Bob Cooper's

MARCH 15 1997

SatFACTS

MONTHLY

Reporting on "The World" of satellite television in the Pacific Ocean Region

IN THIS ISSUE

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UNTANGLING THE DVB MESS

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Vol. 3 • No. 31

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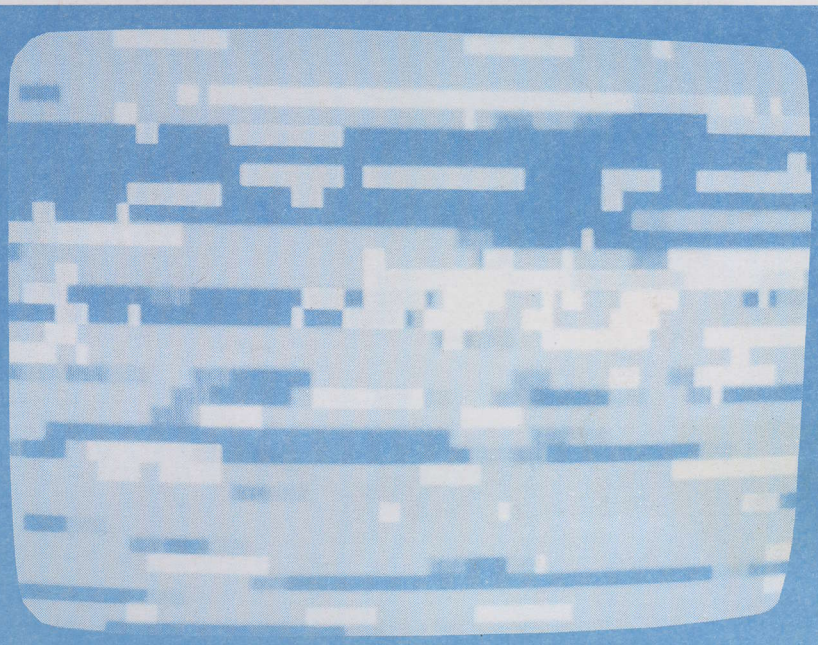

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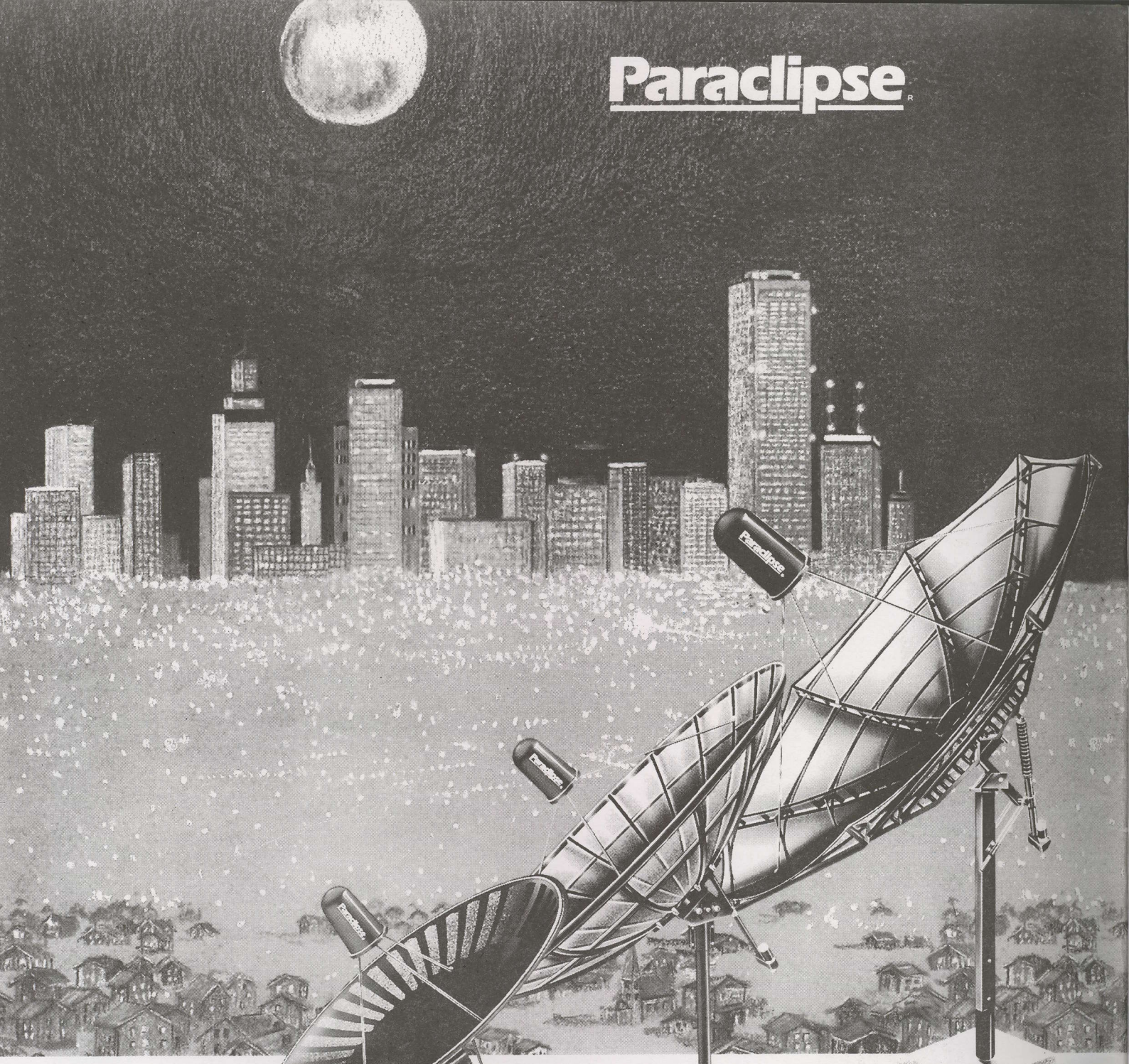

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This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no long define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install the appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

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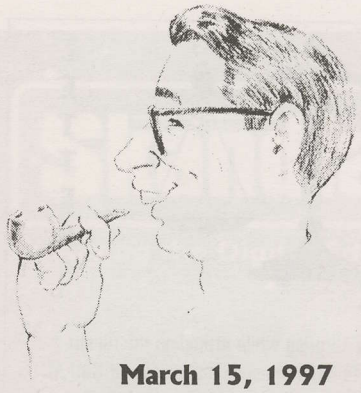
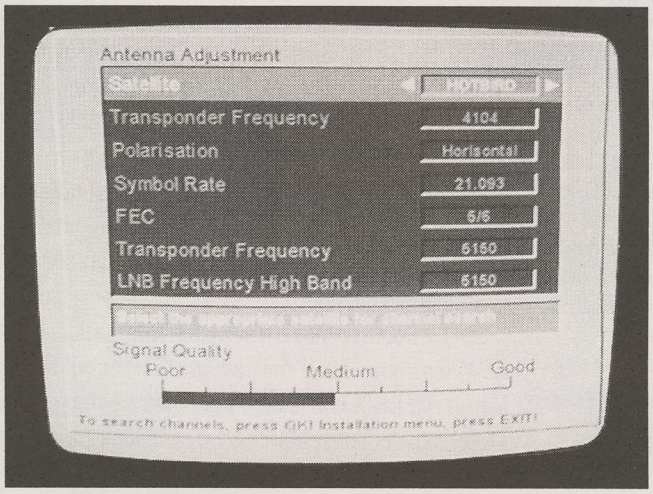
COOP'S COMMENT



March 15, 1997

The nearly year long saga of the SA D9223 is almost over; I can smell the end of the trail just ahead. A SatFACTS reader who ordered a D9223 late in December claims written proof he was told by an SA staffer the receiver would "do FTA MPEG DVB" and in particular the NBC (Philips configured uplink from Hong Kong) bouquet. Of course it does no such thing and it should be no surprise to learn SA may either reconfigure the receiver to do FTA NBC (as allegedly promised), or, give the reader his money back. SA Sydney maintains they have never told prospective buyers the D9223 will do non-PowerVu services. Whether the D9223 is, or is not, capable of doing FTA DVB MPEG-2 has been the critical question for many months. In at least one example, they apparently accepted an order from a SF reader on the basis that it would.



NOKIA "does" PowerVu - alas 9223 won't do FTA ("lock" confirmed by darkened signal quality bar at bottom of V1.63 display; see p. 13)

We know it can do it - Robin Colquhoun demonstrated that to us at SPRSCS '97. Of course the "Robin Solution," a home PC and extensive extra software plugged into the RS232 port of the D9223, is not the consumer friendly or average user answer.

If SA really believes it can do FTA DVB MPEG-2, let them offer the market a model with the appropriate software and let them set their own price for such a model.

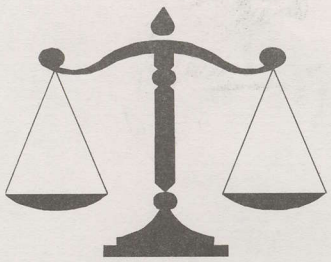
In the present situation people are sending off $2,000 plus in local currency for a receiver which so far has demonstrated great promise but virtually no real ability to do the DVB FTA task. SA last May and June made much in the trade press of their "interoperability" virtue - claiming their receivers (including the D9223) were "capable of operating with more MPEG-2 format variations than any other receiver in the marketplace." I believe they should now either deliver to that press agentry promise, or come out and admit their receivers will not do FTA DVB MPEG-2. SA's leadership in MPEG-2 is at risk here. If they cannot deliver to us a D9223 that does FTA DVB MPEG-2, but a couple of Taiwanese firms can deliver receivers that do this along with FTA PowerVu ... well, perhaps SA is not the technology leader they would like us to believe.

Before you receive the next issue of SatFACTS, we are promised by multiple Taiwanese sources they will be delivering receivers which do everything SA originally claimed the D9223 would do. As I see it, SA has three choices: (1) Continue to ignore this festering problem which will facilitate the Taiwanese capturing the very market SA first created, or, (2) Come out with the proper software that converts a "stock" D9223 to do FTA DVB MPEG-2 as well, or, (3) Confess they can't do this (for whatever reason suits their ego) and we will all get on with our lives. We've been blindly following the SA MPEG trail for nearly one year now - it is time to reach the end or find a new trail.

In Volume 3 ◆ Number 31

-ON THE COVER-

Untangling the DVB Mess: Receivers that do or don't do - the different MPEG formats. Receivers that unlock video but ignore the audio. Receivers that unlock but freeze frame the video. SCPC versus MCPC. NTSC versus PAL. Receivers that need to know "every parameter" to find a service - and those that don't. Pages 6 - 15, here.



LETTERS

OLD Friends

"Imagine my surprise while attending the recent Sydney show to have someone pull a copy of SatFACTS out of their pocket and reintroduce me to Bob Cooper! You will recall I attended the fist satellite show you ever held, in Oklahoma in 1979, then went into the antenna fabrication business, and subsequently as C-band changed into the SMATV world having spent much of the last 12 years engineering systems in places like Saudi. I anxiously await my own first copies of SF and CTD, and plan to be active in this field in the Pacific. Your January issue reported on DirecPC (Internet) being a possible profit centre for installers. Let me warn you - although it is only six months old in North America, the cheap installs and thinning profits have already hit. If you are really lucky you will make $100 on the hardware and less on the installation; hardly worth your time. This will happen in the Pacific as well, believe me!"

Gay Hamilton, Hamilton Satellite Systems, Inc.
Garden Grove, California

SMATV in the Pacific is virgin territory for those with the required skills and experience. DirecPC, when it arrives here (later this year we suspect) will be profitable for a short time, but only a short time. First in - first out!

THE ANSWER Is No

"How can you convert the PACE DGT-400 to watch AsiaSat 2 once it has been upgraded by Galaxy?"

Terry Bell, Norracan, Victoria

If there is a software routine that turns off the programme rating system once the DGT-400 has been "hit" in an over the air upgrade, we are not aware of it. Until we hear differently, once hit the DGT-400 is thereafter useless for AsiaSat 2 (or other FTA MPEG-2) reception. An aside - Steffen Holzt in New Caledonia has run a PanaSat 520 with a Galaxy card for three months, day and night, and his receiver goes back and forth to AsiaSat-2 without a problem. Steffen is not certain why - suspects it may have something to do with the very marginal service he experiences using a 3m Ku rated dish. Or it may be the Panasat he uses simply refuses to accept the "Parental lock" software force fed by Galaxy.

SMATV System Design

"I need some information on connecting multiple reception points from one dish to different viewing locations, such as at a motel. Can you refer me to specific information carried by SatFACTS?

David Fisher, Satellite Reception Australia

For a starter we suggest you order SPRSCS '97 videotape FrT3 which featured Bernd Pawlik of WISI (Germany) describing the basics of such systems. See announcement concerning this and other '97 Show Tapes on page 10, SF February.

(Letters / continued p. 4)

PROGRAMMER PROGRAMMING PROMOTION UPDATE

MARCH 15, 1997

Australian RABS subscribers, presently receiving ABC and SBS via B-MAC, will be given opportunity (not option) of "upconverting" to MPEG digital service for price near A$1,000. Conversion to MPEG is underway, drop dead date (turn off) for B-MAC not announced.

BBC Lip Sync. Several report "lack of lip sync" on BBC MPEG service, PAS-2 within California bouquet. Reason: BBC is originated in PAL, converted to NTSC using Snell & Wilcox Alchemist unit. PAL to NTSC delays video, so audio must also be delayed to stay in sync. Audio appearing on "channel 2" was original PAL audio, without delay while channel 1 was (and is) time delayed to sync with converted video. If you connected L + R together for "stereo" what you got was echo chamber effect since PAL audio was ahead of NTSC audio. If you find audio out of sync, switch audio channels!

CMT / Country Music Television International (the version we have in Pacific and Asia) was not part of the sale to US network CBS of CMT and TNN (The Nashville Network). CBS will launch their own ("Eye on America") cable + satellite programme channel March 31st, and look for that one into Pacific by midyear as well.

CFI MPEG-2 service on Intelsat at 66E is functional. Hardware is Philips, 4055RF/1095IF (RHC) with FEC 3/4 and Msym 27.500. Two channels at present - CFI (same as on C2) and CFI-Pro which is usually in CA mode; 4 additional pay TV level channels are planned. At 5 degree look angle in Adelaide, it works!

CNBC is now past 6,000,000 homes reached via cable, largest business / financial network coverage in Asia + Pacific.

Turner International Australia Pty Ltd is no more - following merger of Turner Broadcasting and Time Warner, Australian offices have closed in favour of Hong Kong regional facility. New contact is Elsie Choi, Sales Service Executive for Pacific region, at tel 852-2826-4537 and fax 852-2804-6415. On March 30th Cartoons + TNT changes PAS-2 schedule to begin cartoons at 6AM NZT and movies at 8PM NZT - a 5 hour setback from present schedule. C2 schedule will not be effected. Turner advises, "*Rumours that we have an MPEG feed on PAS-2 are wrong.*" We never reported that rumour.

Fast response. A letter in SF#30 complained of the EWTN audio sibilance (hiss sounds). SF airmail to Alabama is 7 days and on February 22nd we heard from Bob Krebs, Regional Marketing Manager (tel ++301-271-4047) asking for details. By February 25 Jim Charles (tel ++205-956-0328) had the problem narrowed down: (1) California uplink was taking off-satellite EWTN feed into PowerVu gear "too hot" at 4 times normal audio level; and, (2) a receiver designed for 75 kHz audio bandwidth trying to cope with EWTN's 150 kHz! Remaining - Australia's TVSN as "worst audio" in Pacific.

Speaking of TV Shopping Network. Their PAS-2 C-band feed remains so degraded (they sort of share their transponder with MPEG CCTV feeds from China - an impossible situation) that the channel is offering to provide 5m range Ku band dishes to NZ TV stations as incentive to carry service. Smaller, regional TV broadcasters have tired up trying to clean up the exceptionally poor quality on PAS-2 and apparently the network has given up as well. The Australian originated channel is carried FTA within the Galaxy DTH bouquet on B3. That PanAmSat allows this deplorable situation to continue is not good ... and we hope Shopping Channel is not paying much for their PAS-2 coverage 'cause it isn't great!

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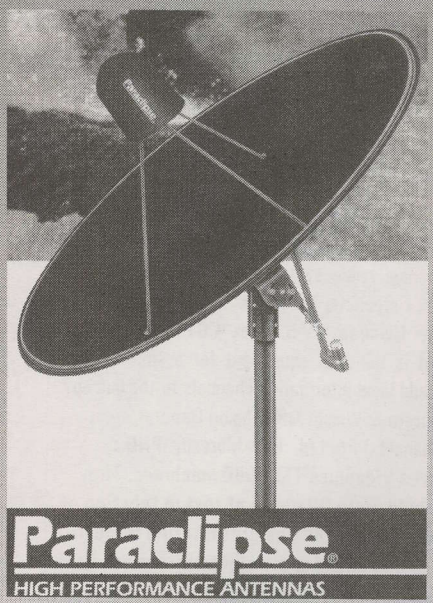

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MTV Asia?

"Can you supply information on a contact number for MTV Asia? I have access to an SA B-MAC machine we can purchase for a bar and grill here and they would like this service."

Robert Skilt, Te Anau, Southland, NZ

MTV Asia quietly stopped transmitting on PAS-2 (was on 1346 Vt, B-MAC) several months ago. This PAS-2 service was largely designed for the Mandarin speaking world which apparently was not enough of a market by itself at this time to justify using a transponder for this purpose. They continue in FTA PAL on Palapa C2 (1030Hz) but their beam coverage to NZ is so low that a 7+ metre dish is required for reasonable (P4) quality. An alternate choice, which we judge to be a better choice anyhow, is MCM International on AsiaSat 2 within the European Bouquet (IF 1150Hz). MCM is a far better quality music video service than MTV, does not have those very annoying VJs (video disc jockeys) to interrupt the flow of music and it is FTA. Yes, it is French + English but the music is universal and their play list averages 40+% English with hour blocks that are 100% English. Why mess with MTV when you can have something better, FTA (for now) at that?

OH Crystal Ball -

"What is the future of the Russian Gorizont family of satellites? And, is it possible Australia will close down the ATVI service?"

Colorpix Satellite Department, Armadale, Victoria

The last Gorizont to be built - ever - is waiting launch. No new ones are scheduled to be built. Russia plans to gradually (perhaps too gradually for continued present day service) replace the Gorizont locations with new Express class satellites (see SF#24, August 1996, p. 6). However there are half as many Express scheduled to be built as there are presently operating Gorizonts so some satellite locations will simply go out of service. The first Express in our part of the world is at 80E. ATVI? Unlikely to survive another political crisis but could come back as privately operated commercial satellite service.

LOCAL Cable

Vol 3, No. 29 SF mentions local message channels in the 34 channel cable system. We have looked at an early model Screenlite, Videonics TM-1 and TM-2000, Video Page Generator V-5.8 for C64 computer and more. What is the best equipment for a smaller cable system to add local information channels to the line-up?

Gareth E. Welsby, Managing Director,
Channel 8 Pty Ltd, Port Moresby, PNG

Coop uses Videonics TM-2000 machines. They typically hold 55 to 60 pages of text (a function of style, font, letter size). The presentation is clean but set-up and changes are labour intensive. The least expensive, PC-based system, we have recently admired is at Taupo Cablevision Inc.; call Ron Theaker (64-7-377-0024). A 486 PC is enough to do most text +graphics + digital still camera shots to a page format which you can then turn into a "slide show" for viewers with individual page sequences and dwell times set by keyboard command. PC to PAL output is a NZ$500 or less "box" readily available.

HARDWARE EQUIPMENT PARTS UPDATE

MARCH 15, 1997

MPEG-2 DVB + PowerVu (FTA) receivers are no longer a dream. We experienced our own "first find" shortly after SF#30 went into the mails, now face an overwash of new software routine receivers "promised" to SF for test during first weeks of April (sure to mean a block buster issue in May!). We bring you up to date - and caution against buying the first of anything - p. 6 this issue.

Intelsat 801 launched successfully 0108UTC March 1; bad news is Intelsat has changed target location from 174E to 64E (601 will move from 63 to 62, 704 is already at 66). This will cause a major setback in timely shift around of Intelsat birds in 174-177-180 grouping with no clear detail on how this will be resolved. One Intelsat sources claims I802 or 803 will now go to 174E, 701 there will move to 177E, 702 at 177 will move to 180 and 511 will drop dead. We'll believe it when it happens and that won't occur before next scheduled launch in June. Western Australia readers should see signs of 801 at 64E shortly.

PowerVu 9234 Business Satellite Receiver - letter from SA Senior Account Manager Buddy Hill (in Atlanta) says, "As this model is being introduced to the market, we are just beginning to ship limited quantities this quarter (January-March). PanAmSat and SA have not agreed upon a price structure; current list price is (US) $1,250 FOB Toronto."

Say Good Bye to CDE-2000 (B-MAC) units for Indovision. Sources within Indonesia report they are instructed to no longer offer the four-channel-package plus decoder to new viewers but rather to only sell the (Pace) digital receiver system. CDE-2000 units continue to be renewed (for a year) at press-time but no indication how much longer the B-MAC-analogue service(s) will continue on C2.

Indostar-1, first of new family of "small satellites," scheduled for July co-launch by Ariane along with Eutelsat Hot Bird for Europe. Indostar will operate in S-band (2.5 GHz) with five transponders having ability to carry as many as 48 MPEG-2 digital programmes; target location is 107.7E. We'll have more to say about this in an early issue - in the meantime, scout around for a 2.5 GHz LNB and feed!

Have a credit card? You will shortly be able to order a spy satellite view of virtually anyplace in the world you wish, including your neighbour's backyard hot-tub! Hitachi is part owner of the new Earthwatch low earth orbit satellite that will ultimately have 13 birds in operation. First is scheduled for May launch on Russian Proton. Until Earthwatch only large nations could afford spy satellite technology - now it will be available to anyone who is curious enough to pay the fee.

SKY (NZ) on Optus B1 will only use (1/2 of) TR5 through end of 1997; when MPEG service launches early 1998, they will be on TRs 5,6 and 7 with 20 digital programme channels initially, hope to grow to 38+ later in 1998 by offering NVOD (near video on demand) movies on additional channels. Testing of TR5 service should begin around April 5-7, original scheduled launch of SKY Sport as commercial service April 1 or soon after now - "after." See Coop's Technology Digest, March 19.

DW MediaNet update. After failure of MediaNet demo in NZ and ten days later in Australia at Satellite & Cable Show, "the REAL problem" was discovered at Bezeq in Israel as DW is taken off of European satellite for refeed to AsiaSat 2. DMV sent engineer to Bezeq to rework the relay site early in March, tests began March 5th, 0900UTC; the "mess" you saw on EBB on 5th/6th was related! To be a part of the tests you need the DMV/NTL 3000 receiver equipped with Teletext circuit board shown p. 12 in SF#30. Promises of home (DTH) style receivers with built-in decoder for MediaNet persist through Philips and Samsung but no delivery date is certain. Details from Net On Air Asia-Pacific Pty 61-7-5596-0962.

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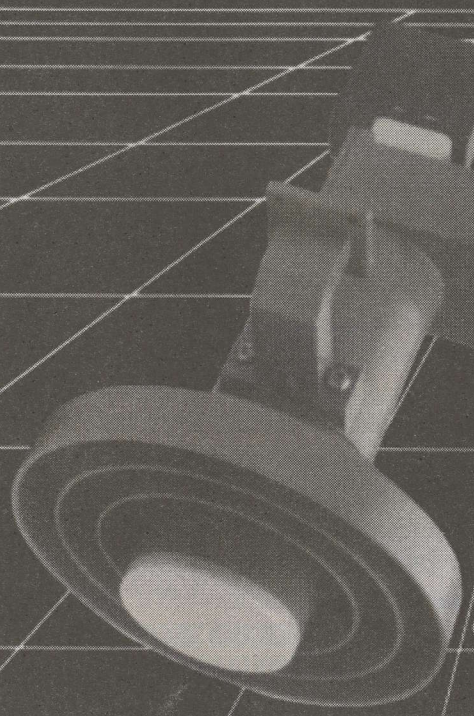

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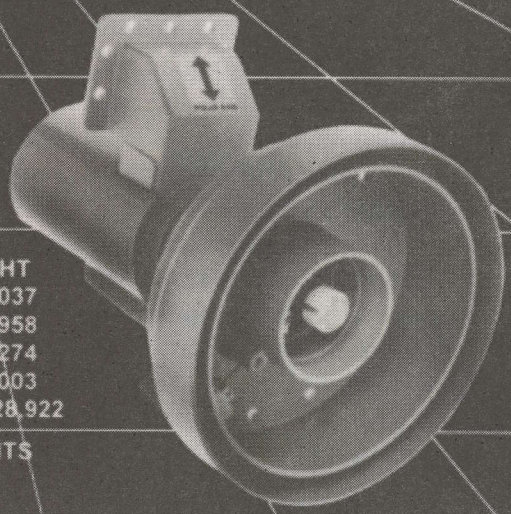

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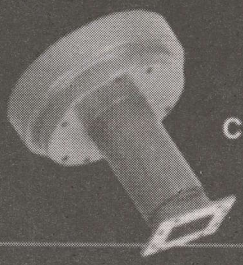

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Several Good Reasons NOT to Buy A PowerVu

RECEIVERS THAT DO FTA PowerVu and MPEG-2 DVB ARE HERE!

A Brief History

In January 1995 Scientific Atlanta began shipping MPEG 1.5 version D9222 receivers into the Pacific. General Instrument had a month prior begun distributing MPEG 1.5 DigiCipher receivers. Initially, only CMT was using the SA system and only Filipino ABN was using the GI system. During the balance of 1995, satellite operator PanAmSat decided to adopt the Scientific Atlanta MPEG system as their "standard" format - meaning that any programmer going to PanAmSat for Pacific + Asia distribution (later to include the Indian Ocean region as well) would automatically be placed into a Scientific Atlanta transmission format.

During 1996 SA announced and then implemented their PowerVu (they said it was MPEG-2 DVB format) transmission system, and the growing list of SA MPEG 1.5 users (ABN, CCTV, CMT, CTN et al) were to receive for a modest fee new D9223 MPEG-2 receivers to replace their previously purchased MPEG 1.5 format receivers.

SatFACTS reported in our June 1996 issue the D9223 was not DVB Compliant. SA disagreed and at first offered to take back our D9223 receiver for a "software update" which they promised would make it totally DVB Compliant. Then they retracted their offer but for reasons only SA understands they did make this software modification to a receiver owned by Auckland resident Robin Colquhoun. The Colquhoun receiver has been reported at great length in SF and Coop's Technology Digest since August 1996 and was featured during a technical lecture session at SPRSCS '97 late in January.

Setting aside the Colquhoun "one-off" version of the D9223, by February of 1997 we knew enough to make a D9223 work - after a fashion- on a DVB Compliant service such as the European Bouquet. But not work well. You could, with some careful operation of the keypad, access services such as Deutsche Welle or NBC Asia but the video was erratic (comes and goes) and the audio either not there at all or only there on occasion. Certainly the D9223 can properly do DVB Compliant MPEG-2, Colquhoun proved this to us. That SA was unwilling to make the same software they willingly gave to Colquhoun available to anyone else was a stumbling block. SA, to use a popular phrase, simply "stone walled" (ignored) any requests for access to this software and on many occasions actually denied it existed. None of this endeared the Pacific and Asian satellite world to SA.

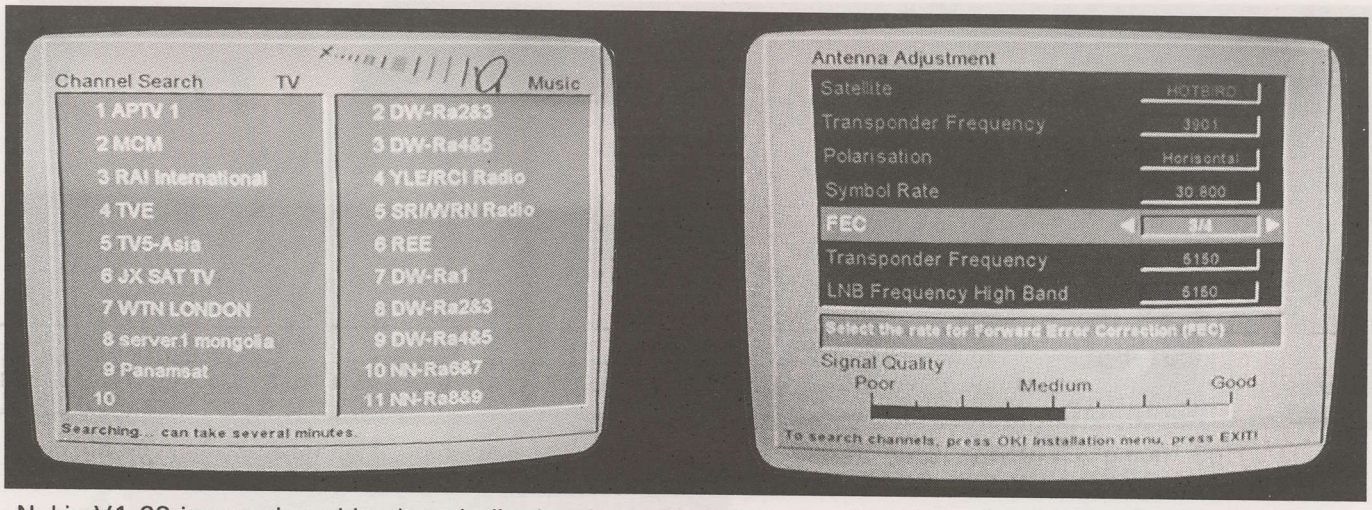
SA's PowerVu format software obviously contains one or more "software" bits (instructions) which make it difficult (we originally thought impossible) for non-SA receivers to decipher. SA apparently felt comfortable that it would be "some time" before a clever software person reverse engineered the PowerVu software and found a way to get around the "extra bits" with a non-SA produced receiver.

The Nokia 9500-S receiver, also a bit of a problem for users, was said as early as November to "have the capability to access PowerVu." The previously unpublished story is that a CD containing the modified software could be used to reprogram the Nokia receiver so that it would accept PowerVu. At least one reputable Australian distributor was led to believe he would have this disc in his briefcase for SPRSCS '97, and that he would be able to reload (as in reprogram) any Nokia 9500-S receiver he wished, to "do PowerVu." When the magic CD failed to appear at SPRSCS '97, we wrote the promise off as another "bad bit of information."

Now along comes a new PowerVu SCPC service on PAS-2 in mid-February; ESPN-2 (3707.5Hz, FEC 2/3, Msym 6.620). The report: "ESPN-2 is (back) on PAS-2 and my Nokia will receive it." Assumption one: ESPN-2 was in some FTA format other than PowerVu. We checked first with a DMV-3000 and sure enough there it was; perfect audio, imperfect video. Next we checked it with a Nokia V1.63 (9500 S) and low and behold, there was ESPN-2 just as reported. The audio and video were of good quality but there was an interesting artefact: Every 22 seconds the reception cut-off for 0.6 seconds and then returned. Annoying of course.

A second report: "I have the ESPN-2 service on my PowerVu. No, there is no break-up of reception." And a third and fourth from people in Australia equipped with prototype receivers first reported in SF30 - receivers that will claim the ability to do FTA DVB Compliant plus PowerVu: "ESPN-2 is clean and clear and it does not break-up."

So what makes the PowerVu ESPN-2 service different from the other PowerVu services - such that it can be received with the very latest DVB Compliant receivers? Had someone gotten hold of the Robin Colquhoun software and incorporated it into these new receivers? Colquhoun has routinely offered his software (which he considers his own since the original from SA has been



Nokia V1.63 in search and load mode (in drawing at top, right - satellite "sends" signal to dish) showing that yes, this receiver will find and load PowerVu (which Nokia lists as "Panamsat"; #9). Others listed are from AsiaSat 2 search and load. Right hand photo: V1.63 "report card" advising the loaded parameters for California PowerVu (3901 - 30.800 - 3/4), of which it "found" symbol rate and FEC on its own without being told by receiver user. With MCPC PowerVu, it is possible to "hear" CMT audio (California programme channel 1) but no video; see text.

significantly modified by Robin) for NZ$1,500. This is not a big price to be able to use it as a starting point for an entire new generation of "do-everything" MPEG-2 receivers.

Difference number one: ESPN2 on 3707.5Hz is SCPC, not MCPC. What does that mean? There is only one programme channel being transmitted, similar in fact to the Chinese SCPC services we reported first in January's SF. Could Nokia and DMV be gaining access to the PowerVu service of ESPN2 because of this? One way to find out - take a Nokia V1.63 to one of the PowerVu MCPC bouquets. The 1249Hz California PowerVu package would do (see photo, here).

Low and behold if you went into the "Antenna" installation menu and entered the MCPC parameters, and then backed out only part way (i.e., stopping just before asking to view the service) the Nokia V1.63 not only locked onto the PowerVu bouquet but there it was - CMT audio. Alas, no video.

There is no commercial value here - just an interesting observation. A Nokia V1.63 could do MCPC PowerVu, if only partially!

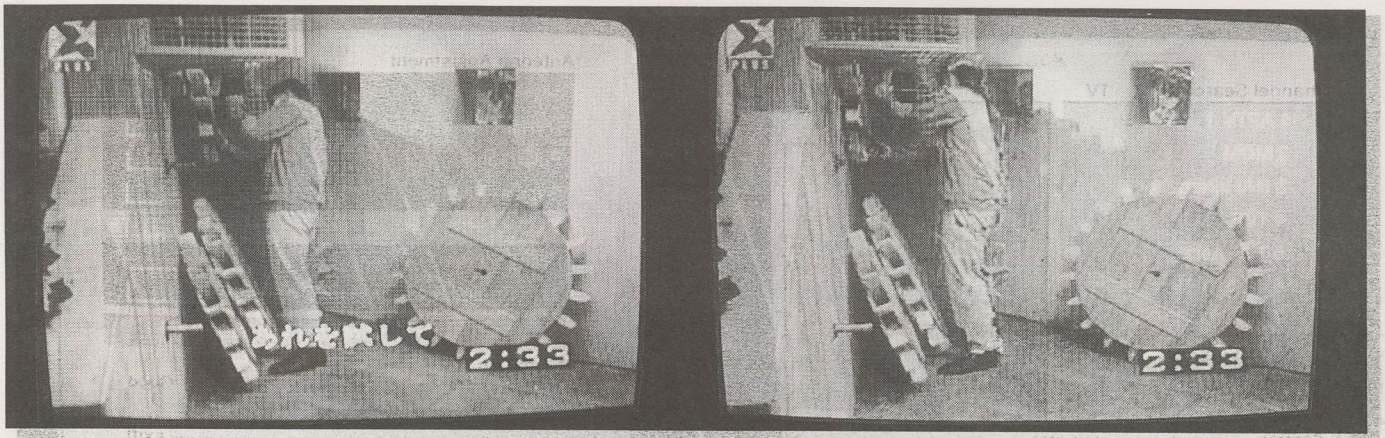
Now - the California MCPC is a mixed animal. There are FTA programmes (CMT is often FTA, as are CBS feeds, EWTN, BBC World and Bloomberg Financial) and there are CA channels (conditional access); ESPN and The Golf Channel for two. Suppose now you entered the parameters for say Singapore's TCS - a two channel service that remains FTA although MCPC.

Surprise. The Nokia refuses to recognise the Singapore transmission. Of the 11 PowerVu SCPC or MCPC packages presently on PAS-2, only Singapore's TCS refuses to be identified. On the Hong Kong MCPC (4148Vt), CCTV MCPC (3716Vt), Discovery MCPC (3776Vt), California MCPC (1249Hz) - all PAS-2, and the AsiaSat 2 Rebar (Taiwan) PowerVu (3785Vt) the Nokia V1.63 will at least load and lock onto the transmissions. No, with the exception of our experience involving CMT audio, it will not unlock the MCPC transmissions to view and listen to. Fear not S-A ... as far as the V1.63 is concerned, your secret is safe!

But perhaps not for long as several Australian and Pacific firms are promising delivery "before mid-April" of receivers that do DVB Compliant MPEG-2 plus both NTSC and PAL format FTA PowerVu. And there is the likelihood that Nokia will sort out their own software glitches shortly as well. An analysis of where we are

SO WHAT ABOUT THESE NEW "MPEG" SERVICES on PAS-2 Horizontal?

3804 MHz	1347 MHz	Mysm 21.093	FEC 5/6	Locks V1.63	Locks 9223	1 channel	Disney
3862 MHz	1288 MHz	Msym 19.465	FEC 7/8	Locks V1.63	Locks 9223	5 channels	Satcom 1-5
3942 MHz	1208 MHz	Msym 6.620	FEC 2/3	Locks V1.63	Locks 9223	1 channel	SCPC3
4104 MHz	1046 MHz	Msym 21.093	FEC 5/6	Locks V1.63	no	? channel	
4114 MHz	1036 MHz	Msym 21.093	FEC 5/6	Locks V1.63	no	? channel	
4150 MHz	1000 MHz	Msym 21.093	FEC 5/6	Locks V1.63	no	? channel	



Nokia V1.63 "doing" STAR TV Japan feed on AsiaSat 2 (3900Vt). Left hand, high quality image (audio is also OK). In right hand photo, Nokia has "locked" image (note jagged lines to right of man's back and compare bright diagonal line in centre, upper screen). Nokia does not properly process this signal, perhaps because it is NTSC, perhaps for other more complex reasons so "consumer viewing value" of this reception is not there (image locks every few seconds). On PAL format signals within other As2 bouquets, this locking does not occur.

today, and are likely to be next month, appears here on p. 13.

During the month of February several new MPEG family format transmitters began operation on PAS-2 (see prior page). SatFACTS initially located these new services with a spectrum analyser (an invaluable tool for spotting SCPC and MCPC services), and by knowing the approximate frequency from the analyser display then began the chore of entering into the Nokia V1.63 the likely frequencies. One of the primary advantages of the V1.63, which the SA D9223 does not do, is that if you can locate the actual frequency, the receiver will on its own sort out what the Msym and FEC are for the transmission. An example: We read from the analyser the 3803 MCPC at 3798. The Nokia tried but couldn't quite resolve it. We bumped the frequency up to 3800 and the Nokia quickly locked on and told us it was actually on 3803 - with Msym of 21.093 and FEC of 5/6. Generally, if you get within 3 MHz of the correct C-band frequency with the Nokia for an MCPC, or 2 MHz for a SCPC signal, it will find the signal, lock on and then advise you of the balance of the parameters (1).

The SA Status

In recent weeks numerous people have ordered at least one D9223 receiver because of the publicity attendant to the SPRSCS '97 "Show 'n Tell" by Robin Colquhoun. This may not be a smart move for the following reasons.

1) The SA D9223, current version software, is not the same software which Robin Colquhoun has in his version. Yes, after a fashion, the D9223 you buy today will do some FTA DVB services - but none well. Common problems: Video that freezes and starts again every few seconds or audio that is either not there or only works intermittently.

2) SA's Sydney office is having a difficult time adjusting to dealing with non-professional accounts. One-off receiver sales to individuals is brand new to that office. They are not coping with the customer service aspect of it very well.

3) The D9223, pending arrival and test of the various late-March / early April promised Taiwanese "do everything" receivers, may not be what you are looking for anyhow. The only reason to buy the D9223, given the myriad of special problems that come with each receiver, is that you may wish to have a subscription activated for one or more of the non-FTA services that broadcast using PowerVu.

SA Sydney now maintains a reasonable quantity of D9223 units in stock (top of 25, in theory a minimum of 10; another source that tries to keep a minimum number in stock is Telsat Communications).

4) The presently FTA PowerVu services, other than EWTN which is committed to being FTA forever, may well not be FTA next week or next month. That ABN or Bloomberg Financial are FTA, and have been for more than six months, is certainly no guarantee they will remain that way. And if an alternate brand of (Taiwanese built) receiver gives you FTA PowerVu in addition to DVB MPEG-2 FTA services, it certainly makes more sense to purchase the unit that will do the FTA DVBs as well. Remember, the D9223 does a poor

1/ The frequency numbers given in our report can be affected by our particular LNB and some variation in IF (intermediate frequency) readings for different LNBs can be expected. The SA D9223 may lock onto a PowerVu signal when off by up to 2 MHz, but the AFC indication will show you are off frequency and you should correct it for reliable service. The Nokia V1.63 will find and reset itself to the PowerVu frequency if you land within 2 or 3 MHz of the real frequency when in a search mode. The SA tells you (through the AFC monitoring) to correct the input frequency - the Nokia does it for you, automatically.

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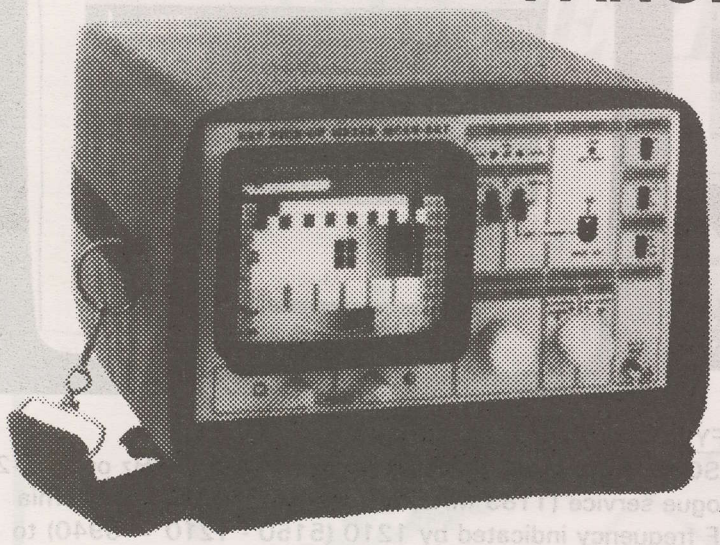

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TUNING:Multiturn potentiometer
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INPUT ATTENUATOR : 0.10 & 20 dB USING 3 POSITION SWITCH

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POWER SUPPLY : 12V, 3 AH battery
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CHARGING TIME : about 4 hours
DIMENSIONS : 240 x 140 x 270mm
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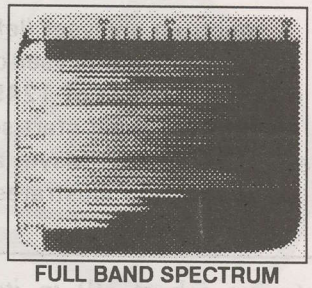
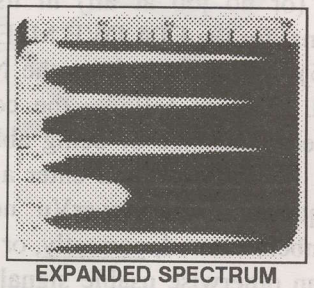
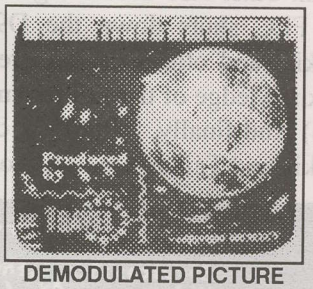
ACCESSORIES INCLUDED :Measurement cord, AC mains adaptor, charging lead for car cigar-lighter, case.



FULL BAND SPECTRUM



EXPANDED SPECTRUM



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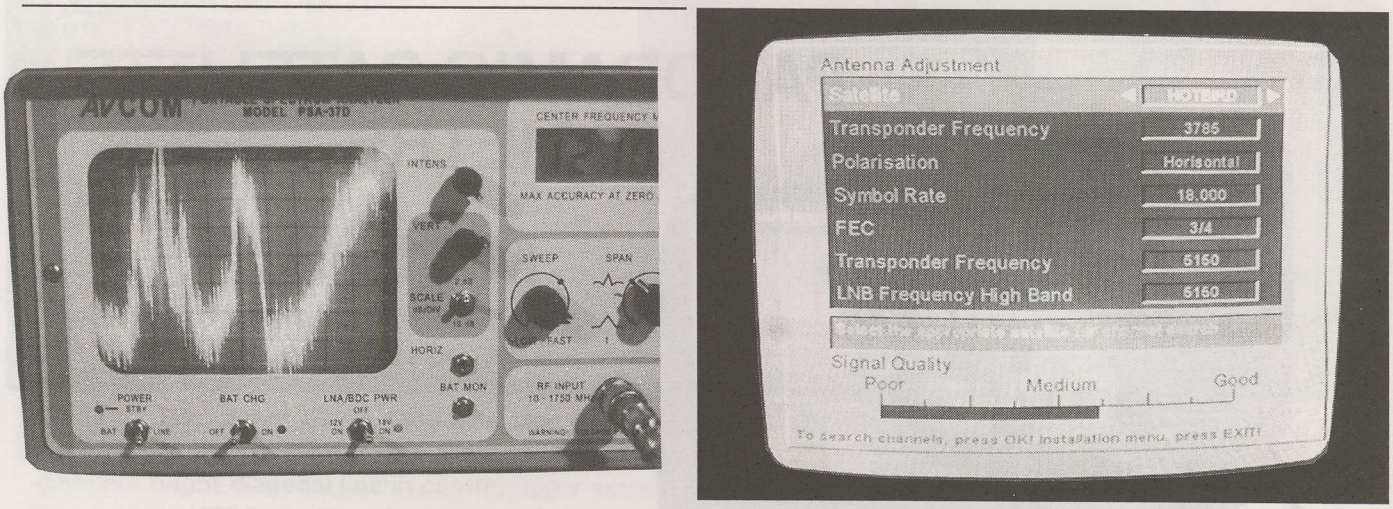


LOCATING / IDENTIFYING NEW MPEG-2 SERVICES

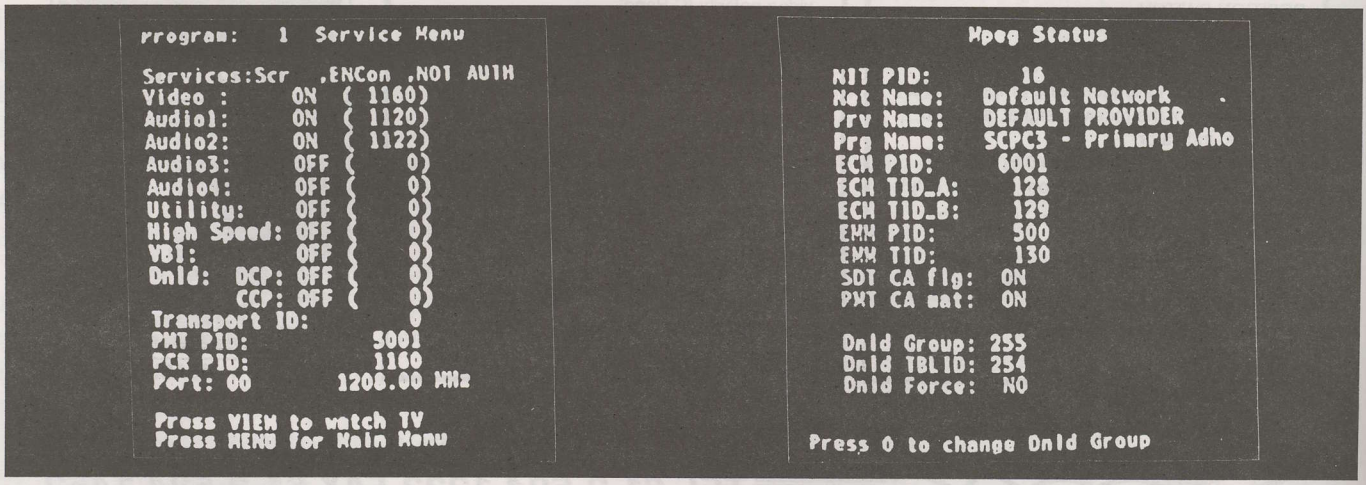
A spectrum analyser (left) shows location of SCPC (narrow band MPEG) service at 1210 MHz on PAS-2 horizontal. On analyser display left, CNN analogue service (1183 MHz) and at right - edge of California PowerVu (centre of 1249). Now plug in the RF frequency indicated by 1210 (5150 - 1210 = 3940) to Nokia V1.63 and start search routine. Within a minute it locks and and tells you (right hand photo) the actual frequency, Msym and FEC of the mystery service (note: this particular photo of As2 3785 - Rebar TV in Taiwan - illustrates the kind of display you will see after the Nokia "locks on." See photos below.

job (or no job at all) in its out-of-the-box software format for the FTA DVB MPEG-2 services.

5) Receivers such as the Nokia V1.63 (and, we are told, those to follow the coming 45 days) have the added advantage of being able to work out the Msym and FEC rates if you enter a "close enough" RF input frequency. The PowerVu needs all of the relevant numbers entered, correctly, or it will ignore the presence of an otherwise usable signal. Even being off one step on FEC shuts down the D9223 service whereas the Nokia (and others) will correct your oversight (or lack of knowledge of the right numbers to enter) for you.

6) And finally, the D9223 costs more in US$ than the Nokia and Taiwanese units cost in NZ$ or even A$.

Does all of this mean the D9223 is history? Not at all. Setting aside the obvious need for a D9223 when conditional access (subscription) service is required, at the present time there are technical data parameters which the D9223 does that as far as we know the competition does not do. An example, following on from top photos, is shown below. By feeding D9223 with MPEG parameters uncovered using Nokia V1.63, the D9223's menus reveal PID parameters and identity of the previously unidentified service. This technique can be used with any PowerVu service initially located with the Nokia. No doubt future competitive models will allow access to similar menus but at this point in time, the D9223 is the winner for acquiring this data (**2**).



Enter Nokia provided numbers on D9223. Service menu (press Menu, "0") on left shows service is not authorised although D9223 does lock. To identify name of service push view and then enter Menu-user-next-yes-"3"-"9" which brings up MPEG status menu. Now - it says 3940 programme name is "SCPC3 - Primary Adhoc," used for individual programme transport by PAS-2 (on screen display at right).

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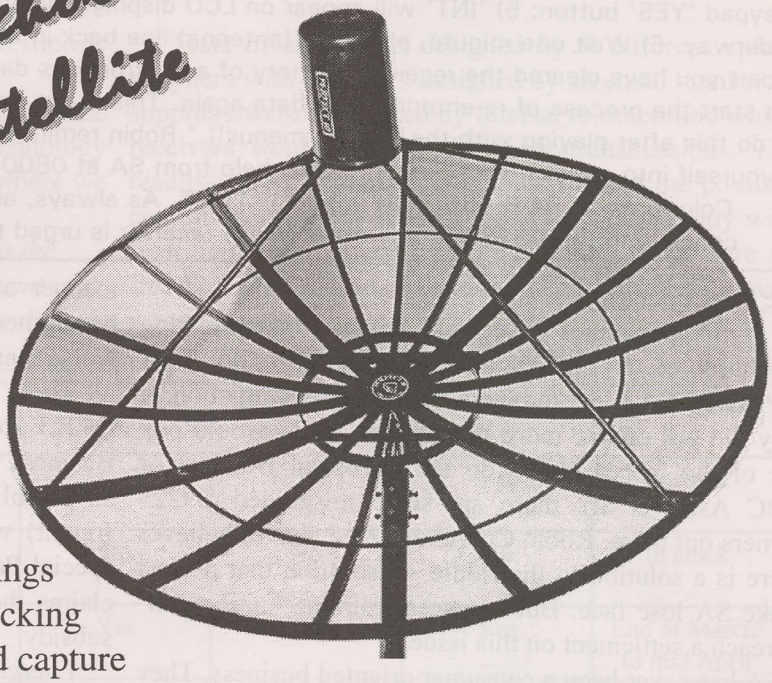

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WT442P	4.4m Polar Mount 8 Panel

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Robin Colquhoun Tips for Better Use of D9223

"At the risk of offending those who are capable technicians, let me first suggest that before you hit the panic button seeking outside assistance (whether from me or SA) - *be certain there is a problem*. There are now sufficient MCPC (and SCPC - ed) PowerVu services operating that if one does not work right you should check on another before deciding the receiver itself is to blame. The SA D9223 has an enviable performance record and I am advised the majority of units returned to Sydney for 'repair' are not broken to begin with. If after eliminating LNB, splitter, IF line level potential problems you have any of the following problems: 1) Good picture, losing audio; 2) Solid lock (indicated by steady green LED at top of front panel display) but no video or audio; 3) Audio but no picture; 4) or other type of 'funny' reception - do this. Factory Reset: 1) Unplug antenna line from LNB F fitting; 2) Press ALT button once (Alt LED will flash); 3) On front left panel push 'CH UP' and 'CH DOWN' buttons simultaneously; 4) 'do?' will appear in front panel display - push keypad 'YES' button; 5) 'INT' will appear on LCD display indicating re-initialisation of receiver parameters is underway. 6) Wait one minute, plug LNB (antenna) line back in after 'STANDBY' light comes back on. At this point you have cleared the receiver memory of any erroneous data it may have picked up and you are ready to start the process of re-entering new data again. This is not an uncommon procedure (i.e., I often have to do this after playing with the various menus!)." Robin reminds readers that when you have really gotten yourself into a mess, you can get expert help from SA at 0800-444-151 (from NZ) or you may call Robin Colquhoun at 64-9-630-7127 after 8PM NZT. As always, anyone who has found other helpful tips concerning the D9223 or any other MPEG receiver is urged to send along the details to SatFACTS.

The SA Conundrum

If SA personnel never told anyone contemplating purchase of a D9223 receiver, "It will do FTA MPEG-2," SA is not to blame for the current situation. If they did tell one or more buyers the D9223 would pop out of the box ready to do the European Bouquet or NBC Asia (et al), there are some misguided D9223 owners out there. Robin Colquhoun (see above) believes there is a solution to the riddle - a solution that doesn't make SA lose face. But he urges restraint "until April" to reach a settlement on this issue.

SA has never been a consumer oriented business. They now find themselves, because of EWTN, CCTV and other "permanently FTA" services, dealing with consumers who have very little or no appreciation for the technology involved. Recently they have been pointing out to unhappy buyers, "We are not Dick Smith Electronics - people cannot simply bring back a receiver because they are unable to make it play."

SA's Sydney staff is technically oriented. It is not skilled in dealing with telephone queries from people SA perceives are not at least on their level of technical skills. "Do you have the receiver connected to an antenna?" and "Have your turned the receiver on?" are examples of their response to people calling for assistance. Those who are at least on their level find this manner of questioning condescending and for this SA has earned a reputation of being either "not helpful" or worse than that - not interested in helping.

There are sub-issues as well that are plaguing the D9223 rollout; issues that may well damage the new Business version (model 9234) if not corrected. SA has an established price (US$1,295 plus US$150 for air freight) which anyone pays. This price is actually a special PanAmSat "negotiated PAS user price" and SA claims the D9223 is US$1,695 without the PanAmSat subsidy.

Everyone knows the ($1,295) price and there is no dealer discount, no such thing as a marketing program that recognises stocking distributors or dealers. Users can buy directly from SA Sydney or they can go to sources such as Telsat Communications Ltd and pay several hundred dollars more (in local currency) for the same receiver. There is very little incentive for a firm such as Telsat to stock the D9223 unless they can "add value" to the receiver when reselling it. The common approach to adding value is to package the receiver with subscription programming (CMT has been an obvious choice, ABN is also offered). Another way of adding value is to promise prompt technical assistance, even a "spare" to the buyer if the purchased unit fails for some reason. Sydney has no similar software subscription program (**3**).

So SA has been dragged, against its will, into the consumer marketplace and by having no dealer /distributor remarketing program it ends up receiving full blame for everything that goes wrong - including user application error. SA can get out of this situation only by creating a workable dealer resale program and forcing dealers to fit between the present end users and the SA Sydney office; a buffer as it were to the mistakes that people will make, and the repercussions that ensue. Or SA can do nothing and watch the Pacific market disappear to the Asian firms. The clock is ticking.

2/ The DMV/NTL 3000 also provides access to essentially the same data and it is reported that by pressing "radio", "99" and "radio" you can gain access to data within the Nokia V1.63. However no real research has been done with respect to the Nokia on this issue to date and we caution those exploring that you could end up in a "lock" mode from which there is no obvious escape!

3/ SA Sydney does maintain a "hot spare" pre-authorised for all PowerVu services as a safety net for commercial users; not for private users.

STATUS OF MPEG-2 RECEIVERS MARCH 1997

Should you purchase an MPEG-2 IRD at this time? Several calls each day ask that question of SatFACTS. Actually, most who have not yet purchased their first are certain they should buy - now, and their real question is more obvious: Which receiver???

We first visited the world of "interoperability" in SF22 (June 1996) and devoted an issue of Coop's Technology Digest to the subject last July (issue 96-05-28) where we noted from an Intelsat Labs release:

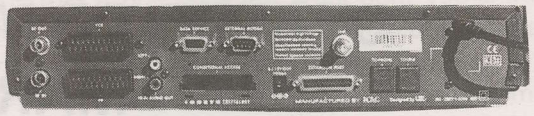
"Reception equipment is locked as a slave to the transmission equipment. If the reception equipment is to perform at all, it must recognise and respond to digital commands originating at the programme creation centre."

Tests of equipment designed by 9 different uplink suppliers with receivers designed by an equal number of suppliers were conducted by Intelsat to determine which receivers would work with which transmissions. The results were disappointing as only 14% of the possible combinations worked. Most receivers worked only with their own co-produced transmitters. And these were all free to air (FTA) tests - conditional access was not even a consideration!

Model	Source (telephone)	Msym 3-31?	Does SCPC?	Does FTA PowerVu?	Does NTSC?	Availability?
DMV (NTL) 3000	Skandia (61-3-9819-2466)	Yes	Yes (**1**)	No (**2**)	Yes	In stock
Grundig DTR 1100	AvComm (61-2-9949-7417)	No (18-28)	No	No	No	In stock
Kristal K100	Kristal (61-7-7791-565)	Yes	Yes	Yes	Yes	End of March/ to mid April
Nokia V1.63	G&G (61-8-8941-8860)	Yes	Yes	Yes - with glitches	Yes - with glitches	In stock
Nokia 1.7X (**3**)	OPAC (61-2-584-1233)	Yes	Yes	Yes - with glitches	Yes - with glitches	In stock
PACE DGT-400	Galaxy offices Australia	No (15-30)	No	No	No	In stock
PACE DVR 500	BaySat (64-6-843-5296)	No (15-30)	No	No	No	2 weeks ARO
Pacific Satellite MPEG-2/DVB	Pac Sat (61-7-3344-3883)	Yes/ 3-45	Yes	Yes	Yes	End of March/ to mid April
Panasat 520	OPAC (61-2-584-1233)	No (18-28)	No	No	No	In stock
Panasat 630	Antares (61-7-3205-7574)	No (18-28)	No	No	No	In stock
PowerVu 9223	Telsat (64-6-356-2749)	Yes	Yes	Yes	Yes	In stock
Samsung VS2000	Pac Sat (61-7-3344-3883)	No	No	Yes in PAL	No	Mid-March
Skandia SK888	Skandia (61-3-9819-2466)	No (15-31)	No	No	No	In stock

1/ YES - does SCPC (such as WTN) but will NOT do Chinese. **2**/ Does FTA PowerVu such as ESPN2 SCPC but only audio is 'clean'; not recommended for video. **3**/ German re-engineered software version of the infamous "d-Box"; all instructions in German. Nokia is not pleased this is being sold out here.

PANASAT 630



This receiver supersedes the original 520 (which continues to be available in some areas). The 630 rear panel is essentially "flopped" from the 520 indicating a major chassis redesign; for example, twin SCART outputs on 520 are rear-right while on the 630 they are rear-left. The 630 also adds a built-in telephone modem (two jacks: Line In, telephone) to allow the IRD to communicate with the service provider (useful for ordering product, NVOD movies) more or less automatically. Data service and external modem RS232 jacks are included on both as is the CA module slot. Most of these changes make the 630 useful for new European (Eutelsat) MPEG service bouquets; there are presently no Asia or Pacific bouquets which will make full use of the 630 capabilities. Performance: Installation PIN number is 9949 (same as 520). Unlike some 520s, the 630 sets up quickly and seems to be fault free. Picture quality is very good, ease of use is OK but not great (at the user level after the installation entries have been completed). Shortcomings: Limited Msym range (18 to 28+ - manual says 28 but it does EBB OK) and default settings are for 12.5175 GHz which means everything has to be reset for C-band.

By July Scientific Atlanta was issuing press statements claiming its equipment was "the most interoperable" of all equipment tested. As CTD for July reported, such a claim was questionable for a number of reasons. The full text of the Intelsat Labs report on "Interoperable Receiver Testing" clearly explained that each receiver tested had a factory supplied engineer in attendance and if the initial turn-it-on and see-if-it-receives test did not produce picture and sound, then the factory engineer was given the time to "play" with his receiver to make it work with the "foreign MPEG source." In as much as very few people purchasing a receiver also order a factory engineer to come with the receiver, the claim of Interoperability was at best suspicious.

That the SA D9223 would not pop out of the box and immediately work with say the European Bouquet was admitted by SA in July to our CTD publication. SA then offered:

"Scientific-Atlanta has demonstrated its leadership and advocacy of interoperability. However, since success is impacted by both encoder (i.e., transmitter end) and decoder software revisions, control messages, user interfaces, SI, symbol rates, FEC rates and video formats (among other things), our products must be tested with each (transmission system) under consideration. If Scientific-Atlanta's PowerVu IRDs are desired to work with another vendor's encoding system, we will be happy to discuss with you the business terms and conditions under which such testing will take place.

"Should these tests prove successful, Scientific-Atlanta will guarantee that the PowerVu IRDs we ship will meet the same product specification used in the network tests. If the other vendor changes their product software after the testing takes place, Scientific-Atlanta will not guarantee the interoperability of its products in the network."

S-A then offered to convert one D9223 to receive one EBB programme channel, for a fee. "*However*," they warned, "*this receiver will only receive that (one) single* (EBB) *channel and nothing else*." And that was last July.

What this tells us is that within the DVB MPEG-2 world, the advances in software "interoperability" have been extremely rapid since we now have receivers which do not only FTA PowerVu but also a range of SCPC and MCPC DVB MPEG formats as well. That you cannot purchase such a receiver today, from SA, says volumes about their June 1996 "interoperability claims."

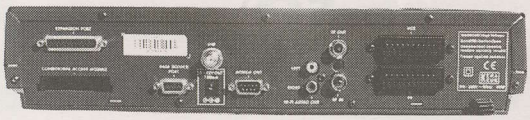
What To Ask About

1) **FEC rates**. Ranges from 1/2 through 7/8 in steps. To date, there have been no receivers released which do not do the full range; this should not be a trap for unsuspecting players.

2) **Msym** (mega-symbol-rate) **range**. This is a potential trap. Because of MPEG-2 decoder chip set choices, some receivers will do a wide range (such as 3-45 which means 3.000 to 45.000) while others will do a much smaller range (such as 18 to 28). SCPC signals are typically in the smaller range (i.e., below 15 and more often below 8) while MCPC services are typically 8 upwards. An SCPC service has only one digital programme channel on board; an MCPC service has two or more programming channels. Of the 36 services listed on pages 26 and 27 here, 22 are SCPC. The first receivers (DGT-400, DVR500 et al) were all limited to Msym ranges from 15 to 30 and indeed some of the present "best buys" (Skandia SK888) are also limited to this range.

3) **NTSC versus PAL**. There are variations in the transmission formats for the various terrestrial TV standards (NTSC, PAL, SECAM) and not all receivers will do all formats. A receiver that does PAL only with the ability to match FEC, Msym and other parameters may not properly receive an NTSC service even if all of the other "numbers fit." A common problem in this case is that the video will come out in a tint you find unpleasant, with a greenish film over the top of the

GRUNDIG DTR 1100



This receiver is the Panasat 520 IRD as produced for and modified by Grundig. Fear not - it does not work like the original 520s (erratic reception, unstable operation). The DTR 1100 is quicker to set-up, easier to program, more reliable in operation than the original 520. And it has the world-wide resources of Grundig behind it - which should be a plus. With several 520s to compare it against, we were very pleased to see that the DTR 1100 is an improved model in all respects including the video quality. We are told the Grundig version software has been essentially redone for the 1100 and certainly something has been changed to eliminate the 520 problems. Plus: CA Module capable (ours, like most now being shipped to the Pacific, did not have a CA module included). Negative: Factory specified 18-28 Msym rate (but it does EBB OK at 28+).

video, or randomly switches from perfect reception to distorted reception perhaps several times per minute.

4) **MPEG-2 versus PowerVu.** If you started this issue at the front and are working backwards, you already know this trap. FTA PowerVu is the latest wall to crumble; it will not be the last. Ahead - receivers that can be addressed for conditional access PowerVu - without an SA name badge on the front. It will happen -but probably not this year.

5) **Brand awareness**. SA receivers best like SA (PowerVu) uplinks; DMV/NTL receivers best like DMV/NTL uplinks. Philips receivers - you get the picture. And it is all a part of the game manufacturers have played (until now) to "protect" their own turf. Hey - if Philips can sell an uplink or two (or 9) in China and then if only Philips receivers will receive the uplink(s) - well, it is a form of market protection. Naughty - yes; good business? Perhaps. SA with their PowerVu is the largest player in this game and with any luck "interoperability" will win out in the end.

6) **CA - conditional access**. Most receivers now being shipped in quantity come without a CA module. It is smart to know which CA module will fit the receiver you are considering. The industry standard at this time is Irdeto, a Dutch financed South African firm that seems to have most of the early patents in their name. You may not want or need a CA now, only wishing to browse the FTA programming, but it is wise to know what type of CA will fit your receiver and that the format for a CA is built in to accept the module at some future date.

Ask if a CA module is available at this time. The answer is probably no. Ask if the supplier will guarantee the future availability of a CA for your receiver - when it will be available and at what approximate cost. Some services, such as Measat India beam, are FTA MPEG but will not work without a CA module inserted into the receiver (at best you will have audio only without the CA module inserted, even while the telecaster is in the FTA mode).

A receiver that will not accept a CA module is not necessarily a bad deal - but it will remain a FTA receiver forever. Be warned. Oh yes - neither the SA D9223 nor the Nokia V1.63 (or other Nokia versions) have (Irdeto module) CA capability.

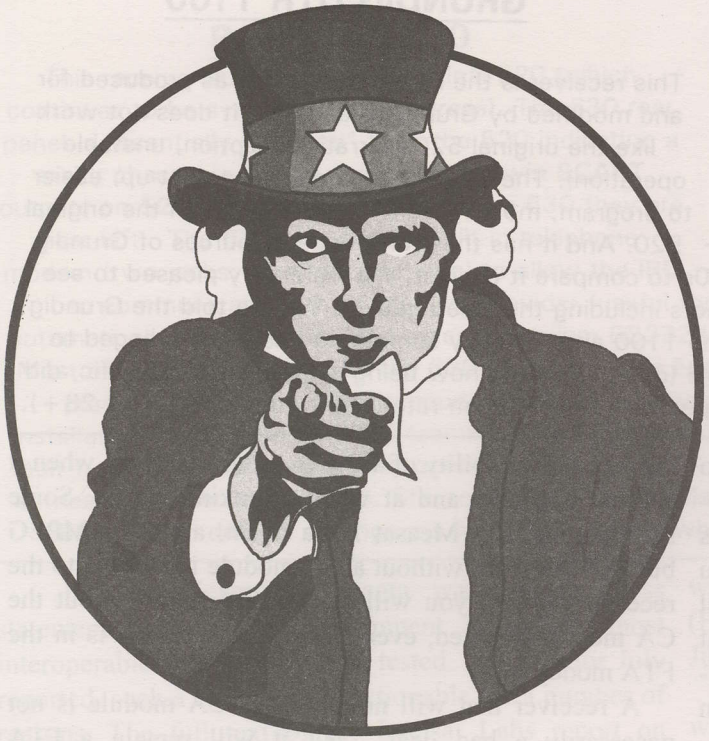
7) **Heat**. Virtually all present generation MPEG IRDs have a relatively modest operating temperature limit. The more complete data sheets suggest 40C as a maximum temperature in many cases. An enterprising IRD designer will figure out 40C is marginal and create a system to allow a hotter IRD to still function. Most of the receivers that have "heat problems" simply freeze up when they become too warm, even to the extent they refuse to acknowledge or accept remote commands.

8) **Output side**. Many IRDs require a SCART plug to connect the receiver to whatever follows. Not all receivers have a SCART cord packed in at the factory. The ideal receiver will have RCA outputs for video and audio (twin audio, for stereo, since most MPEG-2 is stereo-capable) plus one or more SCART terminals (one for TV, one for VCR, one for an external decoder).

Bottom Line

These remain "early days" for DVB Compliant receivers. More creative, less costly, do more receivers are coming, fast. Give it 12 more months to mature.

Feature	Grundig 1100	Nokia V1.63	Pace DVR500	Panasat 520	Panasat 630	SA D9223	Skandia 888
Video jack out	No	No	Yes	No	No	Yes	Yes
SCART Video	Yes	Yes	No	Yes	Yes	No	No
RF Out	Yes	No	Yes	Yes	Yes	No	Yes
Audio jacks out	Yes	Yes	Yes	Yes	Yes	Yes	Yes



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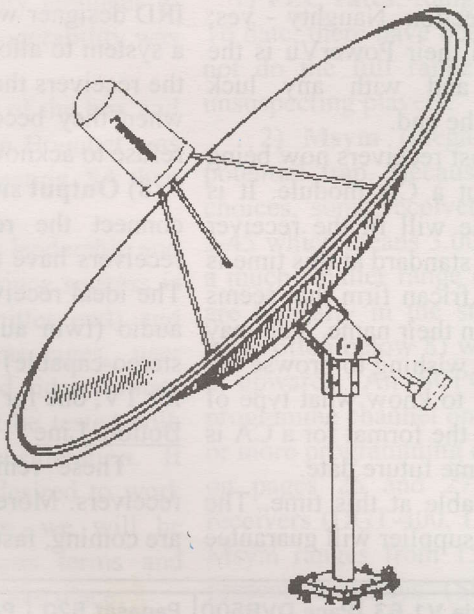

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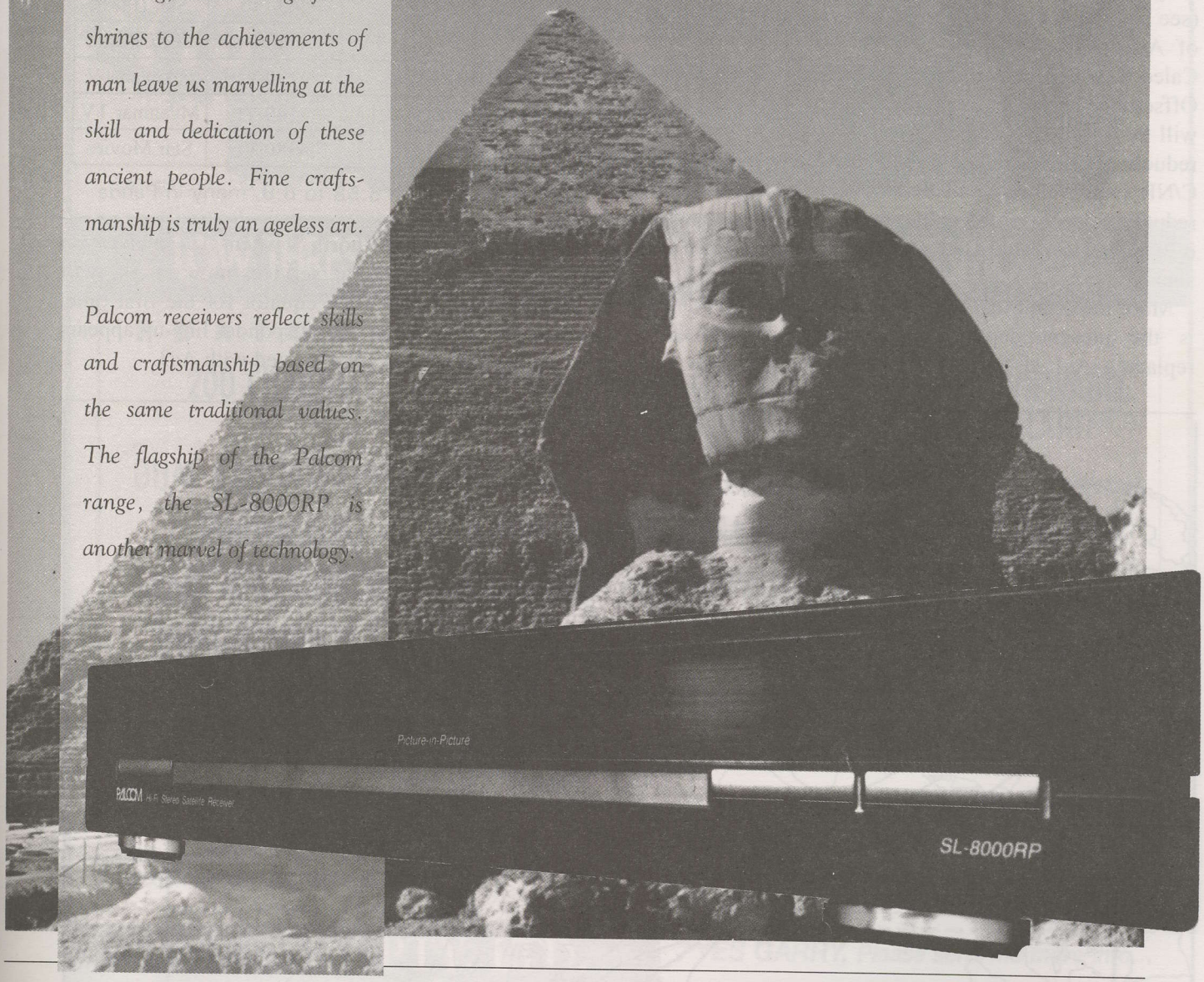

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AsiaSat 3 COULD BE A BARN BURNER

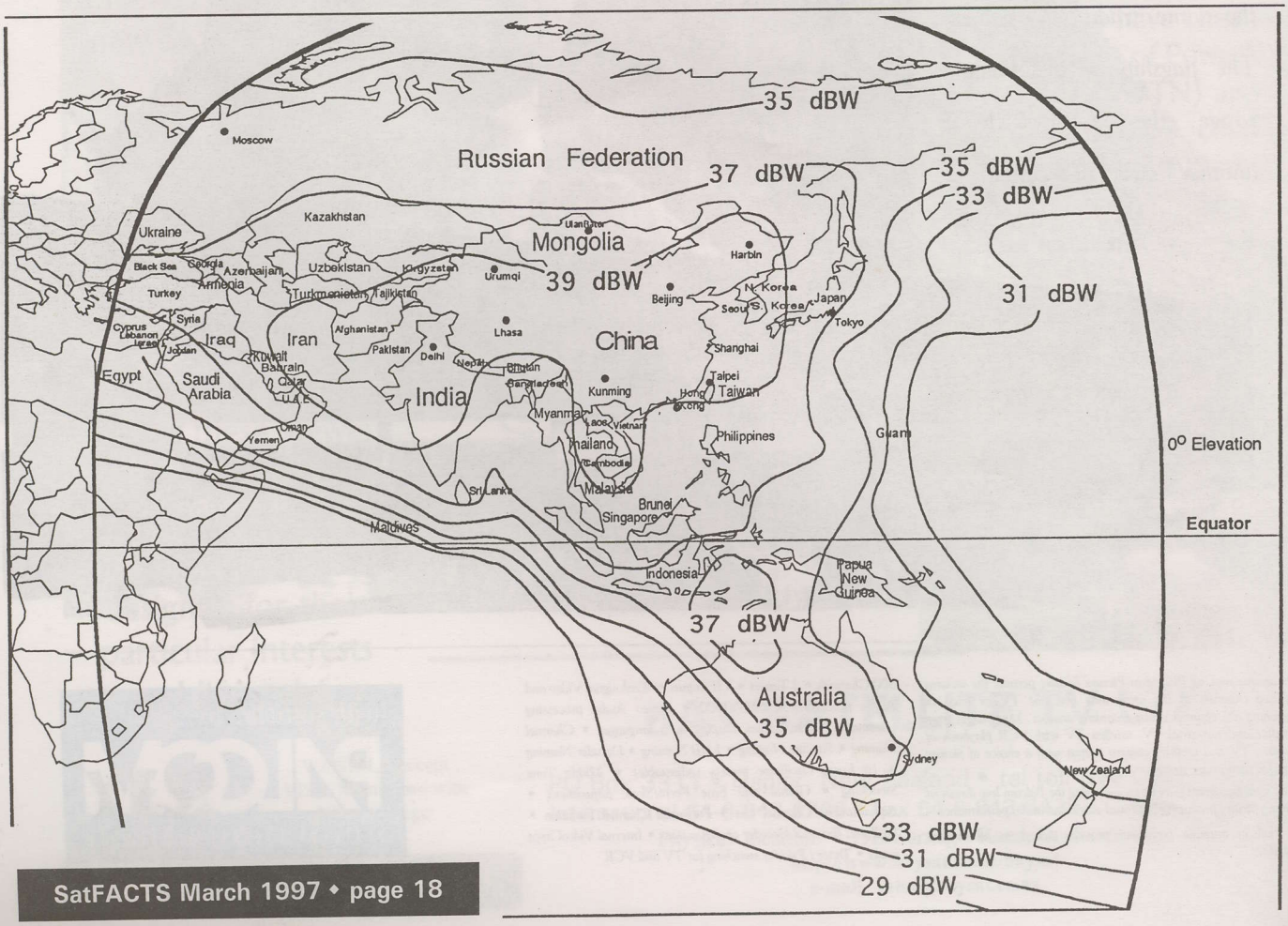
The scheduled December (date uncertain) launch of AsiaSat 3 to 105.5E may have more relevancy for home dish system installers in the Pacific and Asia than any other event of the year. And following the pattern established by AsiaSat 2 (100.4E), the satellite could be testing shortly before Christmas.

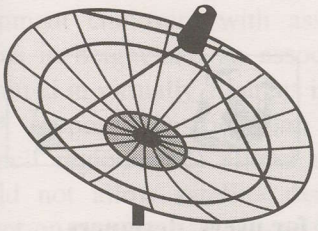
AsiaSat 3 has coverage very similar to AsiaSat 2 with on ground eirp levels almost precisely the same as As2 (see below). Levels will be equal to As2 in virtually all of Australia, down 1 to 2dB in New Zealand, New Caledonia and Japan, and down 4dB over Guam. Offsetting the lower levels for NZ and the mid-Pacific will be a 5 degree higher look angle, and a companion reduction in earth noise (which for many will mean a C/NR improvement considerably greater than the eirp reduction because of a reduction in the "N" component of C/NR). Net result: Better pictures even if slightly less signal.

More important that the levels and higher look angles is the present deployment (loading) plan. As3 is replacing As1 at the same location and whereas As1 essentially points only "north," when As3 arrives on station and is turned on, the services now on As1 will suddenly appear south of the equator for the first time. The present As1 (to be As3) transponder line-up appears here but major changes are expected with As3.

3760 Hz	Chinese TV1		
3800 Hz	Prime Sport		
3840 Hz	Channel [V]	3860 Vt	Prime Sport
3880 Hz	Star Movies	3900 Vt	Channel [V]
3920 Hz	Phoenix Ch.	3940 Vt	EL TV
3960 Hz	Star (Plus)	3980 Vt	Zee TV
		4020 Vt	Star (Plus)
4040 Hz	Yunnan TV	4060 Vt	Zee Cinema
		4100 Vt	Pakistan TV
4120 Hz	CCTV 4	4140 Vt	Myanmar TV
		4180 Vt	Star Movies

Audios range from 5.58 to 6.8, many in Panda





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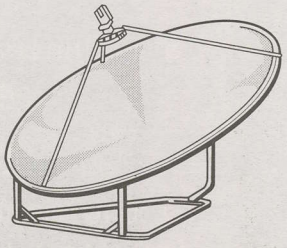

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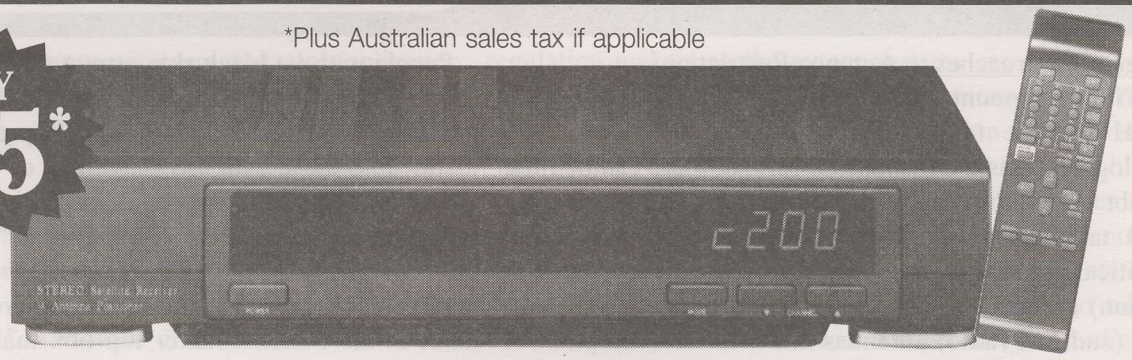

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Logical Approaches to Antenna Restrictions

With the amount of money being risked world-wide on DTH satellite television and the trend to give up analogue TV as a transmission format, there can be little doubt that within the next ten years a profound change will take place in television delivery systems. Most political divisions (town, city, District, state or province, nation) accept the appearance on rooftops of terrestrial TV (and FM radio) antennas and with the exception of new subdivision developments few attempt to regulate rooftop aerials for aesthetic, safety or health reasons. The logic behind this lack of regulation is straight forward: People wish television and for most viewing locations an external (outdoor, usually rooftop) aerial is required for quality service. To ban use of external aerials is to deny access to quality television reception for residents of an area. No politician could be elected on that platform.

Terrestrial rooftop aerials are the norm: We see them, they are so common place as to register "invisible" to most eyes. The same cannot be said for a satellite dish. Because they are not yet common (except in portions of North America and Europe) they "register" to the eye. And because they are uncommon, they attract attention of those who are uncomfortable when faced with anything uncommon.

Technically, a satellite dish is a microwave receiving antenna; an aerial. It radiates no energy, presents no health hazard and if properly installed creates no safety issues. It performs the precise same function as a rooftop VHF/UHF television aerial.

People with jet black skin attract attention in Japan or China because they are uncommon. Yet beneath the skin the human body parts are for all practical purposes identical to those with brown, yellow or white skin.

Satellite antennas happen to operate in a portion of the radio spectrum called "microwave." That is an unfortunate fact of life because to almost every non-technical person in the world, "microwave" means a made-in-the-Orient counter top box that turns red, raw meat into brown, smouldering edible food in minutes. In non-technical minds, a "microwave dish antenna " (i.e., satellite aerial) must somehow harbour similar operational characteristics. Nobody wants to live next door to a home that has a microwave oven on the roof with its door open.

Land use planners are increasingly facing the challenge of prescribing regulations for "microwave dishes." A 1.2M microwave dish that transmits data from an office building to a central point across town looks for all purposes to be identical to a 1.2m satellite receiving aerial. One "radiates" energy with sufficient power to cook a red piece of meat in a matter of minutes, the other radiates no energy of any perceptible form. Faced with regulating "microwave dishes" the planners believe it is better to err on the side of safety and simply eliminate both categories.

Elimination may be overly harsh. In most political jurisdictions certain activities (installing a microwave dish is considered an "activity") attract different descriptive terms based upon (1) the activity, and, (2) where it will occur. For example, "Card Phone" and

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Membership in SPACE Pacific is open to any individual or firm involved in the "satellite-direct" world in the Pacific and Asia regions. There are four levels of membership covering "Individuals," the "Installer/Dealer," the "Cable/SMATV Operator," and the "Importer/Distributor/Programmer." All levels receive periodic programme and equipment access updates from SPACE, significant discounts on goods and services from many member firms, and major discounts while attending the annual SPRCS (industry trade show) each January in Auckland. Members also participate in policy creation forums, have correspondence training courses available. To find out more, contact (fax) 64-9-406-1083 or use information request card, page 34, this issue of SatFACTS. Page space within SatFACTS is donated each month to the trade association without cost by the publisher.

"Coin Phone Boxes" are a "Permitted Activity" in residential, business, industrial, rural, public reserve zoned areas, and along formed roads. A meteorological equipment enclosure with associated mast up to 10 metres in height and an associated microwave link is permitted in virtually all areas including residential (**1**).

A proposed District Plan for the Matamata-Piako Council region (NZ) allows all of the preceding yet would not allow satellite dishes in residential areas except on case by case discretionary approval. It would allow "radio or television masts" (i.e., home TV receiving aerials) under the permitted activity category.

The essence here is that one form of television antenna - the "invisible form" which we have all grown up with and now choose to ignore is permitted; no application form, no engineering drawings, no public notices for neighbourhood objection processes, no special fees. But the "visible form" - a "microwave (satellite) dish" will require all of these burdensome routines. It makes about as much sense as prohibiting Michael Jordan from walking down the streets of Tokyo without a special permit to do so.

Requiring each "microwave dish" installation, without respect to whether it is simply a television receiving aerial or a perhaps hazardous computer data link, to follow the special, complex, costly and often burdensome regulations of "discretionary approval" is an unreasonable exercise of community policing powers. As regulators in Australia have learned and are still learning with the Galaxy service, and as New Zealand regulators will learn with the April launch of the SKY Network satellite service, there is a major difference between attempting to force discretionary procedures onto a few dozen "microwave dish" installations in a district annually and several thousand each year. The sheer weight or burden of dealing with hundreds of installations each month quickly forces regulatory reconsideration of existing or planned rules. None of this attacks the real core of the problem. Most anti-satellite (microwave) statutes exist because bureaucrats have taken the easy route to writing regulations. "Microwave" is a red flag, the "odd physical dish shape" is a second warning flag, and the monster 7 metre dishes of yesteryear which launched the satellite evolution a decade ago are all significant concerns.

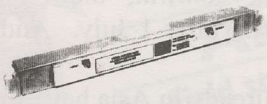
What is missing is an educational program that explains why 1997 and beyond satellite dishes are no more a threat to public aesthetics, health or safety than allowing terrestrial VHF/UHF antennas to sit on rooftops. It is not enough to gain mere "approval" for satellite dishes - we must see them moved from "discretionary" to "permitted" activity status within the regulations of each political jurisdiction.

Our objective is not to figure out "how to get around" the present regulations - it is that we educate the regulation makers to the extent that the regulations are simply dropped. This is no small challenge given the public outcry that attaches to any mention of the word "microwave" and then marries that word to "antenna."

Getting from where we are now - unique rules in virtually every political subdivision - to where we would like to be - uniform "permitted activity" status throughout all political subdivisions - is going to take time, money spent to educate, and most likely an endless series of one-on- one and public meetings. The growing presence of Galaxy and SKY will help but in the end we are still going to have to do the leg work ourselves.

1/ Perhaps the public safety aspect of a meteorological station with a microwave link transmitter overrides the normal concerns involving microwave dishes and transmitters, but this "permitted activity" in a residential area stands out as a glaring example of non-uniform application of standards.

FILTERS FOR CABLE TV YEAR #30**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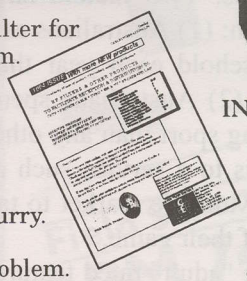

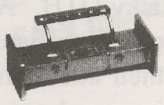
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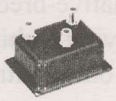
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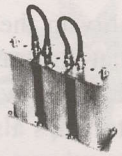
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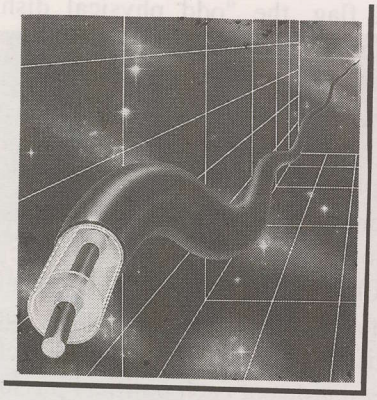

Staking Claims For The Australian Explosion

Most readers are well aware that as of 1 July 1997, Australian regulations that prohibit pay television services originating from beyond Australia from being carried by cable or SMATV systems will end. What this simply means is that from midyear onward anyone holding a cable permit, or able to obtain an SMATV permit will be able to go into the world marketplace for programming and negotiate programme service agreements with any supplier available on satellite.

Astute readers of SatFACTS saw a four line report in our January 1997 "With the Observers" feature noting that HBO Asia, the same service one finds on Palapa C2, has noticed "testing" on an Optus B3 transponder in B-MAC analogue late in December. This was no accident. HBO Asia plans entry into the Australian (and one hopes but cannot confirm, the New Zealand) marketplace on or shortly after 1 July. And this is but the tip of the iceberg.

Major DTH players already in Asia have watched with some amusement the horrendous financial difficulties facing native-bred Galaxy DTH. And they have studied the "buying habits" of Australians. Two factors have jumped out to attract their attention: (1) Australians as a body rent more movies per household each year than any other country on earth, and, (2) Australians spend more hours per household watching sport than any other nationality in the world. This says to a service such as HBO that Australian would be a valuable market to tap into because movies is the name of their game.

(Australian's also own/rent more "adult" rated features than any other group in the world - a strong message to Adult Programming channels.)

What all of this has to do with cable is that people's entertainment purchasing habits attract programmers who know their market demographics. And DTH or cable remain the most viable method of reaching these people. HBO Asia is already widely distributed throughout Asia in many different formats. Malaysia's new domestic Measat satellite, for examples, includes an HBO Malaysia channel - essentially the same movies shown on Palapa C2 but with special editing to reflect the censor sensitivities of a Muslim culture. HBO sister channel Cinemax, specialising in slightly more vintage films and in direct competition to TNT, MGM Gold and others, has proven itself in North America to be a viable "second channel service" for cable and DTH subscribers enticed by HBO. Cinemax launched into limited portions of Asia last October, initially on ApStar 1.

The major decision facing would-be Australian programmers is "which satellite" and "which format?" Optus B1 and B3 are busy rearranging satellite transponder assignments to make room for as many of these new "foreign" service providers as possible. Other satellites in serious contention include Measat at 148E (for its east coast Australia coverage beam), Intelsat 80X (2 or 3) from 174E (unfortunately, not to be available until well after July 1st), PAS-2 and its Ku band beam into Australia (and New Zealand) and even Intelsat 703 when it moves to 180E.

For DTH purposes, selecting the "right neighbourhood" is crucial. In the satellite business, "neighbourhood" means being on the satellite that offers the greatest choice of (DTH marketed) programming since DTH installations do best when you can lock down a 60 to 90 cm dish on a single satellite and then hand the customer a channel changing remote control. Being off by yourself (or with a handful of others) on a satellite that requires users to move their dish and perform other complicated viewing choice preliminaries has proven to be a serious deterrent to building a DTH business.

For a programmer to attract sufficient viewing numbers in the South Pacific, it must go after both DTH and cable viewer homes. At this point in time the viewing universe potential is measured in hundreds of thousands of homes, not millions. And it is not clear whether DTH or cable will attract the majority of the potential audience. The safe business approach is to create a rate structure that appeals to both DTH and cable and then give the programming a year or two to sell.

Services such as HBO have a leg up on moving into Australia and the surrounding region because they already have their production facilities operational to serve Asia proper. Adding Australia to Asia is simply a matter of getting a satellite hop into Australia - either from outside (such as through Palapa C1 or C2) or from inside (by taking the existing Asian HBO service off of C2 from within Australia and sending it back up through Optus B1 or B3 to Ku equipped sites). HBO has another advantage as well - those RABS sites all throughout Australia that are already equipped with B-MAC analogue decoders. With present RABS programmers (ABC, SBS and the regionals) planning to shift to MPEG-2, there will be some quantity (estimated near 10,000) of the B-MAC systems sitting there with little or nothing to do. A clever HBO person would put them back to work by offering a subscription to HBO-Australia using the RABS B-MAC terminals. 10,000 new subscribers in Australia won't pay their

Optus (1/2) transponder and marketing costs but it is far better than starting off with 0 subscribers. Moreover, as Indovision phases out the CDE-2000 decoders in Indonesia, there will be another 45,000+ B-MAC decoders to be recycled to Australia. That is one very cheap way to get into Australia with movies for not much more than the cost of the Optus transponder time.

What all of this means to Australian cable and SMATV firms is that some major brand name programmers are seriously considering entering the Australian marketplace come 1 July. Few of these will preclude cable or SMATV systems as clients and most will be anxious to have your business. Couple to this "foreign invasion" the certain July launch of a challenge by Optus Cable to Galaxy offering 20+ DTH (or cable) programming channels and you have the makings of a truly competitive cable and SMATV industry in Australia. July 1st: 100 days and counting down.

Meanwhile - Outside of Australia

The SKY Network (NZ) marriage to Rupert Murdoch controlled INL was called off at the altar February 28, one day after SKY released details of their own DTH plans. SKY told the new Zealand media on February 27th they would stay with a single Videocrypt encoded analogue service channel (Sport) "for as long as one year" following their April 1 scheduled start. SKY plans conversion from one analogue to approximately 20 MPEG-2 programming channels between January and April 1998. They also plan to add an additional 18-20 NVOD channels (movies with 30 minute staggered start times) "before the end of 1998."

The Optus B3 transponders chosen for this rollout are 5, 6 and 7 (Vt) which are capable of serving dishes in the 60-90 cm class if the FEC is held to 3/4 or smaller. Cable's part in the SKY move to satellite is as follows:

1) Cable operators can contract with SKY to distribute their channels (some or all - cable operator choice).

Individual homes in DTH regions of SKY are paying $650 for a dish, LNBF, cable, Uniden analogue receiver and VideoCrypt decoder - installed. Since this package costs more than $650, even at SKY's purchasing power level, SKY is obviously subsidising the package for the consumer. When MPEG service begins, SKY will swap the new (brand, model net yet selected) MPEG IRD for the Uniden analogue receiver and VideoCrypt decoder at their expense.

Consumers signing up for the sport-only SKY DTH service are being told they are getting the sport service free of cost beyond the cost of the equipment ($650). In fact, that works out to $54 per month with SKY "giving away" the equipment. When the MPEG programming package launches in 1998, consumers will be given a "menu" of services which they can select from with a specific service charge attached to each channel chosen. The present cable opportunity is a "window" during which cable TV can offer SKY for less than DTH cost; see SF#30, p. 22-23 for a complete discussion.

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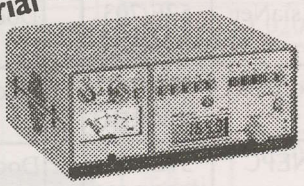

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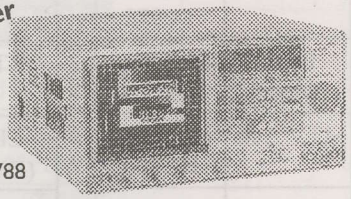

SK No. 5788

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SatFACTS Pacific/Asian Region Orbit Watch: 15 March 1997

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Free-to-Air 57E to 80E

Sun Music	57E/703 1400RHC
Sun Movies	57E/703 1342RHC
Sky News	57E/703 1257LHC
BBC World	57E/703 1224LHC
Sun TV	57E/703 1220RHC
AsiaNet	57E/703 1170RHC
WorldNet	57E/703 1100RHC
NEPC	57E/703 1090/LHC
TVi	57E/703 1020LHC
Muslim TV	57E/703 975LHC
Discovery	68.8/Pas4 Vt/1365
ABN	68.8/Pas4 Hz/1365
CCTV4	68.8/Pas4 Vt/1314
Sony Enter. TV	68.8/Pas4 Hz/1240
Doordar. India	68.8/Pas4 Vt/1116
CNNI	68.8/Pas4 Hz/1065
TNT/Cart.	68.8/Pas4 Hz/1040
ATN	68.8/Pas4 Vt/972
BBC World	68.8/Pas4 Hz/1350
MTV Asia	68.8/Pas4 Hz/965
TK Rossija	80/S13 1475RHC
VTV4	80/S13 1275RHC

Free-to-Air 80E to 113E

AST	85/S3 1275RHC
Dub'l II	90/S6 1475RHC
Orbita II	90/S6 1275RHC
Dub'll I	90/S6 1234RHC
Orbita I	90/S6 1208RHC
Doordar.7	93.5/In2b 1285/Vt
Doordar.1	93.5/In2C 1160/Hz
Doordar.9	93.5/In2c 1080/Hz
Doordar.8	93.5/In2b 1050/Vt
Doorda10	93.5/In2b 1010/Vt
Orbita II	96.5/S14 1475RHC
Madagas-car	96.5E/S14 1325RHC
ERTU Egypt	100.4/As2 1508/Hz
TV Shopping	100.4/As2 1490/Vt
TV Mongolia	100.4/As2 1470/Hz
5 China MPEG-2	100.4/As2 1430/Hz
5 China MPEG-2	100.4/As2 1310/Hz
CCTV4	100.4/As2 1190/Hz
RTPi	100.4/As2 1170/Vt
EBB (DVB)	100.4/As2 1150/Hz
Dub'l II	103/S21 1475RHC
ART	103/S21 1275RHC
CFI	113/C2 990/Hz
SCTV	113/C2 970/Vt

Free-to-Air 113E to 145E

Brunei	113/C2 1010/Vt
MTV Asia	113/C2 1030/Hz
TPI	113/C2 1070/Hz
TV Indosair	113/C2 1090/Vt
ABN	113/C2 1120/Hz
ANteve	113/C2 1130/Vt
CNNI	113/C2 1183/Hz
GMA	113/C2 1230/Hz
TV3	113/C2 1250/Vt
ATVI	113/C2 1270/Hz
TVRI	113/C2 1310/Hz
RTM	113/C2 1330/Vt
RCTI	113/C2 1408/Vt
CNBC	113/C2 1530/Hz
Unknown pgming	128/Jcsat3 1328Hz
Orbita-I	140/S7 1475RHC
NTV	140/S7 1425RHC
Music Asia	142.4/R42 1475LHC
RAJ-TV	142.4/R42 1425LHC
Laos TV	142.4/R42 1375LHC
ViJay TV	142.4/R42 1325LHC
EM TV	142.4/R42 1272LHC
Dub'l-I	145/S16 1275RHC

**/WorldNet reported moving to As2; see p. 28

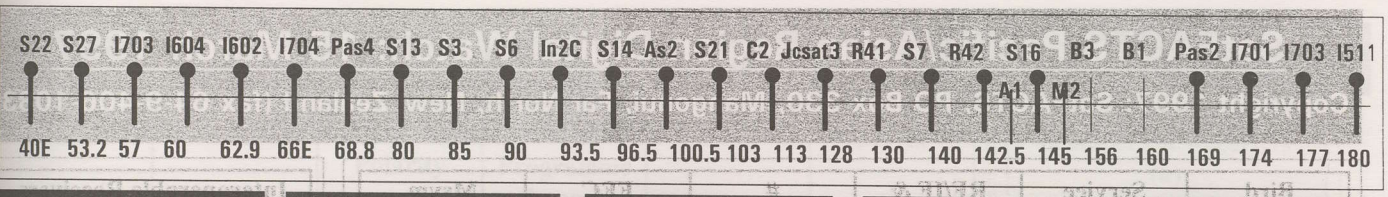
Free-to-Air 145E to 180E

CNNI	168/Pas2 1183/Hz
CNN Feeds	168/Pas2 1155/Hz
NHK	168/Pas2 1114/Hz
TV Shopping	168/Pas2 1400/Hz
Feeds	174/I701 984RHC
Feeds	174/I701 973RHC
Feeds	177/I702 984RHC
Feeds	177/I702 963RHC
Feeds	180/I511 1430RH
WorldNt (**)	180/I511 1175RH
RFO	180/I511 1105RH
Feeds	180/I511 1020LH
Feeds	180/I511 984RHC

ENCRYPT/MPEG SERVICES

Sky Racing(a)	100.4 1130/Vt
European Bouquet	100.4 1150/Hz
Star TV (b)	100.4 1250/Vt
APTV (b)	100.4 1351/Hz
WTN (b)	100.4 1363.6/H
Star Chinese (a)	100.4 1390/Hz
Rebar TV (c)	100.4 1410/Vt
Star TV (c)	100.4 1450/Vt
ESPN (d)	113/C2 1030/Hz
HBO Asia (d)	113/C2 1150/Hz
TNT + (d)	113/C2 1390/Hz
Discovery (d)	113/C2 1430/Hz
Star Indovis'n (c)	113/C2 1570/Hz
Star Indovis'n (c)	113/C2 1650/Hz
Galaxy (c)	156/B3 12.437Hz
Galaxy (c)	156/B3 12.373Hz
China PowRvu (b)	168/Pas2 1433.5/ Vt
Discovery (c)	168/Pas2 1374/Hz
Disney Aust. (b)	168/PAS2 1346Hz
ESPN (a)	168/Pas2 1288/Vt
Satcom (b)	168/Pas2 1288/Hz
California PowRvu (b) (c)	168/Pas2 1249/Hz
TNT + (a)	168/Pas2 1218/Vt
SCPC3 Ad Hoc (b)	168/PAS2 1208/Hz
Fox/ Prime (c)	168/Pas2 1161/Vt
Filipino Ch. (b)(c)	168/Pas2 1060/Hz
NBC HK	168/PAS2 1057/Vt
HK PowRvu (b) (c)	168/PAS2 1002/Vt
TCS Singapore (b)	168/Pas2 967/Hz

No home DTH subscriptions



OPTUS B3 156E (Ku only)

(B-Mac)	1425/Vt
Central ABC HACBSS	1393/Hz B-Mac
Vic. ETV	1361/Vt CryptV.
Imparja TV	1329/Hz B-Mac
(B-Mac)	1297/Vt
Net 9, Sky specials	1233/Vt B-Mac
Central ABC HACBSS	1201/Hz B-Mac
	1169/Vt
Galaxy	1137/Hz Irdeto Mpeg 2
	1105/Vt
Galaxy	1073/Hz Irdeto Mpeg 2
Golden West	1041/Vt
	1009/Hz
	977/Vt

RUSSIAN Inclined Orbits

80E/ +/- 2.3
85E/ +/- 2.8
96.5E/ +/- 1.5
103.2E/ +/- 2.1
130E/ +/- 1.0
140E/ +/- 4.4 (?)
142.4E/ +/- 0.9E
145E/ +/- 3.9

Encrypted (to left)

OPTUS B1 160E (Ku only)

Net 9, Sky feeds	1425/Vt B-Mac
Data	1402/Hz
QSTV	1377/Hz B-Mac
NE ABC HACBSS	1370/Vt B-Mac
NE SBS HACBSS	1344/Vt B-Mac
SE SBS HACBSS	1339/Hz B-Mac
SE ABC HACBSS	1313/Hz B-Mac
Sky Channel	1296/Vt B-Mac
ABC Radio	1276/Hz (digital)
OmniCast	1270/Vt (FM/FM)
ABC feeds	1247/Hz Pal
Sky Nz (April 7)	1232/Vt VidCrypt
Net 9 feeds	1219/Vt Pal&Ntsc
	1214/Hz
Net 10	1182/Vt E-Pal
Net 9	1180/Hz E-Pal
Net 10 feeds	1155/Vt Pal
Net 7	1120/Vt E-Pal
Net 9 feeds	1091/Vt Pal
CAA air to ground	1009/Vt Nbfm

PAS-2 169E (C + Ku)

CCTV3,4, test	1433.5/Vt (Sa9223)
Value Ch.	1400/Vt
Discovery PowerVu	1374/Hz (Sa9223)
ESPN	1288/Vt B-Mac
MPEG-2 PowerVu Sylmar	1249/Hz (Sa9223)
TNT+ (1/2Tr)	1218/Vt B-Mac
CNN+ (1/2Tr)	1183/Hz
FoxSports	1161/Vt (Sa9222)
NHK	1115/Hz
Filipino Channel	1060/Hz (GI Mpeg)
NBC Mux MPEG	1057Vt (Pace)
MPEG-2 PowerVu HonKong	1002Vt (Sa9223)
TCS Sing.	967/Hz

PAS-2 Ku

Napa TC	12,415V
PowerVu	12,415V
H-Life	12,415V

MeaSat 2 148E

Tests	1065Hz*

* Colour bars 5-03, audio 6.8

Intelsat 701 174E

Feeds	963
Feeds	984

Intelsat 703 177E

AFRTS	973 (1)
Feeds	984

* LHC; (1) PowerVu (1 ch) operating

Intelsat 513 177W

Feeds	963
Feeds	984

(513 Ku)

Service	RF Freq.
US Nets	10.980V
NBC	11.015V
Feeds	10.510V

Ku Services

Intelsat Ku band services shown here are boresighted to Japan and nearby Asia, have not been reported south of equator. At boresight, signals of < 2m levels.

TDRS5 / 174.3W

Fuji TV	1305 Hz
BBC World	1163Hz MPEG

Intelsat 511 180E(W) +/- 2.9deg.

TVNZ	964/Ntl 3000
TVNZ	972/Ntl 3000
TVNZ	980/Ntl 3000
TVNZ	988/Ntl 3000
Occ Vid.	1,020**
9 Aust.	1,025
Canal +	1,054 **
RFO Tahiti	1,105
Asian	1,130
World-net	1,175
NHK	1,225**
ABC Oz	1,256
7 Oz	1,274
10 Oz	1,385
MPEG	(PwRvu)
Keystone	1,432

* RHC & LHC
** LHC only

(511 Ku)

NHK	11.135H
CBS	11.475H
CNN	11.508H

TDRS5 "north" only

UPCOMING SATELLITE LAUNCHES

China DF3 (March) - location unknown
Filipino Agila to 153 or 161E (March)
Thaicom 3 to 78.5E (March)
Japan BSAT 1A to 110E (March)
ApStar2A to 77E (April)

(a) B-MAC or Starcrypt encrypted, no access available.; (b) MPEG format, requires special receiver; (c) MPEG, encrypted, access may be possible (d) B-MAC, subscriptions available in some geographic areas. No indication - MPEG DVB FTA.

SatFACTS Pacific/Asian Region Digital Watch: 15 March 1997

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Bird	Service	RF/IF & polarity	# Programme channels	FEC	Msym	Interoperable Receivers (a)
Measat 1/91.5	India Bouquet	12284/12346Vt	10+TV?	7/8	30(.000)	Philips, SK888 (w/CA)
As2/100.5E	European Bouquet	4000/1150 Hz	5TV, 12 radio (#1)	3/4	28(.125)	DVM, Gng, N163, N17X P400(b), P500, Pn520/630, Sk888
	?	3907/1243a Hz	?	?	?	
	Hubei TV Wuhan	3854/1296 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
	Hunan TV Changsha	3847/1303 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
	Guandong TV Guandong	3840/1310 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
	Inner Mongolia TV Zizhiqu	3830/1320 Hz	2	3/4	8(.398)	N163, N17X, Ph3950/11
	APTV London	3800/1350 Hz	1	3/4	8(.448) or 5(.632)	DVM, N163, N17X
	BBC Radio London	3793/1357 Hz	15+ (?)	?	?	
	Worldwide TV News	3786/1364 Hz	1	3/4	5(.632) or 8(.448)	DVM, N163, N17X
	Liaoning TV Shevang,	3734/1416 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
	Jiangxi TV Nanchamg	3727/1423 Hz	1	3/4	4(4.18)	N163, N17X, Ph3950/11
	Fujian TV Fuzhou	3720/1430 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
	Qinghai TV Lanzhou	3713/1437 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
	Henan TV Zenghou	3706/1444 Hz	1	3/4	4(.418)	N163, N17X, Ph3950/11
As2/100.5E	STAR TV (Hong Kong)	3900/1250 Vt	5TV, 1Radio (#2)	1/2	28(.100)	DVM, N163, N17X (not all services)
	Rebar TV Taiwan	3785/1410 Vt	4TV (#3)	3/4	18(.000)	Pv9223 (CA)
	STAR TV Hong Kong	3700/1450 Vt	5TV, 1 radio (#4)	3/4	28(.100)	Pace DVS-211 (CA)
C2/113E	Star Indovision	3500/1650Hz 3580/1570Hz	20TV (#5)	7/8	26(.850)	Pace DVS-211 (CA)
Ap1/138E	Reuters	?	1TV, data	3/4	5(.632)	
Optus B3/ 156E	Galaxy	12.438Hz 12.373Hz	20+ TV (#6)	3/4	29(.473)	Gng, P400, P500, Pn520, Pn630, Sk888 (c)
PAS-2/169E	Hong Kong PowerVu	4148/1002 Vt	8TV (#7)	2/3	24(.430)	Pv9223 (some FTA)
	NBC Hong Kong	4093/1057 Vt	7TV (#8)	3/4	29(.473)	Gng, N163, N17X,P400, P500, Pn520, Pn630, Sk888

Bird	Service	RF/IF & Polarity	# Programme channels	FEC	Msym	Interoperable Receivers (a)
PAS-2/169E	Ku California PowerVu	12415/1115 Vt	7TV (#9)	3/4	30(.800)	Pv9223 (some FTA)
	CCTV China PowerVu	3716.5/ 1433.5 Vt	3TV (#10)	3/4	19(.850)	Pv9223 (all FTA)
	TCS Singapore	4183/967 Hz	2TV (#11)	1/2	6(.620)	Pv9223 (occasionally FTA)
		4150/1000 Hz		5/6	21(.093)	Pv9223 (CA)
		4114/1036 Hz		5/6	21(.093)	Pv9223 (CA)
		4104/1046 Hz		5/6	21(.093)	Pv9223 (CA)
	SCPC3	3942/1208 Hz	1TV	2/3	6(.620)	Pv9223 (CA)
	California PowerVu	3901/1249 Hz	7TV (#9)	3/4	30(.800)	Pv9223 (some FTA)
	Satcom 1-5	3862/1288 Hz	5TV	7/8	19(.465)	Pv9223 (CA)
	Walt Disney Australia	3804/1346 Hz	1TV	5/6	21(.093)	Pv9223 (CA)
	Discovery Singapore	3776/1374 Hz	7TV (#12)	3/4	19(.850)	Pv9223 (occasionally FTA)
	ESPN2	3707.5/ 1442.5 Hz	1TV	2/3	6(.620)	Pv9223, N163, N17X
I703/177E	AFRTS	4177/973 LHC	1TV	?	?	Pv9223 (CA?)

Receivers: For a receiver to be "interoperable" it must turn on and "do" the service in question - no persistent glitches, no special tricks. Nomenclature: DVM is DVM/NTL3000; Gng is Grundig DTR 1100; N163 is Sweden sourced Nokia 9500 S; N17X is German sourced "d" box software modified for C-band; Ph3950/11 is Philips DVB IRD created for China SCPC; P400 is Pace DGT400; P500 is Pace DVR500; Pn520 is Panasat; Pn630 is Panasat; Pv9223 is PowerVu; Sk888 is Skandia DigiSkan.

BOUQUETS: **1)** European Bouquet. (1) Deutsche Welle, (2) MCM, (3) RAI International, (4) RTVE, (5) TV5 Paris; Radio (1) DW#1 stereo, (2) DW#2 (stereo), (3) DW#3 (stereo), (4) YLE (left), RCI (right), (5) SRI (l), WRN (r), (6) REE, (7) DW#1 (stereo), (8) DW#2 (stereo), (9) DW#1 (stereo), (10) NN RA6, (11) NN RA8 [+ MediaNet within lines 10-15 of VBI of DW TV using DMV M2/Pro/Txt board in 3000 receiver]; **2)** STAR TV Hong Kong. (1) STAR + Japan (NTSC), (2) says 'CNBC' but is test, (3) horse racing feeds very occasional to 'TCNA' Australia, (4) Sky News London, (5) Star Radio (test). **3)** Rebar Taiwan. (1) "U1", (2) "U2", (3) "U3", (4) Channel 4. **4)** STAR HK. (1) Star Movies SEA (661), (2) Star Chinese Channel (660), (3) NBC (658), (4) CNBC (657), (5) Sky News (655), (6) Viva Cinema (654). **5)** Indovision. (1) HBO, (2) Star Movies SEA, (3) Film Indonesia, (4) MGM Gold, (5) ESPN, (6) Star Sport, (8) Channel V International, (9) Channel V Asia, (10) RCTI, (11) Star Plus, (12) Discovery, (13) Star Movies & NBC, (14) Phoenix Chinese, (15) CNN, (16) BBC World, (17) CNBC, (18) Cartoon + TNT, (19) Preview 1, (20) Preview 2. **6)** Galaxy - presently 17 channels. **7)** Hong Kong PowerVu. (1) CTN I, (2) CTN II, (3) TVBI HK and other feeds (NTSC), (4) **Ad-hoc I PA** (PAL), (5) **Ad-hoc II** (NTSC), (6) **ABN**, (7) CTN II, (8) CTN IV. **8)** NBC Hong Kong. (1) CNBC, (2) CNBC Mandarin A, (3) NBC Asia, (4) Colour bars - occasional feeds, (5) CNBC Taiwan, (6) NBC Asia Taiwan, (7) Colour bars. **9)** California PowerVu. [Note: Ku band listing may not be operating at this time; programming identical to C-band.] (1) **CMT** (NTSC), (2) **CBS feeds**, others (3) ESPN, (4) **EWTN** (NTSC) - **Global Catholic Radio** Ch. 2, R , (5) **BBC World** (NTSC), (6) **Bloomberg Financial** (NTSC), (7) Golf Channel (NTSC). **10)** CCTV China. (1) **CCTV4** (NTSC), (2) **CCTV3** (NTSC), (3) **CCTV tests**. **11)** TCS Singapore. (1) **TCS Test**, (2) **TCS Default** [repeat]. **12)** Discovery. (1) Disc. Aust/NZ, (2) **Default**, (3) Disc. Japan, (4) Disc. SE Asia, (5) Disc. Taiwan, (6) Disc. Philippines, (7) Disc. China. PowerVu **bold face** listings are typically (not always) FTA.

Explanations: **(a)** Interoperable. Receivers which through repeated use have been shown to access services listed without aid of special computer software or non-standard "tricks." **(b)** PACE DGT400, others normally employed with Australia Galaxy service. Galaxy routinely "upgrades" over-air the decoders with new operating software. If a Galaxy receiver is upgraded to include programme content "rating" software, receiver will no longer function on EBB (et al) services. **(c)** Galaxy service receivers - require Galaxy issued smart card to access pay TV services. **(CA)** indicates only conditional access programming on this transponder.

WITH THE OBSERVERS

AT PRESS DEADLINE

US origin 'WorldNet' is abandoning I511 at 180E shortly, moving to As2 where they will have a full transponder in analogue format. Scheduled: two week dual feed on both birds before I511 shuts down. WorldNet is FTA, available to SMATV, cable and other redistribution services including terrestrial TV. Measat noted testing with bars 4085RF/1065IF Hz, audio 6.8 by Garry Cratt (NSW) and others.

Laos National Television has moved from now silent Rimsat R41 (130E) to R42 (142.4E), same frequency (1380IF /3770RF). The move brings most of Australia, all of NZ, many central Pacific locations within range of the programming. Laotian is easily understood by most Thai's which creates a market for the service south of the equator.

Laos TV breaks into two day-parts, usually on the air from around 0045UTC to around 0900UTC with sport, exercise, music videos (Laotian produced no less) and children's programming and returning to the air around 1100UTC for the evening programming that includes film, news, soaps and musical variety. Laos must have some interesting agreements with various programme providers - in one 24 hour period we saw MCM, WorldNet, BBC, SKY (Australia) sport, STAR sport and TNT material being retransmitted!

Technically, the transmission quality is typically only "fair" with tape noise and crinkles appearing every few minutes. Of interest - because R42 is increasingly inclined orbit all three of the satellite services visible on this bird (EM TV, Asia Music and Laos) have to track the satellite at their uplinks. Switching back and forth between the three tells you which of the three is spot on the bird and who is not. As a rule, EM TV continues to be the least capable of following the bird, the Subic Bay uplink operated for Asia Music is next best at tracking and Laos to date has been the most efficient. Observers such as **Gary Salisbury** (Gunalda, Qld) universally report Laos at P4 - it may be difficult to reach P5 under any conditions given the mixture of Rimsat satellite noise and Laos' own uplink baseband noise!

Philip Spora (Levin, NZ) reports MTV Asia seen on Optus B3 (12.530Vt) "testing." **Tony Hobson** (Newcastle, NSW) found HBO Asia on B3 in B-MAC, also "testing" (see p. 22, this issue). Increasingly observers will be reporting "tests" being conducted on Optus B1 and B3 as the leadup to July 1st approaches.

David Leach (NSW) reports regular programming now being seen on JcSat3 at 1328IF, audio 6.6; P1+, apparently Japanese but not certain. David (and others) also report Madagascar TV is on 1325IF at 96.5E, most programming French and lifted from CFI and other French satellite services.

Possible 6 Channel Mandarin MPEG Service

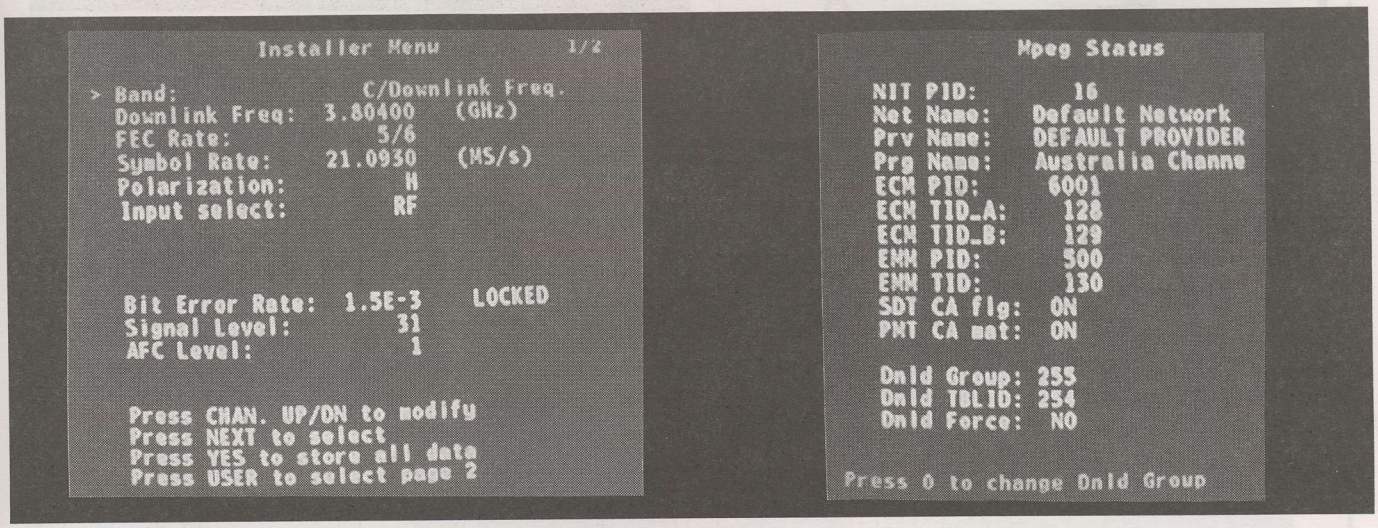
SPACE TV Systems, Taiwan (Michael Lin at tel 886-2-999-2939, fax 886-2-999-2989) is scheduled to begin

Nelson Dimas, NZ Representative for TV5 (France) uses this Paraclipse 3.8m dish, Palcom SL7900RP and loaner MPEG digital receiver to record and distribute French language programming for Alliance Francais groups throughout NZ from his home at Nelson, South Island.

Laos National TV on 142.4E now widely seen

WITH THE OBSERVERS: Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. Photos of yourself, your equipment or off-air photos taken from your TV screen are welcomed. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady. Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for April 15th issue: April 3 by mail (use form appearing page 34), or 5PM NZST April 4th if by fax to 64-9-406-1083.

WHO 'S THAT MASKED-MAN at PAS-2 Hz 3804?

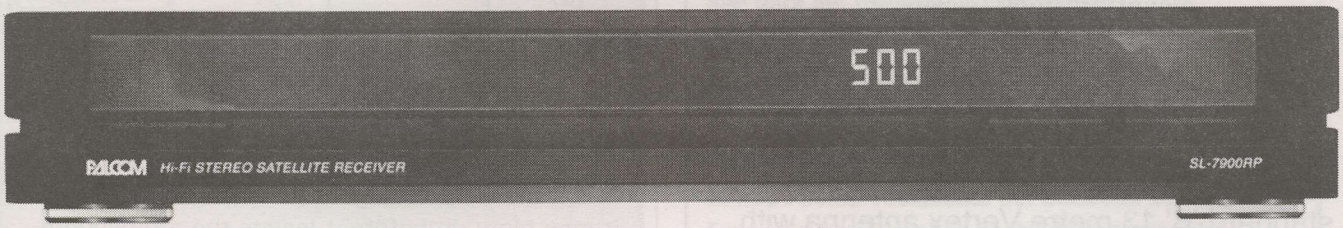


Walt Disney TV Pte Ltd *"Australia Channel" - dat's who!*

tests "at any time" using a 36 MHz bandwidth 1/2 transponder on Intelsat 703 (177E) Ku band. 703 will be dual purpose, acting as a relay from Taiwan to North America and providing a 45.5dBw footprint over "eastern Australia" (translates to 1.2 - 1.5m dish). The same service is also scheduled to be in a 36 MHz C-band transponder on Thaicom 1 when it moves from 78.5 to 120E (their location - we are not certain it is correct). The footprint into NZ is not available at press-time. The six channels would include (1) movie channel, (2) news channel, (3) leisure and music channel, (4) education channel, (5) drama channel, and, (6) general entertainment channel. SPACE TV Systems believes the complete receive system package will sell for US$1,000 (MTI manufactured IRD) with a monthly six-channel subscription package fee of US$20. The same service will also be distributed in North America, initially through SBS5 and later via Galaxy 10. The package will be in NTSC on I703 and within USA, DiviCom is providing the encoder and Titan Information is providing the Digital Video Passport conditional access (smart card) system.

There is more. An "Adult" film service is discussing the possible inclusion of its programming in the Intelsat 703 portion for "backfeed" into Australia. Of interest - the Mandarin package does not originate from Taipei but rather from Brewster, Washington (USA) using BetaCam master tapes. However, the Thaicom feed will be enlarged through Taipei with 30 audio channels.

As a SatFACTS subscriber - YOU CAN WIN ONE OF THESE!



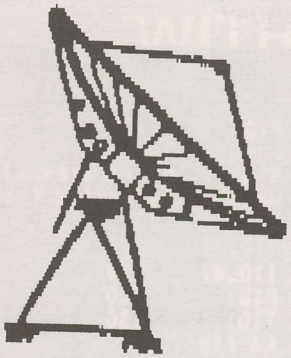
IT IS NOW UNDERWAY - the 1997 SatFACTS Subscriber Contest. We will be giving away TWO brand new Palcom SL7900RP Hi-Fi Stereo Satellite Receivers - acclaimed the most versatile super low threshold "enthusiast" receiver in the Pacific & Asia.

How do you enter to win???

FIRST - you MUST register with SatFACTS as a contest entrant. How do you do that? See perforated card (page 34) in this issue - complete this card and return to SatFACTS.

SECOND - you will be mailed full contest rules as our acknowledgement of your registration.

THIRD - read (very carefully!) this issue (SF31) for clues leading to your first formal contest entry. (*If you like a good "mystery," you will really love this contest!*)

PACIFIC  ANTENNAS
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- 3 only 5 metre Sat Com Technologies transmit rated Ku band antennas
- 1 only 3.7 metre Comtech transmit antenna with Seavey transmit feed horn

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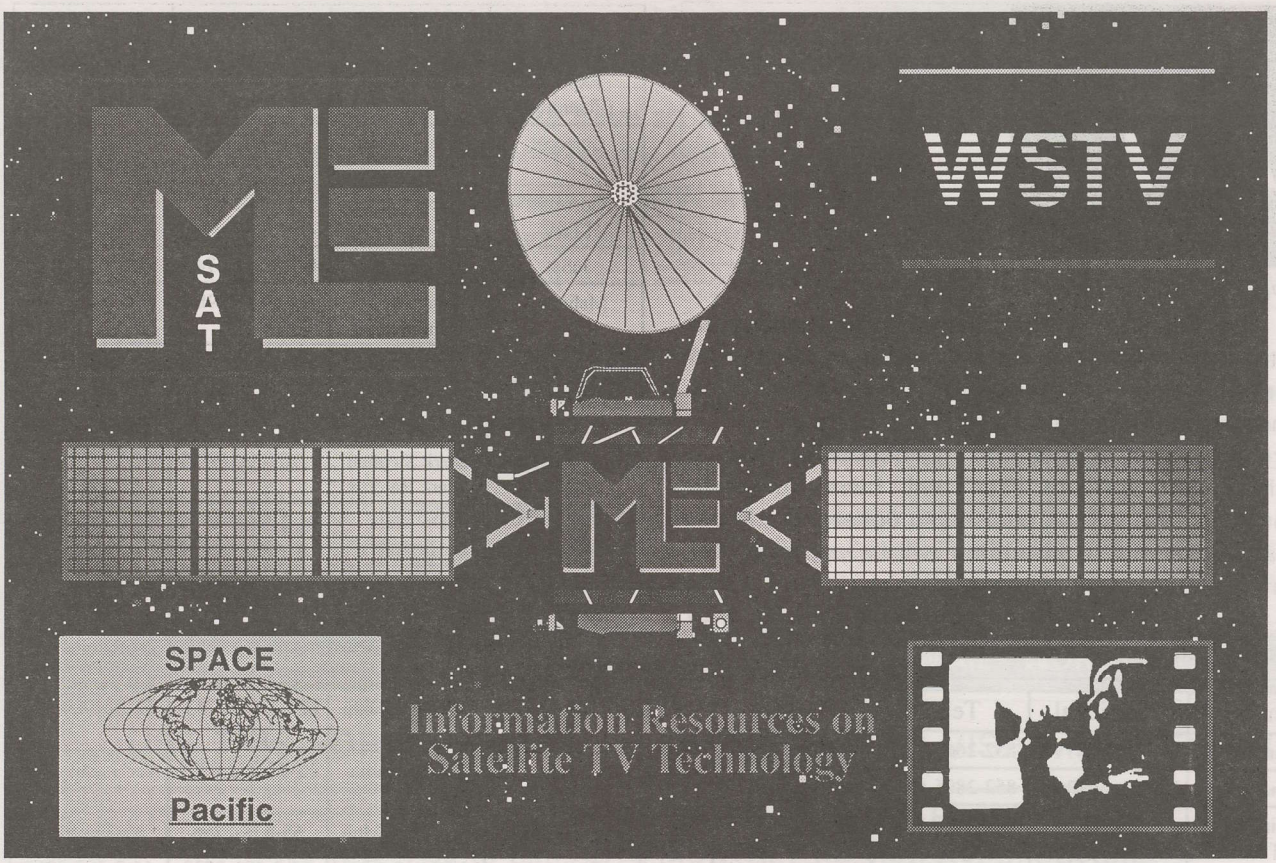
Tel/fax 64-9-424-0841 / Mobile 025-789-160

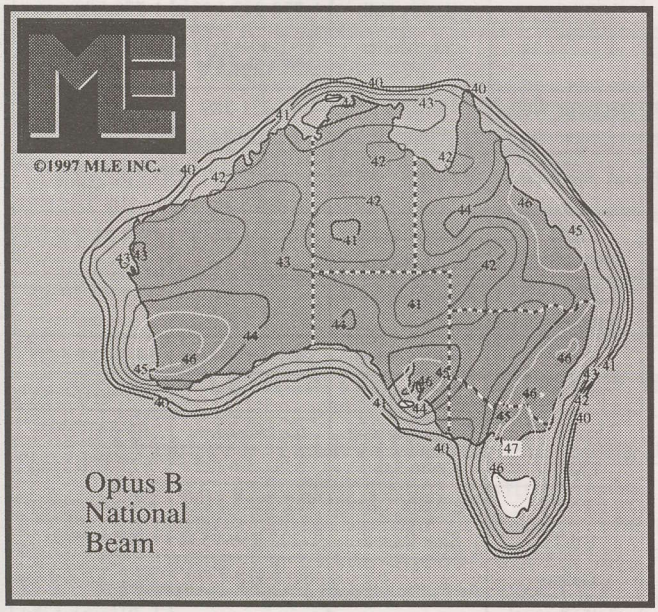
1997 LAUNCH SCHEDULES

Scheduled Launch (1)	Satellite	Target Location	Satellite Capacity
March (a)	DF3 China	Uncertain	24 C-band
March (a)	Agila 2 Philippines	153E or 161E	30 C-band, 12 Ku
March (b)	Thaicom 3 Thailand	78.5E likely	24 C-band, 14 Ku
March (b)	BSAT 1A Japan	110E likely	Ku DBS
April (a)	ApStar 2R (Hong Kong)	possibly 77E	28 C-band, 16 Ku
May (b)	InSat 2D India	Uncertain	believed C-band only
May (a)	SinoSat 1 China	Uncertain	24 C-band, 14 Ku
June (b)	Intelsat 802 (c)	177E	36 C-band, up to 6 Ku
Sometime in 1997 (d)	Gorizont 33 Russia	Uncertain (g)	6 C-band, 1 Ku
July 9 (e)	Superbird C Japan	144E	Ku DBS
August (b)	Intelsat 803 (c)	Uncertain	36 C-band, up to 6 Ku
November (b)	JCSAT 5 Japan	150E	32 Ku-band
1997 - late (b)	PAS-7	68.5E	14C-band, 30 Ku
December (d)	AsiaSat 3	105.5E (f)	28 C-band, 16 Ku
December (a)	ChinaStar 1	Uncertain	24 C-band, 24 Ku

1/ As of March 5, 1997; subject to change!
a/ Scheduled on Chinese Long March vehicle - which means it may go or may not and if it goes it may blow up before it leaves the atmosphere.
b/ Scheduled Ariane vehicle.
c/ Total confusion about where Intelsat 802 and 803 will actually go since 801 was changed from 177E to 64E at last moment.
d/ Scheduled for Russian Proton vehicle which means launch date could slip.
e/ Scheduled (US) Atlas launch vehicle.
f/ AsiaSat says As3 will go to 105.5E to replace As1; other sources claim 122E. We believe 105.5E is accurate but draw your attention to confusion that exists.
g/ After we had been told there were no more Gorizont class satellites left unlaunched the Russians appear to have found a new one - which they say is "last." If it really exists, it could go anyplace but a Pacific or Indian (Ocean) location is most likely.



http://www.cm.ksc.co.th/~mlesat



MLE/Shelburne Films *Satellite Series Videotapes*

The View from Chiang Mai:
The latest observational satellite TV transponder data for the Asia/Pacific Region.

Satellite TV Archives: **Recent articles on satellite TV technology by Mark Long**

Worldwide Satellite Web: **links to Internet Web Sites of interest.**

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Come see us at:

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Published by:

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AT SIGN off

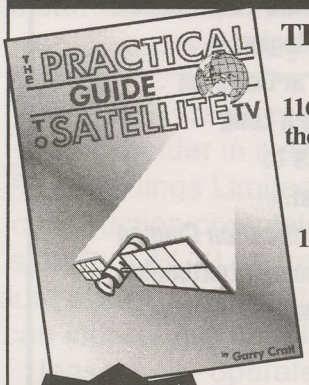
Right People - Right Answers

In the satellite world having quick access to accurate information can be a challenge. Getting to the correct person is impossible if you don't know who they are or where they are.

Here are some suggestions. Undoubtedly readers with their own "private lists" will have others to contribute and we will be pleased to update this list at reasonable intervals. Corrections will be appreciated - we don't routinely talk with all of these people every month and some individuals may no longer be with the firms listed.

Company	Individual	Telco	Fax
ApStar TT&C		852-2663-3058	852-2666-7838
AsiaSat	Ms Winnie Pang	852-2805-6657	852-2504-3875
AsiaSat TT&C	Tik Yak	852-2805-6850	852-2504-3871
AsiaSat EBB Bezeq TT&C	Isaac Kaul		97-22-991-3473
BBC Engineering	Allan Lafferty	44-71-637-1630	
German EBB TT&C	H.J. Winking	49-2192-9224-11	49-2192-9224-23
Express (Planning)	Tim Brewer	44-181-905-5796	-same-
Gorizont	Istvan Kovacs	70-95-244-0286	70-95-253-9906
Gorizont TT&C	Joseph Dolecki	70-95-244-0286	70-95-253-9906
JcSat	Hiro Fukase	813-5511-7748	813-5512-7180
Mabuhay	Felizardo P. Dela Merced	63-2-811-0983	63-2-811-0990
Measat		60-3-380-7000	60-3-380-7018
PAS-2 CA Centre	Ms Romi Salerno	1-305-245-1919	1-305-247-3019
PAS-2 Napa Uplink	Mark Stephan Mark Ratcliff	1-707-253-0774	
Optus (Bus Manager)	Dr. Mark Hirwood	61-2-9342-6905	61-2-9342-6988
Optus (Engineering)	Jeff Davies	61-2-9342-6855	
Optus (NZ office)	John Humphrey	64-9-357-6860	64-9-357-6864
Palapa (Satelindo)	Sahala Silalahi	62-21-5451743-(50)	62-21-5451746
Rimsat (Subic Bay)	Alex Bisunia	63-47-252-0999	63-47-252-3710
Singapore TC L	Loo Tong Mun	65-838-2758	65-734-8119
Thaicom	Mekin Petplai	66-2-591-0739 (Ext 712)	66-2-592-0719
DMV/NTL (Service)	Roger Spencer		44-1-703-498-043
SA Sydney	Ms Elizabeth Jennison	61-2-9452-3388	61-2-9451-4432
SA (Atlanta)	Buddy Hill	1-770-903-6456	1-770-903-6464
CFI France	Guy Muller	33-1-40-62-32-32	33-1-40-62-32-62
Deutsche Welle	Johannes Firsbach	49-221-389-2731	49-221-389-2784
MCM	Manivel Malone	33-1-53-64-61-00	33-1-45-00-12-73
RAI International	Giovanni De Luca	39-6-3317-1505	39-6-3317-0767
Radio France International	Richard Littardi		33-1-44-30-89-20
RTVE	Julio Ferrero	34-1-581-5407	34-1-581-5412
TV5 Paris	Jim Hodgetts		33-1-4418-0655
Disney Ch.	Steve Schaefer	65-542-2335	65-542-2339
EM TV	Kevin Sabin	675-257-322	675-325-4450
ESPN	Ms Anna Chang	852-2887-1199	852-2887-0813
EWTN	Sam Ranelli	1-205-956-9537	1-205-956-0328
Galaxy		61-2-325-7333	61-2-325-7455
Golf Channel			1-203-761-1284
HBO Asia	Ms Jacelyn Kek	65-288-6303	65-287-2210
Indovision	Pati Loevis	62-21-522-2793	62-21-850-8243
NBC Asia	Ms Emma Fung	852-2965-6897	852-2965-6889
SKY Net NZ	John Fellet	64-9-579-9999	64-9-579-0910
STAR (Eng)	James Field	852-2532-1888	852-2532-1044
TNT Uplink	Vincent Luk	852-2965-2888	
TVNZ Sat Ops Centre	Lewis Woodburn	64-9-375-0382	

NOT COMING TO A NEWSAGENT NEAR YOU



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OBSERVER REPORTING FORM - CONTEST ENTRY - **Due April 4**

• NEW programming sources seen since March 1st: _____

_____

• Changes (signal level, transponder, programming content) in pre-existing programming sources since March 1st: _____

_____

• OTHER (including changes in your receiving system): _____

_____

NOTE: Please use P1 - P5 code when describing signal levels and receiver IF/RF settings.

Your Name _____ Is this contest entry? _____

Town/City _____ _____ _____

Make/size dish _____ LNB _____ Receiver _____

Bonus Word Entry: _____ on page _____

February BONUS WORD - foodstuff / p.4!

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Return card to: **SatFACTS Monthly**, PO Box 330, Mangonui, Far North, New Zealand of fax to us at 64-9-406-1083

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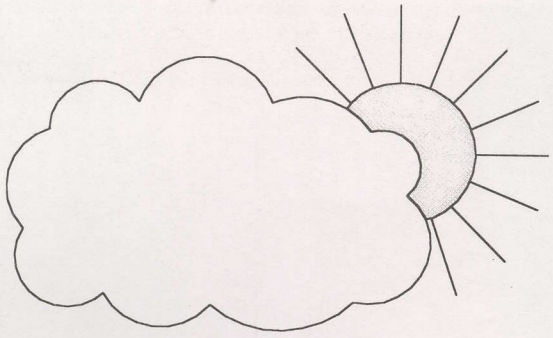
MPEG 2 DVB FORECAST



Clearing - bright and sunny days ahead!

Courtesy of the NEW PANASAT

IRD 630 DStv

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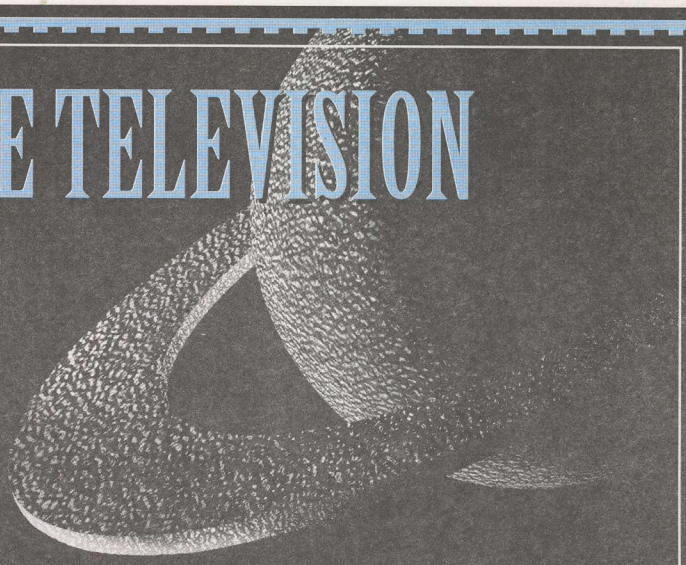

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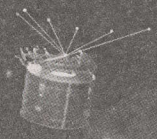

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