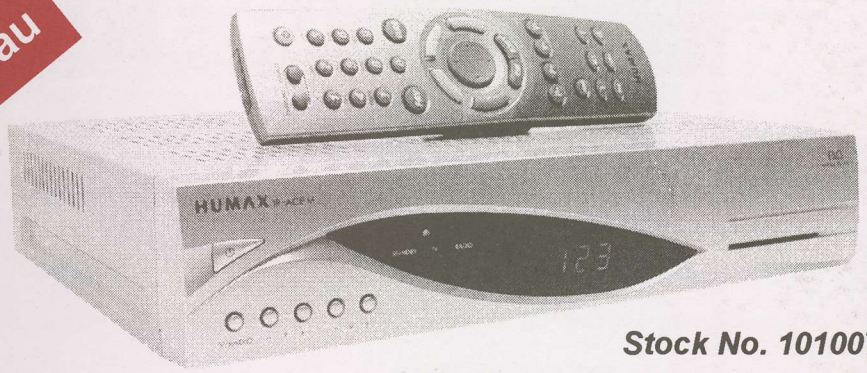

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