12-10-01 10AM

Bob Cooper's

OCTOBER 15 2001

SatFACTS

MONTHLY

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

IN THIS ISSUE

Suppose you held a show and nobody came?

BDA package adds more flexibility to SDS

PanAmSat PAS-8 Bandscan

✓ Latest Programmer News
✓ Latest Hardware News
✓ SDStv application notes
✓ Observer Reports

Vol. 8 ◆ No. 86
Price Per Copy:
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SKANDIA (above) **used Conference to auction off collection of hardware; SCITEQ/Melbourne Satellites featured Humax receivers** (below)

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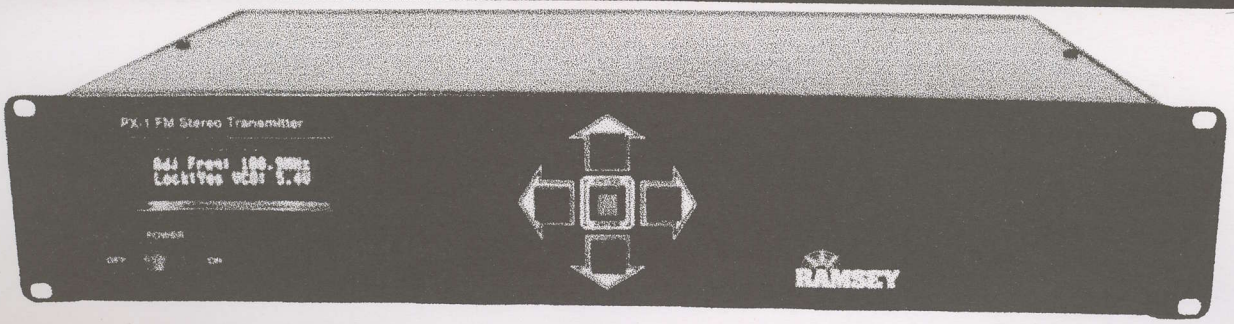

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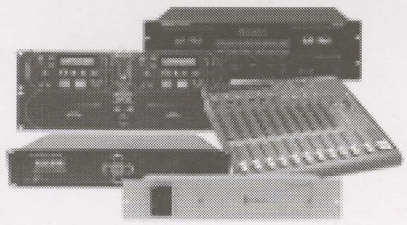

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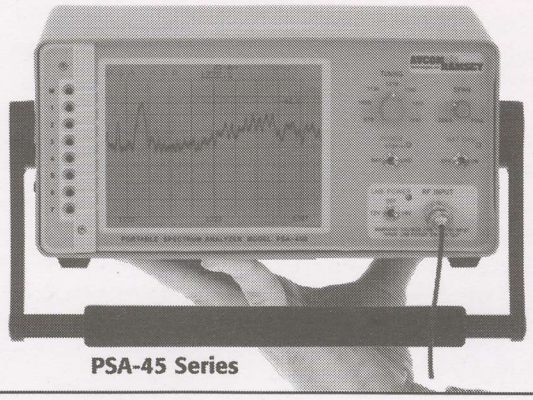

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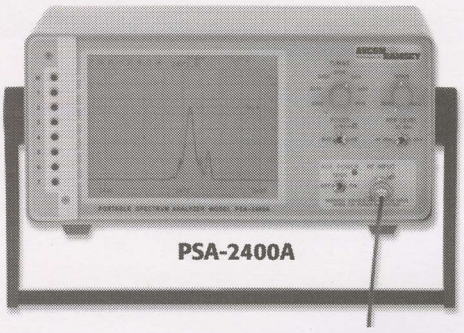
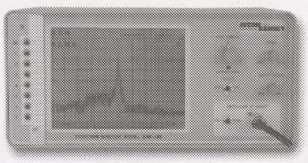
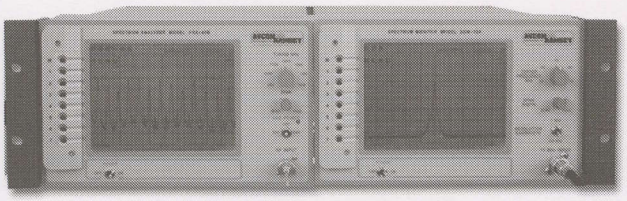


PSA-2400A



SDM-42B



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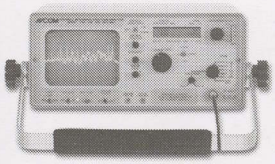

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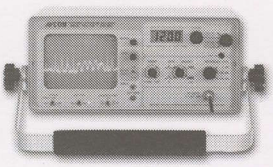

- 5 bands cover 1-1750 MHz plus 3.7-4.2 GHz
- Frequency display

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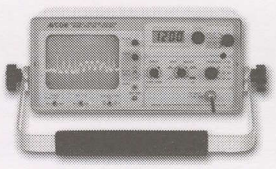
PSA-33A



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SUPPLEMENTAL MATERIALS from SatFACTS MONTHLY: Order Form

☐ TECH BULLETIN 9402: **MATV Systems**. One antenna (system) on the roof, amplifiers and cable to distribute off-air VHF and UHF channels, perhaps FM, perhaps a video channel or two to the rooms of a home, motel, or commercial building. How do you do it? And maintain clean reception on each channel, at the same signal level as all other channels, to each of the wall plate outlets? It is all here - from antenna system design to distribution system and outlet mechanics + electronics. TB9402 - $20 each.

☐ TECH BULLETIN 9404: **Home Satellite Dish Systems**. New to satellite? Uncomfortable making all of the pieces fit, telling a "good piece" from a "not so good piece"? The difference between analogue sparklies and digital pixelations? When to use (and not to use) a line amplifier! Confused by polarisation systems, or why a vertical signal on your western horizon is actually a vertical signal? TB9404 - $20 each.

☐ TECH BULLETIN 9405: **Satellite to Room Systems**. Mixing off-air terrestrial signals with off-satellite FTA (or CA) signals to distribute all together on one piece of coaxial cable such that standard TV sets can receive all of the channels without a set-top decoder or box. Whether it be a large home, a motel/hotel or commercial building - the "blending" of terrestrial and satellite requires some special skills and new approaches. This is your "how to do it" guide that will prepare you for bidding on "the big jobs". TB9405 - $20 each.

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This publication is dedicated to the premise that as we are entering the 21st century, ancient 20th century notions concerning borders and boundaries no 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

October 15, 2001

Willing minds anxious to learn the technical tricks of an entirely new system for delivering terrestrial television turned out in Melbourne for the all-day-Thursday DVB-T Work Shop assembled and moderated by Peter Lacey of Lacey's Australia. Peter deserves high marks for locating a group of "experts" who were willing to go out on their respective limbs to describe their personal views and experience with DVB-T to date. What Peter learned was frustrating and in some cases difficult to accept as gospel.

Very few so-called experts are (or were) willing to stand before a crowded room filled with inquisitive minds and lecture on the realities of DVB-T. Those who were not frightened off by the prospect of embarrassing questions turned out to be practical realists who, like most of those in the audience, hold few false illusions about the "real status" of DVB-T.

Which is? Today??

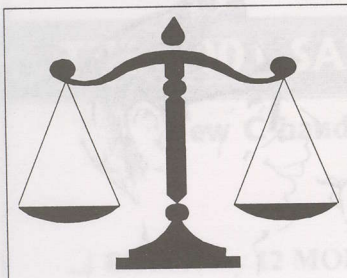
Not very good. To be sure, extremely promising. To be equally sure - a long-long ways from being a household word. Michele Gazolla from Italy's Fracarro brought us the European experience to date - mostly British and totally using bands IV and V channels 8 MHz in width. On the podium and off, Michele was adamant DVB-T will survive but very probably not in its present format nor will it happen quickly.

Geoff Osborne was exceptionally popular with the group - as the Senior Systems Engineer for 9-Australia's Melbourne GTV facility, he spoke directly to the real problems already surfacing in Australia and candidly about the likelihood these challenges would be resolved in a year. Or two. Or three. Geoff was loaded with tiny titbits of information and fresh insight - example. "ABC on channel 12 runs more power than the commercial stations - why? Because channel 12 is a new frequency for TV, there are millions of home rooftop antennas that were never designed to work on this channel, so ABC is using more transmitter power in hopes of equalising the universe of home antennas that won't work very well there."

The image below - a 50" plasma screen display of a USA HBO made-for-HDTV movie run closed circuit at GTV-9 for our examination. Bottom line? It pixelates (see p. 6).

-ON THE COVER-

SPRSCS 2001 in Melbourne - exceptionally high marks for content, very low in attendance raising serious questions about why we do this in the first place (p. 6).



LETTERS

Clean and spotless

"Thanks for organising the (SPRSCS 2001) Conference - it was well worth attending and left me with plenty to think about. Eric Fien's Saturday session was especially valuable and my compliments to whomever selected the Tudor as the 'host hotel' - it was clean, spotless and all services were available and of excellent quality!"

Ross Weir, Chch Polytech, Christchurch, NZ

Impressed

"I picked up two items at SPRSCS 2001 which back home and tested very much impress me. A Chinese built moderately priced digital receiver through SVEC is one of those - it runs so cool that it actually takes heat away from my hand when I touch it! And the performance is excellent. And the 20 mW SDStv.com L-band transmitter has amazing coverage - I can see where the bigger ten-watt version could easily reach out several tens of kilometres with gain antennas on each end."

Laurie Mathews, Mathews Electronics, Auckland, NZ

Positive Things

"After arriving back home (Sydney) had several visitors - people who dropped by here on their return trips to their home bases after attending the Melbourne conference. Everyone had positive things to say about this year's meeting."

Garry Cratt, Av-Comm Pty Ltd, Sydney

SDStv appreciated

"I appreciated the detailed SPRSCS 2001 presentation on SDStv and look forward to having a copy of the taped sessions for sharing with my technical people here. There may be considerable business opportunity here with this system."

Lindsay Jorgensen, Hitron, Waigani, Papua New Guinea

SDStv sessions from SPRSCS 001 were videotaped and eventually will be distributed through the Sunday Optus B3 Mediasat shows of SPACE Pacific. For those who are not within B3 footprints, contact us for quotation on supplying a VHS tape copy of the SDStv.com and DVB-T Work Shop sessions.

CTD subscription?

"Can you explain to me why I cannot enter a subscription to Coop's Technology Digest? Who do I have to 'know' to get this publication?"

Gerard Beckett, Sydney, NSW

In fact while all currently valid CTD subscriptions will be honoured (and copies sent) to the end of their present subscription term, this publication is being phased out - no new subscriuptions are being accepted, no renewals are being accepted.

Published letters - rules:

To be considered for publication, letters must include name and addresas of sender. This information will be withheld at your request.

PROGRAMMER PROGRAMMING PROMOTION UPDATE

OCTOBER 15, 2001

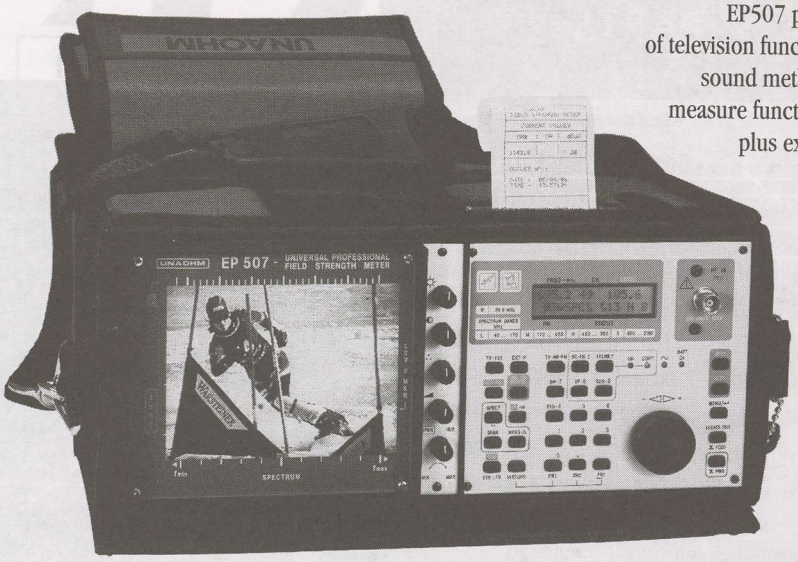
LBC (Lebanon) and Antenne (Greek) programme channels within 'Middle East Bouquet" on PAS-2 (3836Vt) went CA during last week in September resulting in "hundreds of calls from unhappy viewers" to firms that sold or installed their satellite dish systems. Encryption is Irdeto, there are reports piracy cards have already appeared. But hold on - rights representative Tony Ishak for World Media International P/L advises they will accept home DTH subscriptions of the LBC/ART/JSC portions of the bouquet. Details p. 30, here.

Last of the analogues. WorldNet using AsiaSat 2 (3850Hz) to distribute television and radio services was to close down (October 11, 0600 UTC) in favour of AsiaSat 2 MPEG-2 digital service (see detailed report p. 29 here). WorldNet has been last full-time analogue service using As2 - too close to our printing deadline to verify it shut down as scheduled (the Afghanistan situation being a consideration in why they might delay the shut down for some additional months).

SatFACTS web site. A decision. Effective immediately there will be no stand alone SatFACTS web site. But there will be a segment (section, set of pages) created by SatFACTS and distributed to anyone and everyone who cares about such things through Craig Sutton's Asia Pacific FTA Sat TV Guide site (www.apsattv.com). When you check into Craig's site, a "flashing" SatFACTS title on the left of the first page will advise you when the last update was entered to save you checking when no new material is present. You should be checking apsattv.com daily anyhow because Craig does an admirable job of keeping the communication lines open for satellite TV enthusiasts.

Now that Singapore is in charge. There is speculation about the future relationship between Optus/Singapore and the primary pay-TV firms Foxtel and Austar. During the past 30 days the financial position of cash strapped Austar has become even worse - New Zealand partner Telstra in the TelstraSaturn (Saturn being Austar) cable TV system rollout has agreed to acquire the Austar/Saturn portion of the system in the event Austar/Saturn are unable to meet their financial obligations. It is a near-given this will occur. At the same time, Foxtel needs Austar's presence for shared customer use of the many programme services which Foxtel and Austar offer jointly. If Austar suddenly quit (not likely but possible), Foxtel would have to pick up the Austar programmer payments. Austar presently pays a portion of what the programmers receive and the total (sum) would be nearly the same even if Austar was not paying. Which brings us to the quandary concerning continued Foxtel (and Austar) leasing of satellite space from Optus. The B3 satellite is not forever and new satellite opportunities are coming. Two in fact. The present Optus satellites operate in the "fixed" satellite service which means they have a legal status similar to those operated by Intelsat (as an example). Two new orbit slots, one of which would be at 164E and the second at 152E, are to become available as "broadcast" (not "fixed") assignments. Foxtel and other possible partners are looking at what would happen if they abandoned Optus totally and went into the satellite business themselves. Four firms have responded to a request for interest in these two slots - including Foxtel, PanAmSat and Optus. The concept is that Foxtel perhaps also assisting New Zealand's Sky Network would invest in a satellite of their own. The sums are huge but at the same time if you are paying Optus monthly rental for some quantity of transponders, those sums are also huge. What is certain is that nothing is certain as long as Austar continues to have cash problems and the future availability of Optus satellite space through Singapore's ownership is an unknown.

The growing Unaohm Television Analyser family

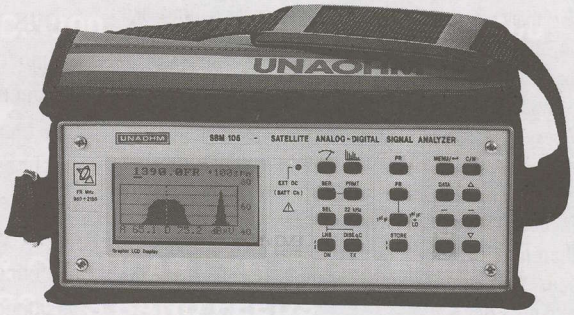


EP507 permits excellence in measurement across a wide range of television functions. Dual colour coded frequency markers provide a sound method of Digital Channel Power measurement. Automatic measure functions include Carrier to Noise and Video to Audio Ratios plus expanded Data Logging. Improved resolution bandwidth displays extra Spectrum detail. QPSK, OFDM and QAM quality measures of Bit Error Rate and Modulation Error Ratio etc., colour Constellation Diagram and printout of MPEG Network Information Tables are available. An internal reference Noise Generator that permits measurement of insertion loss or filter alignment etc. anywhere between 45 and 2000MHz is also available. A quality TFT LCD screen uses colour to clarify the meaning of most measurements, or simply to show a colour TV picture.

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

EP-313 provides a new benchmark for price, function and quality in a Television Analyser. Spectrum mode uses an easy to see frequency marker. Carrier to Noise ratio, Vision to Audio ratio and Digital Channel Power measurements display digitally and are automatic. 100 PReset tuning positions store your favourite channels, whilst factory preset channel plans enable tuning by CHannel almost anywhere, by FRequency either by direct entry or step. Teletext is standard. Factory Digital Signal Quality options for QPSK, OFDM or QAM round out the EP-313's measurement abilities.

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



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More threatening noises from TARBS?

"There has been much discussion in the chat rooms of late concerning yet another expansion of the TARBS pay-TV bouquet It is time for the industry as a body to take some action, make some noise, protesting the way that TARBS is taking over distribution of national pay-TV packages to the exclusion of anyone who is within their Australia Ku coverage footprint via PAS-8. What follows was first posted by Tony Drexel from Free-to-Air Satellite Services in South Australia:

"Dear Satellite user/installer/supplier/importer. Your hobby/job is in grave danger because of a pay-TV operator. The problem is not competition as you might first think. Rather it is being caused by a pay-TV operator buying up free satellite signals from every corner of the globe, many of which have been free for years, and then encrypting them so that only they and their customers can see the services. If this pay-TV operator acted in a similar way to Optus, Foxtel or Austar, by carrying the broadcasts in their Australia wide Ku feeds encrypted, there would be no problem. But in this instance, TARBS has gone to the extreme of demanding previously free to air C band services often distributed by national broadcasters or governments must also encrypt their C-band services throughout the entire Asia region.

"I urge everyone affected by this situation to take steps to publicise what it happening and who ends up suffering as a result. For example, locate the local Greek (or any other nationality) association. Create a petition protesting the TARBS business plan that currently forces broadcasters such as ERT/NET to encrypt their C-band services as a condition to being carried by TARBS on their Ku bouquet. Use the assistance of the ethnic groups to get hundreds, thousands of signatures on the petition. Then send the original signed sheets to the TV station involved, a copy to the Greek Ministry of Broadcasting in Athens, and a second copy to the ACCC in Canberra.

"Email or fax or write to your elected representatives in Canberra, as well as the Ministry of Broadcasting. Begin by outlining how many hundreds of small mom and pop businesses are being driven to the wall by this selfish TARBS policy. Mention that thousands of Australians have invested hard earned money in satellite systems to receive these FTA transmissions. You can contact a government minister through http://www.aph.gov.au/library/parl/39/ministry/mionistry.htm. As an absolute minimum, a country such as Greece should continue to have at least one FTA broadcaster available for C-band reception. Anything less than that is a sad commentary on how firms like TARBS have been allowed to take over FTA satellite for their own corporate goals.

"And this aside - I simply cannot understand how a service such as Alpha-Skai can agree to encrypt their C-band feed through Thaicom which reaches more than 60 countries in Asia and the Pacific, in favour of being available only through TARBS and then only in Australia. Have these TV stations no sense of responsibility beyond the lure of the almighty dollar?"

Craig Sutton, Apsattv.com

SF is unable to verify reports TARBS is partially owned by Osada bin Laden.

HARDWARE EQUIPMENT PARTS UPDATE

OCTOBER 15, 2001

Knows his stuff. Geoffrey F. Osborne, Senior Systems Engineer, General Television Corporation (GTV-9) Melbourne was perhaps most helpful and best understood speaker at SPRSCS 2001 Melbourne conference. Geoff brought DVB-T down to a technical level most could understand and answered questions which many attendees had been carrying around "unanswered" for a year or more. Terrestrial digital may have a long ways to go before maturity - guys like Osborne will see that it happens - eventually.

Entertainment machine. A major change in product emphasis to be announced by Nokia during November. "Nokia believes the new TV world is between companies iike Microsoft, Sony and Nokia -- no more Korean and Taiwanese black box makers." Accordingly, a newly designed "Entertainment Machine" (their name) the Nokia 510S is to be initially sold only in Sweden (due to - their words - "debugging reasons"). The 510 S has 40 G-byte of hard disc recording space, will operate 'Playstation' with downloading from Internet as well as embedded games, includes MP3 Jukebox downloading and file management, full Internet browsing ("from a sofa without a PC"), and something they call Navibar. This is a video tool allowing the user to arrange all audio and video programmes including recorded material from and to whatever video sources as you may have available. There is more. "All of this is supported by Nokia's own headend centre so that every night your media terminal will be updated via satellite." New TV and radio services will automatically be updated. As for the more common type of "black box" device, "Nokia will stay out of the middleware-box market and models such as the 9800 will no longer be available. There will be a line of free-to-air products including a new 9470 FTA available initially late in November." The new 510 S has a 366 MHz CPU, 32 - 64 MB SDRAM memory, 4 MB SDRAM subsystem for DVD, 1 + 1 MB flash memory for boot loader and DVB system. It does PAL and NTSC, has two QPSK/QAM/COFDM tuners. Pricing initially will have a list of US$1,000 but jacobsons (thore@jacobsons.nu) is suggesting US$650 through their outlet in Sweden. Remember - this product will only be "supported in Sweden."

DVB-T aerials. For many readers, a quandry. Is there really a difference between currently available VHF / UHF consumer TV aerials and their newly announced "digital ready" versions? SPRSCS 2001's all day DVB-T work shop offered significant evidence that any existing quality designed and manufactured (analogue) model will do just fine for digital but of course the TV aerial sellers would like you to believe otherwise. We'll be loking at this.

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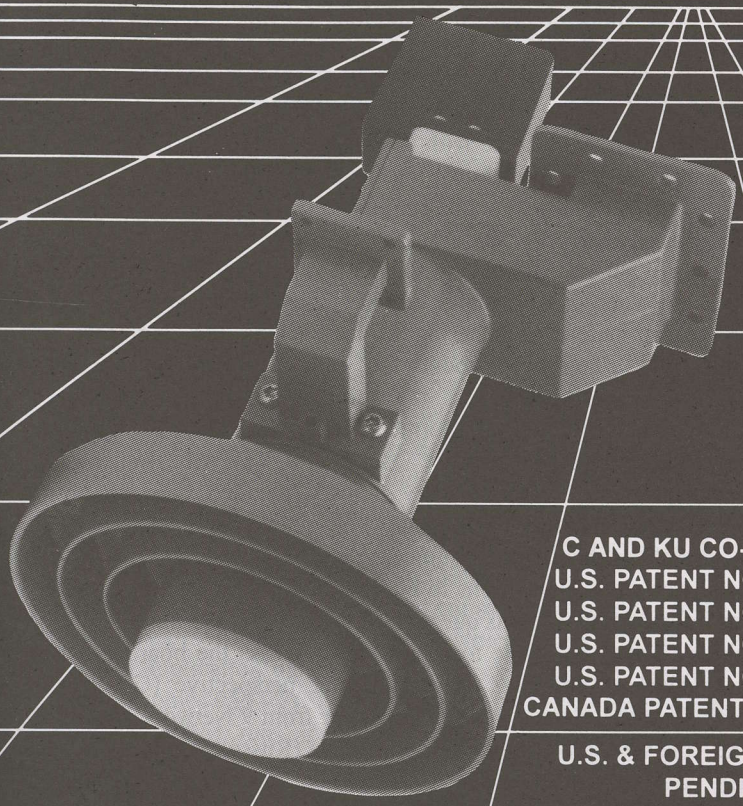

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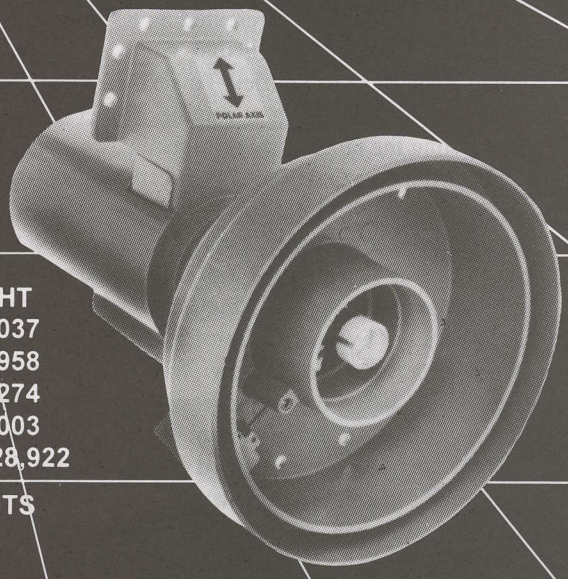

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Call it paranoia, mass hysteria, or a realistic assessment of how rapidly the 21st century rules of life (and death) can make dramatic U-turns. For if you believe the World Trade Center terrorist attacks will pass quickly onto the rear pages of newspaper editorial pages, consider this evidence to the contrary.

SPRSCS 2001 presenter Eric Fien, scheduled for a full day seminar to describe the electronics and mechanics of rewiring Sydney's Chifley Tower 40+ storey building for digital + satellite distribution, had created an 85 minute "walk through" VHS tape showing the actual work as it was being done. When Fien went to Chifley Tower Management (M.I.D.) for what should have been a routine rubber stamp approval of distributing the tapes within his seminar, *he was denied.*

"After the senseless September 11th destruction of the World Trade Center buildings in New York City, a new level of heightened security ruled against us. They saw the distribution of the tape as potentially a tool that terrorists might use to plan similar havoc on one of Sydney's tallest structures."

So here we were, a group of technical people attempting to share expertise for a new form of signal transmission technology, being denied access to a basic tool of that would under virtually any other circumstance have been a given.

Some people must be singled out for making the very best of what might have been a far worst situation. Peter Lacey is one of those. He had "volunteered" to co-ordinate the all-day DVB-T work shop on Thursday of conference week. Lacey as a supplier of DVB-T (as well as DVB-S) test equipment, and as a primary supplier of DVB-T consumer (antenna system) hardware (from Fracarro in Italy) had a leg up on who to talk with about creating presentations on this still very sensitive subject. He was supported in this work shop effort by Michele Gazolla who came to Melbourne to attend the conference on behalf of his employer Fracarro of Italy. This Italian firm has as much experience with designing suitable DVB-T reception aerials, and integrating masthead amplifiers, signal splitters and other distribution equipment, as anyone in the world today.

What Lacey would discover was this. Without naming the guilty parties, virtually nobody in Australia was willing to stand before a gathering of technicians and engineers and speak "honestly" about the status of DVB-T reception challenges. Much less the solutions to those problems. A "trade association" formed late in 2000 to represent broadcasters, hardware suppliers, digital transmission equipment designers very quickly decided they could not locate in their membership roster even *one* individual to address this complex subject. Yet this same group maintains a web site which claims to be the "Australian reference source" for anyone who has questions concerning DVB-T.

Lacey *was* able to round up an across the board group of speakers covering the broadcaster perspective (Geoffrey F. Osborne, Senior Systems Engineer from 9 Network Australia), the set-top box creator's perspective (Russell Futter and Anand Govender of UEC Pty Ltd), the aforementioned Michele Gazolla of Fracarro and Leon Senior of Strong Australia addressing the distributor and installer concerns.

Lacey: "*I though the UEC team was excellent and well received by everyone. Geoff Osborne came across as a real world guy just like most attendees to whom they could address their questions and hope to get honest, real answers.*"

As an aside, SF publisher Bob Cooper managed a several hour tour of the 9 Melbourne facility where dozens of DVB-T projects are underway. Of particular note - a 50" plasma screen (16:9) monitor "fed" from a prototype VHS format digital player using tapes sourced from the American CBS Network and pay service HBO. As good as terrestrial DVB-T may actually look under the best of conditions, seeing DVB on a 50" plasma screen driven directly by a first generation mastered tape sourced from major US networks was an experience most of us will not have for many years to come. And if it makes you feel any better, even the USA sourced digital tapes would pixelate which on a 50" screen is a bit like having your head inside the mouth of a lion when he burps! If all of the money in the world using the very latest

LACEY'S Australia exhibit suite less some important hardware "delayed by terrorist activities." A not insignificant amount of show-bound electronics was held up or simply denied to us because of the prevailing world tension.

equipment still produces pixelation problems on a closed circuit system inside the 9 engineering department, those who are battling from the trenches can be excused for not being quite certain what is expected of them with typical in-home field installations.

Test equipment. If digital test equipment which provides one or two levels of BER is mandatory for competent installations, it may be another year before typical installers are so equipped. Peter Lacey, again, was anxious to have a new DVB-S meter on display but with the terrorist strikes shipment of the brand new instrument was delayed. As SF goes to press, the long promised instrument has arrived at Lacey's Australia and it produces "proper" BER measurement plus digital SNR (signal to noise ratio), signal level(s) and also creates an output which can be retained in a PC or printed for hand-held reference.

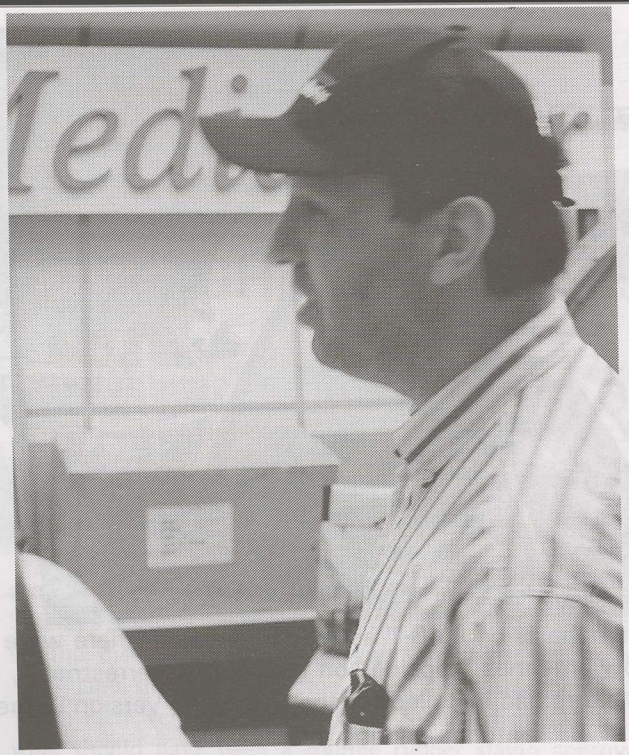
WITH as much emphasis on DVB-T as the "S" version, there were as many show antennas "topside" on the roof for terrestrial reception as exhibitors had installed for the S/satellite version in the antenna parking lot.

Another new European instrument on display at the MediaStar (Opac) booth may turn out to be a "sleeper product" which could find widespread use in the Pacific. Jacob Keness demonstrated how incredibly straight forward locating, identifying, measuring and displaying digital (and analogue) signals can be with this European product shown for the first time in this region of the world - price in the region of A$3,500.

Skandia and Av-Comm both had entirely new versions of an older design work horse instrument which found at least one unusual application during the conference. Skandia's Satlook Mark III tunes 950 - 2150 MHz, displays analogue video (with tuneable audio), runs approximately 1.5 hours on an in-built rechargeable battery. The Av-Comm Satview has similar features and both will be of considerable value to installers who become involved in SDStv.com systems. During a Friday afternoon demonstration of the low power (20 mW) SDStv.com basic modulator package, work shop attendees were sent out into the Box Hill campus with meters provided by Lacey's Australia as well as Skandia. Each meter had a SDStv.com logi antenna plugged into the input and attendees were able to wander the full range of indoor and outdoor Box Hill campus areas checking out just how solid coverage from the 20 mW transmitter was. Word quickly spread and other test equipment in the exhibit area was pressed into service - Jacob Keness discovered he could detach the input cable from his European meter and still receive the 20 mW transmitter in the MediaStar exhibit booth - just the input BNC coaxial connector's pin was adequate to receive the SDStv.com signal. Peter Lacey may be correct in assessing that the future of competent DVB-S and DVB-T installations will require a suitable BER measurement instrument but for the SDStv.com crowd, the new Skandia and Av-Comm instruments in their analogue-only format look like serious contenders for dealer attention. Plus - once you have a SDStv.com transmitter set up, there is a very powerful element of salesmanship that one can employ by holding the under 3 kg palm sized instrument in the hand with a 3" stubby whip for a receiving antenna while demonstrating SDStv.com reception as you walk down the street or "survey" the coverage possibilities on a piece of property. People get pretty excited when you can show them CNN in their backyard with no wires connected.

New receivers. Anything you (as in "you") have not previously seen is new, even if it has been available for some time. Nationwide went one step better by showing models of future UEC DVB-T and DVB-S hardware which can only be described as "futuristic". SatFACTS has already tested and reviewed one HD (hard drive) satellite receiver (the STRONG 4890 - see SF for July 2001). UEC's exhibit included several variations to hard drive recording including one version which will have up to four separate tuner inputs. The concept is that

STRONG Australia exhibit suite covered the full range from DVB-S to the newer SDStv.com hardware. Of special interest to quality minded installers, a brand new line of F series connectors available in the Pacific for the first time from Stirling Connectors in Canada.



JACOB Keness of MediaStar; "Irdeto for every occasion."

DVB-S or DVB-T will one day be an integrated set-top box, and each "source" will have its own multiple input capabilities so that the user can select which source will be recorded (on the internal hard drive) when and for how long. With two or more DVB-T or DVB-S tuners included, the user can record on one channel while watching another, whether the input is DVB-T or DVB-S. You cannot buy this model today but "sometime in the latter half of 2002" it should be available.

The direction of hard drive + DVB-S (or DVB-T) is certainly far from clear at this point in time. BSkyB in the UK had originally promised a combination DVB-S and hard drive receiver by now but appears to have changed their minds and will now only offer HD (hard drives) as an optional extra and then only as a separate box (not a part of the conditional access IRD). A similar all-for-one and one-for-all CA IRD plus HD was promised by BSkyB affiliate Sky Network NZ and that too has been pushed well to the background. What this suggests is that HD promoters may have over rated the importance of their product (in fact in the USA fewer than 200,000 stand-alone hard drives have been sold in two years - even at bargain basement prices of under US$200). What is apparent is if you offer HD inside a CA receiver, and it is only capable of hard drive recording digital signals processed by the receiver's single function tuner, you may be in for a tough sell in the marketplace. At the very least, consumers want to be able to record one - watch another with their CA receiver. This cannot presently be done with out compromising CA security because it requires one smart card to access and approve two separate channels at one time. Pirate hardware to do just this exists (from Pakistan of all places) - one smart card can run 3 or even 6 separate receivers simultaneously. But the pay TV operators such as BSkyB and Sky NZ don't want that kind of flexibility in the hands of the public at large so for now the entire hard drive and multiple channel plan is in limbo.

The hard drive concept at this stage is being subjected to intense pressures from the copyright folks who would prefer it not happen as once digital hard drive copies are possible, there goes the control which rights owners currently exert on programme distributors. It is not a question of what can technology do - but rather a challenge presented by people who like the status quo left alone because it benefits their present way of doing business. Hard drives in every home? Not anytime soon.

Still with new receivers - SVEC had some Chinese built MPEG-2 FTA digital models which certainly push existing pricing barriers. We won't tell you precisely how much these receivers are (installer/dealer pricing) but will suggest that through SVEC you can now acquire a complete 2.3m terminal (antenna, mount, LNBf, digital MPEG-2 IRD) for less than what you have probably been paying for a receiver alone.

Receivers that do some form of Irdeto continue to be "the rage" and those that cleverly ignore the "coco" (country code) are especially popular with one segment of the market. We saw first hand proof that conditional access system security has never been under more intense pressure from a wide variety of Asian, European and even home grown would be practitioners.

It takes a pretty spectacular break through (or refinement) in the F-connector field to attract the kind of attention which Stirling Connectors out of Canada was getting at the STRONG Australia exhibit. Stirling sent a sales engineer to the show from Toronto, and attendees were dazzled by a line of connectors (all shapes and sizes, RG6 and RG11, straight through, right-angle, you name it) which Stirling claims roll out of their facility in the region of ten million plus per month. In the past, a firm would make that kind of impression with something as mundane as F connectors by being cheaper than

WHO was exhibiting and HOW to contact them

Avcom -Ramsey Technologies Inc. (709 Canning Parkway, Victor, NY 14564 USA) www.avcomramsey.com

DX Antenna (79 Bellamy St., Pennant Hills, NSW 2120) www.DX-Trading.Co.jp (61-2-9484-3847)

Hills Antenna & TV Systems (9 Nowill St, Condell Park NSW 2200) www.hillsantenna.com.au (61-2-9708 1611)

Lacey's Australia (12 Kitson St, Frankston Vic 3199) 61-3-9783 2388

Melbourne Satellites P/L (PO Box 901, Bayswater, Victoria 3153) www.melbournesatellites.com.au (61-3-9738 0888)

MediaStar/OPAC (24 Bosci Road, Ingleburn NSW 2565) 61-2- 9618 5777

Nationwide Antenna Systems & Specialty Products Pty Ltd (28 Newstead Terrace, Newstead Qld 4008) www.naspl.com.au (61-7- 3252 2947)

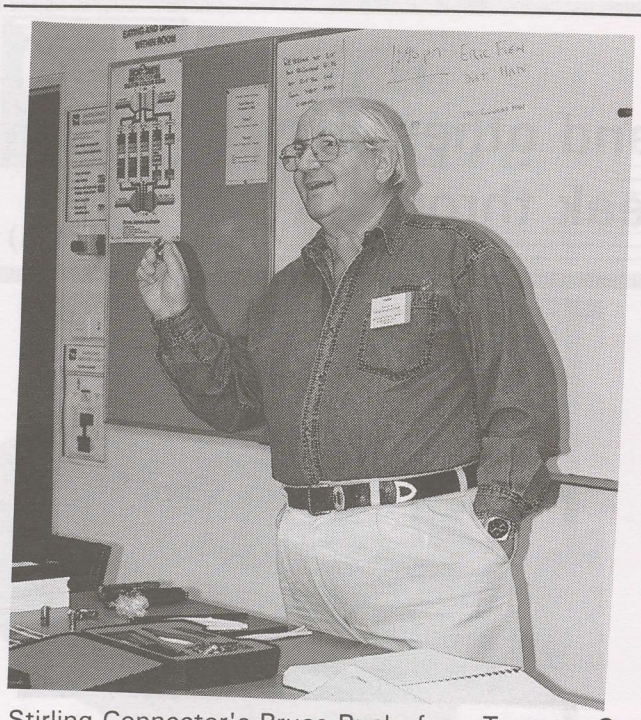
Sciteq P/L (33 Kentia Loop, Waneroo WA 6065) www.sciteq.com.au (61-8 9306 3738)

Skandia Electronics P/L (PO Box 488, Hawthorn, Victoria 3122) www.skandia.com.au (61-3- 9819 2466)

Skyvision Australia Burwood, Victoria (61-3-9888 7491)

STRONG Aust (302 Chesterville Rd, Moorabbin East, Victoria 3189) 61-3-9553 3399

SVEC Company P/L (64 Mahoneys Rd, Forest Hill Victoria 3131) 61-3-8801 0336



Stirling Connector's Bruce Buck, from Toronto, Ontario, Canada (left) describes why machined brass F series coaxial connectors offer significantly superior weather tight protection of outdoor connections. Stirling's products will shortly be available for the first time in the Pacific - certainly the "Cadillac" of all F series fittings in the world today. Michele Gazolla of Fracarro (Italy) describes practical problems when analogue and digital terrestrial services are processed by the same reception antenna system (right).

the competition or by throwing in free cartons of Canadian whiskey for the purchasing agent electing their product over the competition. Not so with Stirling. They actually have a better line of connectors. *How much better?* So much so that even costing more (in some cases twice to thrice as much as competition) they manage to outsell all but the least expensive (lowest quality) made-in-Bangladesh competition. Stirling brings an entirely new discipline to connectors and a single sentence says it all: "*There are no crimping tools for Stirling connectors.*" Eric Fien (broadnet@ihug.com.au) is responsible for establishing their presence in the Pacific. Imagine that - *no more crimping tools!*

Will there be another SPRSCS?

Although those who did attend by-in-large rated this year's technical conference as "well done," "informative" and "challenging" the low turn out was a shocker. Even when those who registered but were unable to attend because of transport or Australian VISA problems are added, the turn out was destined to be lower than 2000 and far below peak years of SPRSCS held in Auckland (NZ) in the 1996-1997 era.

When we analyse carefully at those who did attend, what becomes obvious is one thing: There were as many non-Australians in most sessions as there were Australians and in some classes Australians were in the minority. When there are more New Zealanders in attendance than people from the state of Victoria (where Melbourne is located for those non-Australians reading this), that says something rather dramatic about the status of the "industry" in Australia proper. When there were more registrants from PNG than South Australia, more from Fiji than Western Australia - well, you get the idea.

The first six SPRSCS conferences were held in New Zealand; the last two have been at Box Hill / Melbourne. It has been our intention to move on to the Sydney region at some future date. Whether that happens in 2002 or whether the 2001 SPRSCS is the last one - for Australia at least - will be determined over the next 3-6 months.

This challenge is not unique to the SPRSCS gathering. The original Australian born and bred (February annual) trade show for satellite and cable has rapidly deteriorated into a much less clearly defined "general" show where people spend large dollars to show off their skills and products largely to their competition. Conversely, shows like Singapore (June) have grown from strength to strength.

With the rapid development of Internet as a method of showing off and explaining complex technologies and products, the era of face to face trade shows may be approaching a natural death. Some "answers" are quick and not well thought out.

"*Don't charge for the show attendance but charge exhibitors more to be there*" sounds good but in a period of history when going to a first run movie will set you back $10 or more for 2 hours of occupying a padded fold-down seat it simply does not equate. "*Have better sessions*" is quick and easy to say but when a dozen people agree to pay Eric Fien A$375 for 5 hours of expert tutorial and every one of them is loud in their acclaim for the job Eric did and the benefits they received by attending - well, sessions don't get any better than this. At any price.

When a totally new technology such as SDStv.com is introduced at the conference and it meets with such enthusiasm that all SDStv.com products immediately go into a "back order" status, enthusiasm and support for what the conference is all about simply can't get much better than this.

So figure it out. Those who attended were enthusiastic about the event - those who did not could care less. Something rather dramatic obviously needs to be done here to bring back those 500-attendee records which Auckland attracted in the 1996-1997 era. If you have an answer, we'd like to hear from you!

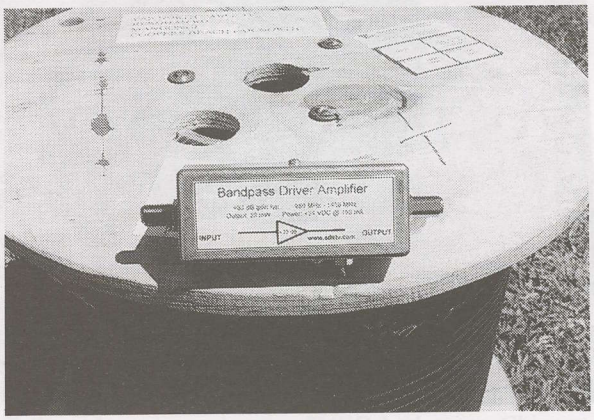
No more long cable runs!

BDA Solutions and other nifty SDStv.com break throughs

Under threat from "Barry the Beaver" and others who used Internet chat rooms to describe their planned "attacks" on SDStv technology during the Melbourne conference, we are pleased to report all went relatively smoothly. There were some hitches of course - sessions dealing with SDStv fell on the shoulders of SatFACTS publisher Bob Cooper because of the US terrorist attacks that all but shut down international air flights for many of the scheduled speakers. And a quantity of SDStv.com products shipped in just ahead of the conference to Australian based Pacific region distributor STRONG Aust did not quite match the intensive "buy and take home with me" interest of attendees. Discone antennas, for example, were quick to drop to inventory "zero". But this is not about the show and SDStv as shown there - rather it is about the rapid development of SDStv.com technology and how it may prove to be a very useful tool to you in your business dealings.

Most of the SatFACTS coverage of SDStv to date has focused on the use of one (or more) single channel analogue L-band transmitters to relay standard video + audio from one site to another site (or alternately, thousands of receive sites). Because SDStv uses wideband FM, in the identical technical format as standard C or Ku band (analogue) satellites, the existing universe of L-band analogue receivers are ideally suited to this new application. This is simply "satellite television" without a satellite - the transmitter is not on C or Ku band, but rather it is in L-band (950 - 1450 MHz) using the modulation (FM), bandwidth (27 MHz) and other technical parameters of a standard satellite.

In SatFACTS September we touched upon an alternate approach - rebroadcasting the entire 950 - 1450 LNB output range through a broadband amplifier and transmission antenna. The SDStv.com item developed to do this is the BDA-33, a bandpass filtered "buffer amplifier" which connects up as shown below. The LNB output line between the antenna and the receiver is broken (cut) and the BDA is inserted (left). The BDA has one input (connecting to the LNB side of the cut line), two outputs. One of these outputs reconnects to the receiver-run coaxial cable. In this way the receiver's 14/18Vdc power supply intended to operate the LNB continues to do so and it also provides power to operate the BDA-33 box.

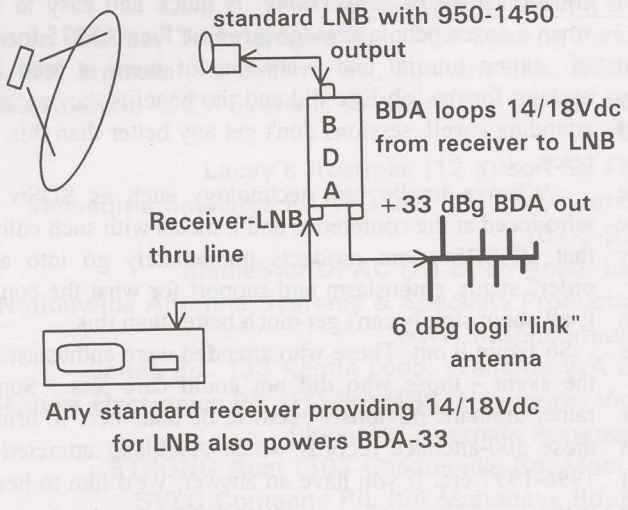


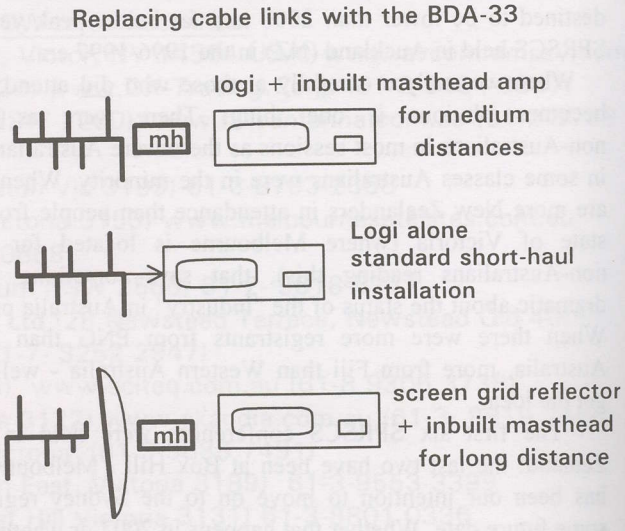
The BDA-33 as first shown in Melbourne. It is a high performance amplifier which boasts 33 dB of gain across the 950 - 1450 MHz region, with "bandpass filtering" to reject signals outside of the standard L-band region. Think of it as a high-output capable super-duper inline amplifier with many new applications previously impossible to create.

The second BDA-33 output is where the 33 dB of gain appears. What makes this output special is as follows:

1) Whereas a typical "line amplifier" might create 10 - 20 dB of signal gain (for use when coax line runs are long), the BDA-33 has 33 dB of gain.

2) And a 20 mW (milliwatt or 0.02 watt) output capability. That is around ten thousand times more output capability than a stock line amplifier. The "output capability" is extremely important for this application because we need "power" to





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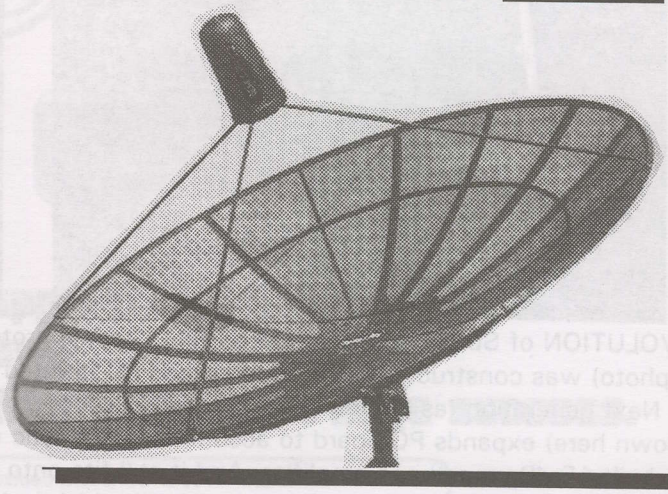

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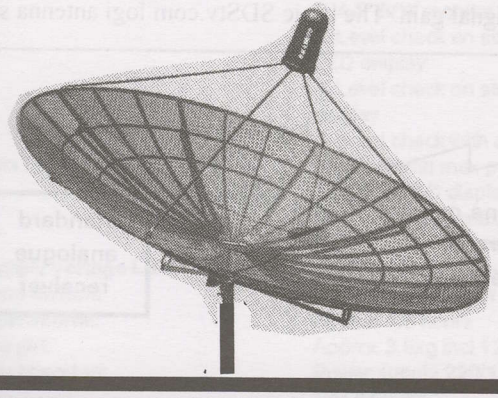

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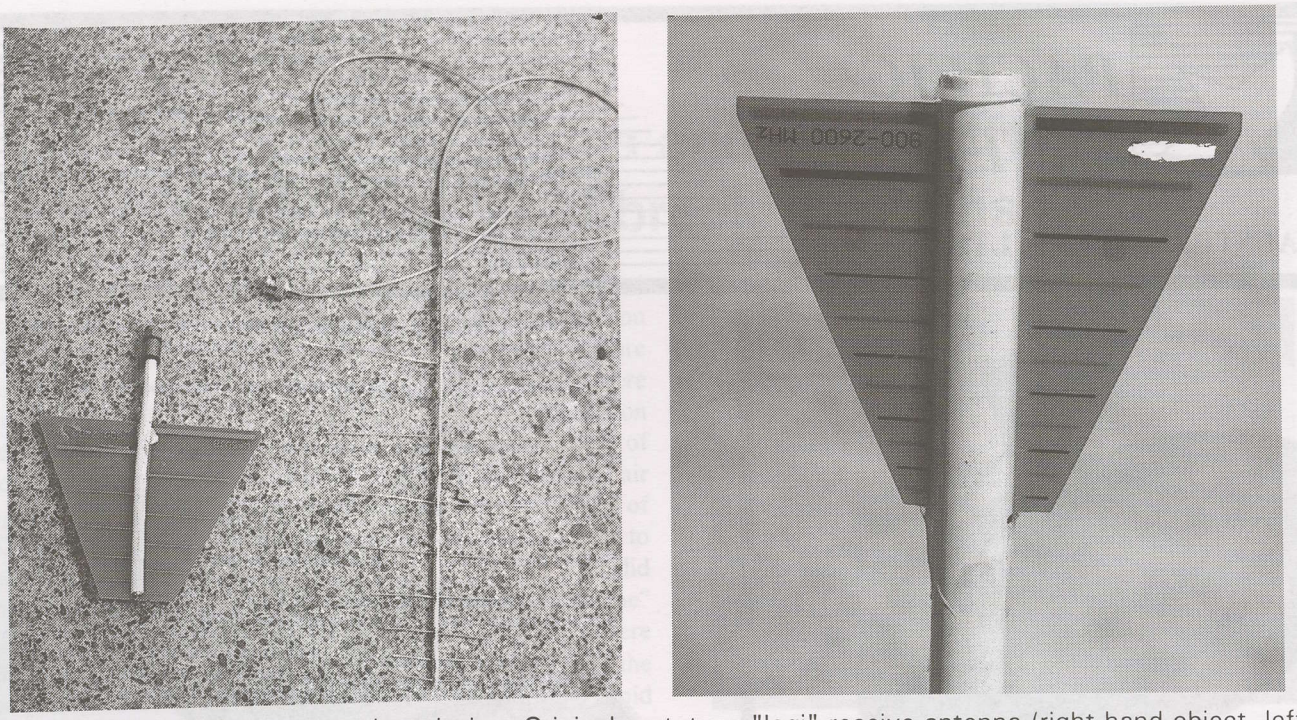


EVOLUTION of SDStv.com product design. Original prototype "logi" receive antenna (right hand object, left photo) was constructed from double-sided PC (printed circuit) board, miniature coax and wire elements. Next generation (as shown in Melbourne) evolved onto double-sided PC board. Present generation (not shown here) expands PC board to accommodate plastic mast mounting clamp system and optional onboard, in-built 15 dBg masthead amplifier. And it still fits onto the palm of your hand! In right hand photo (above) PC board logi mounts to PVC pipe inside of which is 15 dBg masthead amplifier, powered by receiver's normal 14/18Vdc (LNB) supply.

create enough signal to bridge through the air to non-wire connected receive sites.

The second output of the BDA-33, where 33 dB of gain is available, connects directly to a SDStv.com link antenna - such as the logi antenna shown here.

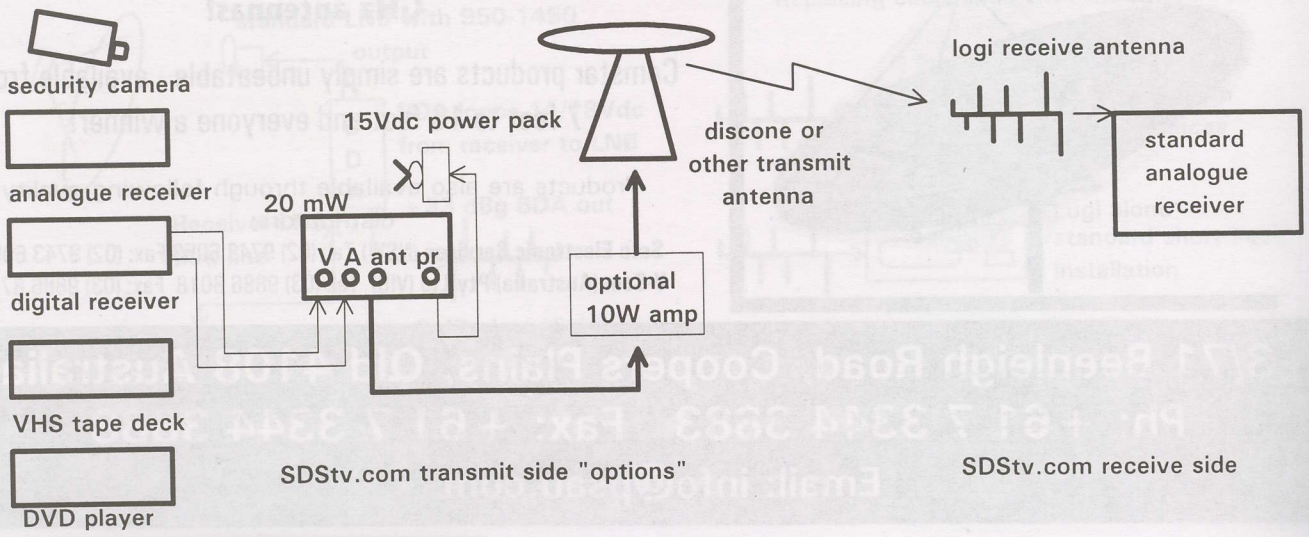
"Link" is an important perhaps new word to your satellite technology vocabulary. It means the ability to send through the air (as in linking together) signals which pass through the BDA-33. A companion to "link" or "linking" is "link budget".

Link Budget

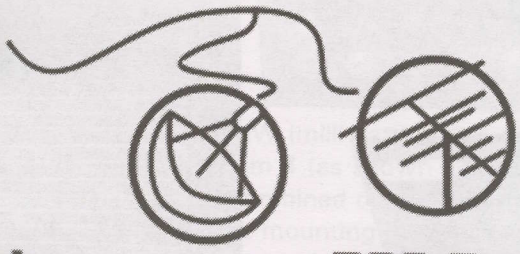
If you have been with us since the series of SDStv.com developmental reports began in SatFACTS (July 2001), you are at least vaguely aware that we are dealing with dBs or decibels of available signal in any L-band SDStv system. And you should be conscious that we can add or subtract dBs to the system "link budget" by using a number of tools. They include:

1) Transmitter power. The basic analogue SDStv.com transmitter creates 20 mW (milliwatts - 0.02 watts) of power. The "after burner" ten-watt amplifier (transmit signal booster) adds around 27 dB of transmitter power to the equation when used.

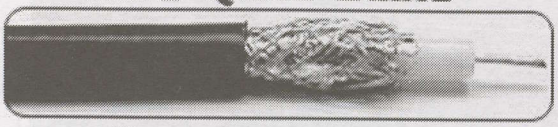
2) Transmitter *radiated* power. The basic Discone transmit antenna has nominal (0 dB) gain which is not impressive. However, it transmits over a complete circular coverage pattern (360 degree coverage) and that is a desirable attribute. If we decide to not cover a 360 degree circle, and elect to cover a portion of a circular pattern (such as a 90 degree "wedge") we can use a directional transmit antenna which provides signal gain. The basic SDStv.com logi antenna shown



Skandia



RG6 Quad Cable



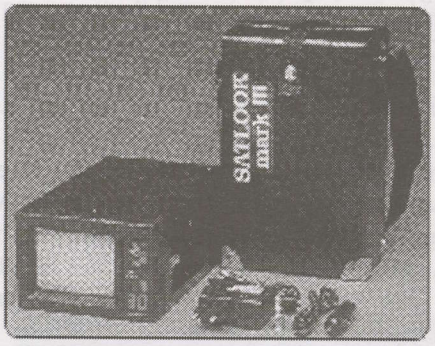
Satellite Cable

RG6 Dual Cable

Digital Cable

Thankyou to everyone who supported Skandia at the Box Hill Cable & Satellite show.

Our satellite meter, Satlook Mark III was a huge success.



The instrument is provided with a 4.5" B/W monitor which either shows normal TV-channels or the frequency spectrum 920-2150MHz (normal or expanded mode).
Sound frequencies between 5.5 - 8.5MHz can be tuned in and listend to.
The polarisation of the LNB is switchable with 22KHz-tone and /or with 13/18 V. The instrument is protected from short circuiting when connecting the LNB.
Weighs only about 3.5kg

SPECIFICATIONS

Input Frequency:	920-2150MHz
Input level:	30-100dBµV-volt
Input impedance:	75 ohm, BNC Connector
Monitor type:	Multi(PAL, NTSC, SECAM)
Picture mode:	KU and C-band(normal/inverted video)
Audio soundcarrier:	Tunable 5.5 - 8.5MHz(Mono) Volume Control.
Measuring method:	1. Full spectrum, normal or expanded video 2. 4.5" B/W monitor with full picture 3. Level check on single channel with two digit LED display 4. Level check on single channel with colour bar display 5. Level check with audio indication on loudspeaker
Max Level:	Spectral with max peaks Two digit LED display with max value Colour bar with max indication Maximum audiotone on loudspeaker
Supply voltage LNB:	13V/18V switchable
Tone switch:	22KHz tone, On/Off
Operational:	Approx 1.5 hours
Weight:	Approx 3.5kg incl 12 volt, 3 Amp battery
Accessories:	Power supply 220/13.5volt DC, 1.7 Amp Car adaptor Carry case Adaptor BNC/F connector Owners manual.

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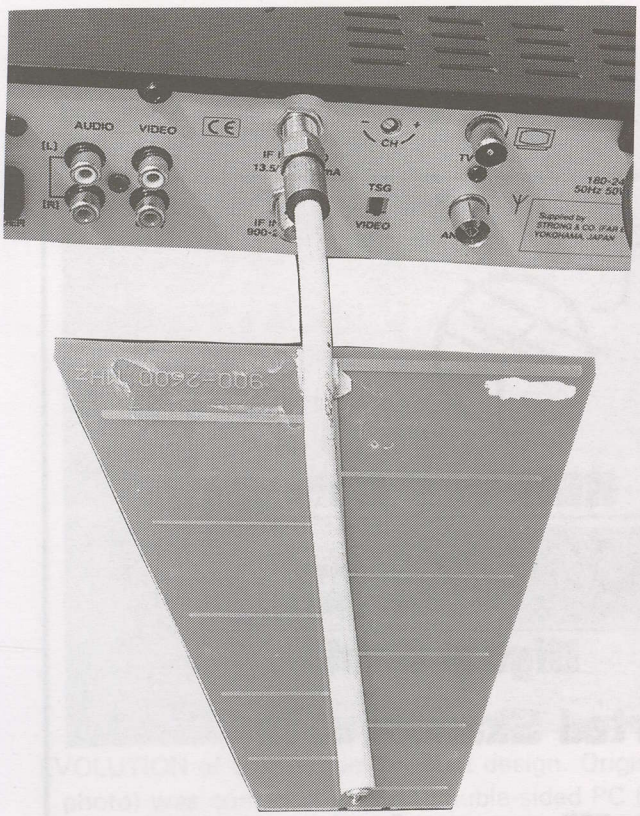
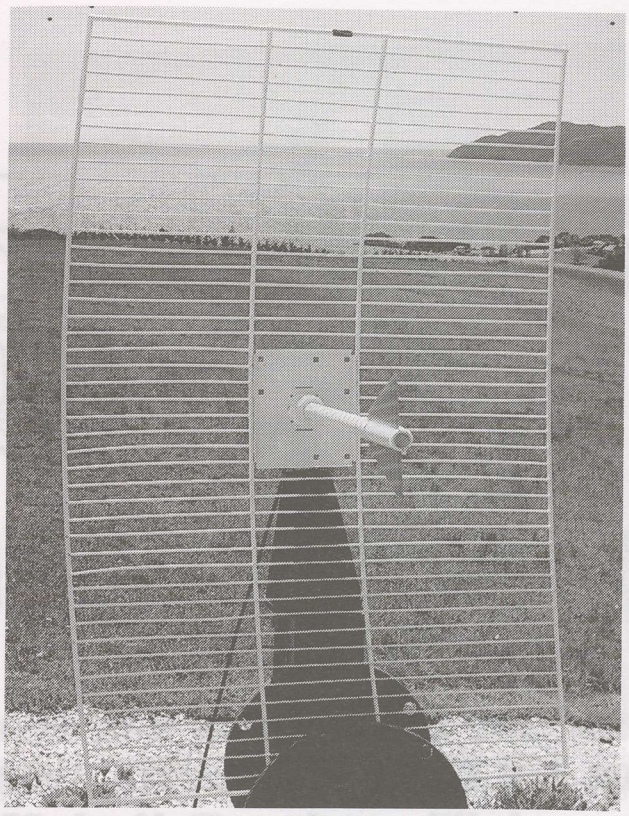




Within 500m - 1 km of 20 mW transmitter site, even lacking line of sight (LOS), the logi antenna can be attached directly to normal analogue (or digital) receiver LNB input fitting for direct reception (left hand photo). To increase range, a larger receive antenna such as screen grid reflector using logi antenna as "feed" with masthead (mh) amplifier built into logi feed (above, right) - adding 9+ dB gain of reflector plus 15 dB gain of masthead amp = 24 "more" link-budget dB than standard logi alone.

here has 6 dB of gain and if we use it instead of the Discone, in the favoured direction the signal will be 6 dB stronger than with a Discone transmit antenna. Variations in this logi antenna can increase the radiated transmit power by as much as 15 dB over a Discone using presently available SDStv.com off-the-shelf products.

3) Receiver "amplifier" power. The standard logi antenna with its 6 dB of gain provides a reference for other higher gain receive antenna systems. The logi is so small (barely covers the palm of your hand) it is extremely easy to install and even camouflage (simply lay it on a shelf or even on top of the L-band receiver). A logi antenna moved from an indoor book shelf to an outside wall of a home, running a short length of RG6 from the logi to the L-band receiver, is one way to increase (by perhaps 8 - 10 dB) the amount of signal to the receiver. Another way is to elect to use the logi version with a built-in signal preamplifier. This 15 dB gain preamplifier amplifies or magnifies the received signal to the same degree that increasing from a 60 cm to a 3m dish for Ku would do. Another way to increase the dBs available for the "link budget" is to actually use a larger (higher gain) antenna. The screen grid reflector (photo, upper right) is one big-signal-gain option - adding 15 dB of gain (9 more than a simple logi). If you marry a screen grid reflector to an inbuilt 15 dB gain masthead amplifier, the receive site now has 24 more (9 + 15) "link budget" decibels to work with. All of this points up that the SDStv.com system designer has a wide variety of "tricks" at his (or her) disposal (1) to ensure that all receiving sites in the system will have the technically perfect 8 dB CNR (carrier to noise ratio) required for noise free reception.

1/ Technical Application Notes can be found at www.sdstv.com

The BDA solution

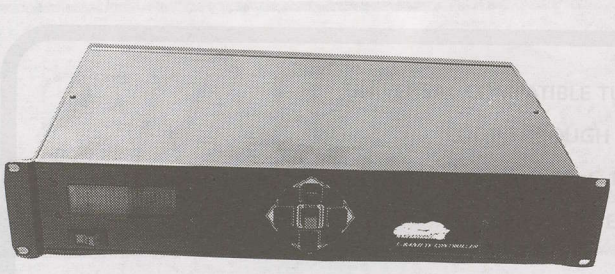
Recognising it is not always possible to situate a dish where the best satellite reception is available, until "the BDA solution" you were limited to selecting a less favourable dish location, or, trying to run hundreds of metres of RG6 / RG11 cable from a distant dish location to the intended receiver location(s).

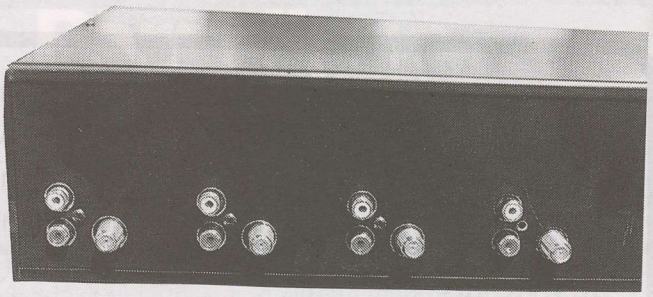
The LNB requires power, regardless of where the dish is located. If you have a way to power the LNB, then you also have power (from the satellite receiver power supply) to operate the BDA.

The receiver located as a powering source for the LNB (+ BDA) can be a "blind" - it may have no actual purpose other than being a powering source.

The +33 dBg output of the BDA is "linked" to one or more receiver sites through a suitably selected link antenna. For distances of under a kilometre that are LOS (line of sight) a 6 dB gain logi at the BDA-33 and another at the opposite end (the TVRO receive location) will usually suffice. There is an immediate plus here - the receive location can be receive locations without the fuss and bother of splitters and running interconnecting cables. Five receivers, each with their own logi receive antenna, all will have completely independent access to whatever signals as are processed by the BDA-33.

If you find there is not enough signal (the distance is too great, you do not have LOS), simply increase the "link budget" dB numbers. Make the BDA-33 end antenna larger (more gain) is a good first step because one antenna change here will benefit all of the receive antenna locations. Or perhaps one of the receive locations is further away than the others and it requires more signal (whereas the other receive locations do not). The logical way to increase this situation's link budget is





FOR more complex multi-channel transmit sites, 20 mW (milliwatt) single channel analogue transmitters have been packaged into rack mounting cases holding from 4 (as shown here) to 6 separate transmitters. They share a common power supply, have individual or combined outputs (right) for connection to one or more separate transmitting antenna systems. Front of rack mounting transmitter package has fluorescent display and operator controls for selecting output channels and other operating parameters of each individual transmitter channel.

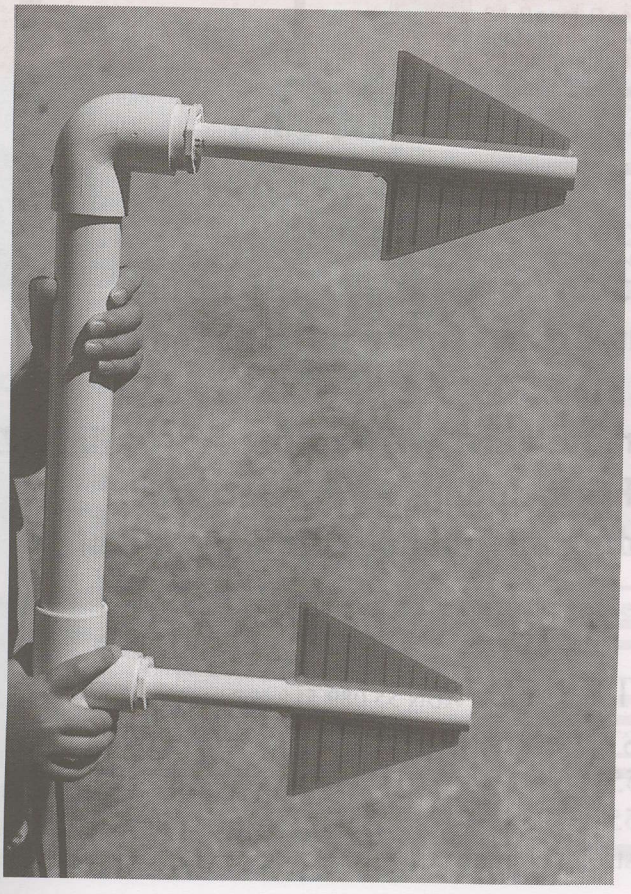
to step up from a passive logi antenna to an active-logi (with a built-in 15 dB gain masthead amplifier).

The BDA-33 will process and amplify whatever signals it receives from the LNB. If you are, for example, connected through the "master dish" to AsiaSat 2 horizontal, the 15 digital signals listed on page 22 of this SatFACTS under As2 will be sent through the BDA-33 to each SDStv equipped receiving location. At each SDStv location, a digital MPEG-2 receiver just as you would select for use with a dish connected As2 horizontal antenna system will in turn receive and produce the full range of As2 signals. Users will have the same access through the BDA-33 link as they would directly from the dish - the only factor that has changed is the "link" is wireless. That could mean you as an installer of SDStv.com equipment have multiple buyers for MPEG-2 receivers rather than the normally one customer you would have with a coaxial cable connected dish system.

Still to come

The SDStv.com hardware options and system solutions are growing rapidly each month. Special filters that will allow you to mix selected signals from one LNB (such as just the European Bouquet from As2 Hz) with a totally different group of signals from another LNB (such as NOW TV/Tech TV bouquet from As3 Hz) will be a future option available. Another interesting package involves use of the screen grid antenna system shown here, equipped with two separate feeds. By placing the screen grid on and above the roof of a building, and facing (pointing) the reflector surface "down" towards the ground (bottom of the building) and positioning twin feeds - different parts of a building receive separate programming selections without interference between programme "beams."

TRANSMIT antenna coverage patterns (region covered by transmitter) can be enhanced or "shaped" with directional logi multi-antenna systems designed to suit the coverage needs.

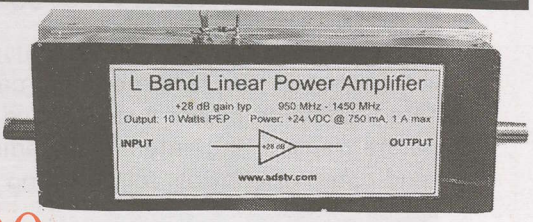


ONE of more than ten "coverage pattern options" available using basic set of twin logi antennas; here, top antenna is pointed towards particular segment of community - development using horizontal polarisation while bottom logi is directed at separate geographic region using vertical polarisation.

STRONG AUST NEWS

October 2001

SDStv.com system hardware is available exclusively in the Pacific from an Australian source through STRONG Aust. See **SDStv.com** advertisement in this issue of SatFACTS (pages 32, 33) and then contact us for the best price and service!



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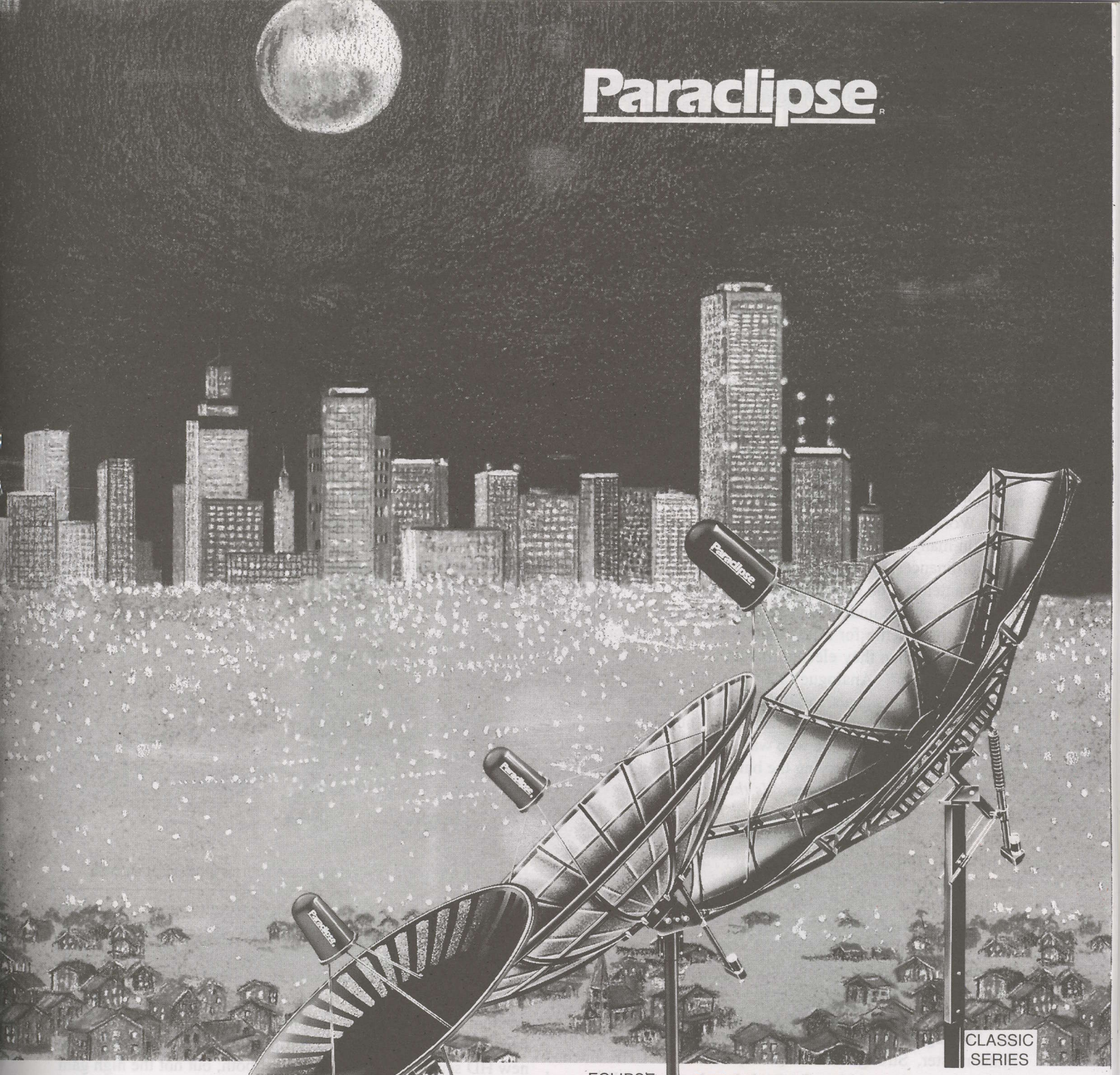

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Does DVB-T Require special rooftop aerials?

Separating hype from fact in the transition to digital terrestrial broadcasting

DVB-T (terrestrial delivery of digital television) is seen as a marketing opportunity by suppliers of home style television aerials. The sale of television aerials has been a declining business for more than a decade, especially in areas where DTH (direct to home) satellite TV and cable have been successful. When television was first introduced, virtually every home acquiring a television set knew it also would have to select some form of outdoor (rooftop) television aerial or antenna. Consumers faced two challenges:

1) Receiving sufficient signal voltage on each of the locally available VHF (and later UHF) channels to produce an acceptable analogue TV screen image, and,

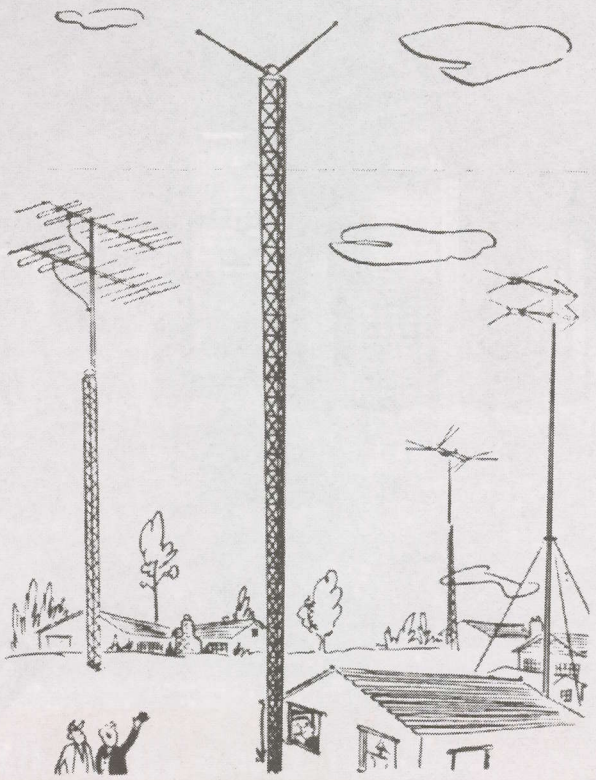
2) Working out a method of installing a suitable antenna which in many situations was banned by tenant building rules, local ordinances, or simply by the logistics of installing a rooftop antenna 4 or 14 stories above your flat or apartment.

It was therefore understandable that up to 35% of all home viewers would settle for a less than perfect picture (on one or all channels) when they elected to "get by" with a set-top pair of "bunny ears". Analogue TV was, after all, extremely forgiving of weak signals, multiple (reflected) images and even interference from a neighbour's fish tank. You did not require a perfect picture to determine who was speaking on the screen or which way the fellow carrying the ball was running.

Paul Hadlow in NSW writes, "*Is there a difference between an analogue TV antenna and a digital TV antenna?* I have had some try to sell me a digital TV antenna by claiming my 8 month old (rooftop) TV aerial is no good for digital TV reception. My logic is that I can receive digital and analogue TV from one satellite dish, why not from one rooftop aerial?"

One of the oldest, most respected and certainly the most successful US firm selling home TV aerials is The Winegard Company of Burlington, Iowa. Winegard pioneered the American equivalent of the band I and III "yagi" design antenna in 1953 (adding bands IV and V in 1955) and you will see "Winegard (design) influence" in virtually any Hills, Matchmaster, Strong, Aimco (et al) VHF and UHF antenna sold in Australia and New Zealand. In other words, Winegard did the original work and most of the rest of the world copied what Winegard pioneered - making minor change for the unique frequency bands in Australia and New Zealand in the process.

By 1960, Winegard was the top selling home TV antenna brand in America - and the world. The firm was so profitable that founder John Winegard, a closet fan of dance clubs and discotheque bars (a decade before they became the rage) built his own private dance discotheque in downtown Burlington so he would have a place to go after hours to hang out. And he booked all of the 60s rock and roll stars to his private club where he lavishly entertained friends and business associates, often paying as much as US$25,000 for a single act to appear in his club for a single night's performance. Such were the dollars to be made in bending aluminium coated in varying iodised colours into bundles small enough to fit into cardboard shipping cartons.



"He set out to prove he'd get reception with his little indoor antenna."

Winegard has just announced the end (after nearly 25 years) to their Chromstar and Prostar lines of TV reception antennas. Replacing the proven and still best selling models - a single new line of "HD" (as in high definition) "digital-ready TV antennas." The Prostar series was designed for strong and medium signal areas while Chromstar was a fringe to deep fringe line of particularly directional, sensitive antennas. The new HD series has some features of both, but not the high gain and pinpoint sharpness of the Chromstar.

What this has to do with the "special requirements" of digital television reception is unclear. What we do know about digital at this stage is as follows:

1) Digital transmissions are as much as 20 dB lower in signal level at the transmitter than analogue which is only partially offset by a need for less digital signal at the receiver.

2) Digital in-channel flatness demands more uniform gain response than analogue across a single TV channel.

3) Digital reflections created by impedance mismatches between antenna and transmission line and the TV receiver are far more complex to cure than analogue reflections (which create ghosts on the screen).

4) Mechanical motion of elements (created by winds or birds landing on and taking off from the elements) create "standing waves" for the digital signal causing pictures to lock (pixelate) - something that never happened with analogue.

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SDStv Technical Application Notes

Clever things you can do with SDStv

check http://www.sdstv.com for more "Tech Tips"

Impedance?

"I rushed home from Melbourne with my 20 mW SDStv.com transmitter safely sandwiched in my hand carry bag. As there were no Discone transmit antennas left to purchase, I have rolled my own. I am concerned that all Discone literature supports it being a 50 ohm antenna yet the 20 mW transmitter clearly has a 75 ohm F connector. I was further confused by the seemingly interchangeable use of 50 and 75 ohm cables at the Melbourne demonstrations. Am I missing something? I want the antenna to properly match the transmitter to get everything I can realise out of the transmitter range." (LM).

Early SDStv equipment (including the 10 watt amplifier) had 50 ohm BNC fittings while all current production has 75 ohm F fittings. In fact, because this is a world-class product likely to be utilised under greatly varying conditions and locations without suitable cable and connector supplies, SDStv.com has elected to make the transmitter equipment output impedance 62.5 ohms (+/- 2 ohms) unbalanced. The reason is this allows the user, no matter where he is or what cables he has available, to use interchangeably either 50 or 75 ohm lines with no significant mismatch in either case. F fittings are standard on all items simply because even in undeveloped regions there is likely to be F fittings and some way to crimp the fittings available.

CCTV/Security cameras?

"I have a customer with a several acre building materials warehousing operation asking me to design a CCTV system so the office can monitor activities. I am facing burying RG6 or RG11 cables as running cable overhead is not practical with fork lifts and heavy equipment that often reach up ten metres or more when operating. Could I not avoid all cables by using SDStv.com 20 mW transmitters?" (Guy G.)

The standard 20 mW transmitter has 24 user selectable transmit channels which with no imagination at all would support the same number of cameras without duplicating any RF channels. All you need is access to 230-260Vac at each camera / 20 mW transmitter location and connecting the camera video out to the transmitter video in - plus the transmitter RF out to the hand-sized 6 dB gain logi antenna. If all of the camera/transmitter locations pointed their antennas at the central office and you elected to use a Discone antenna for receive (rather than the normal transmit), the office would have 360 degree circular coverage of the entire facility. A run-of-the mill 24 channel L-band analogue receiver with "channel scanning software" could be programmed to scan through channels 1-24 or any combination the installation required while the receiver sent video to a monitor or monitors. As a bonus, you could use a CCTV camera with a built-in microphone, pick up audio as well as video at each camera location, and the office could monitor not just the image but the sounds of each camera location through the 20 mW transmitters subcarrier audio transmit capability.

Weatherproof housings?

"The application I have in mind involves mounting the SDStv.com transmission equipment perhaps 50 feet up on a tower, right at the transmit antenna to minimise line losses between the two. I will be using one of the SDStv.com transmit logi antenna arrays, probably a 4 logi set with the antennas stacked together to cover a beamwidth of around 120 degrees. With all of this equipment on a tower and subjected to wind and rain, how do you recommend the equipment be housed as protection against the elements?" (Stanley D.)

Although you don't spell it out, the installation sounds more like a BDA-33 package (with or without a ten watt amplifier) than a 20 mW modulator system. The first concern is that you tap into the dish's LNB(f) line for insertion of the BDA-33 fairly close to the LNB itself before RG6 line losses reduce the "drive power" to the buffer amplifier (if this happens the total output will be reduced by the lowered drive to the BDA). It is difficult to conceive how your original BDA signal source, the LNB, is going to be conveniently available at the top of a 50 foot tower so here is one solution:

1) Install the BDA-33 near the LNB as is standard practice.

2) Run a lower loss line from the BDA-33's normal transmit antenna output connector up your tower to the 4 logi transmit antenna array.

3) Install a ten watt amplifier in a SDStv.com model RA10W weather tight radome housing (a fibreglass housing designed to hold a power source + the 10 watt amplifier) at the antenna array.

4) If you are likely to have snow or other moisture build-up on the 4 logi antenna array, place the entire transmit antenna system inside a model RA4L radome housing (a version of fibreglass housing that keeps the antennas snug and dry and snow or ice build-up free).

This keeps the transmission line from the 10 watt amplifier to the 4 logi phased antenna array short (and virtually loss free), protects the equipment and when you drive the 10 watt amplifier with a BDA-33, even through 50+ feet of RG6 or RG11, you will still have plenty of reserve signal to achieve full 10 watt output from the amplifier.

How is power shared?

"I can easily understand that if I have a 20 mW analogue transmitter and drive a 10 watt amplifier that all 10 watts ends up within the transmit channel selected by the 20 mW modulator. And if I have four analogue channels combined to be sent together through a 10 watt amplifier the total power per analogue channel is divided by 4; 2.5 watts per TV channel. Now, with the BDA-33 rated at 20 mW output as well, and driven by say all six of the digital (Aurora service) Optus B3 vertical transponders, how is the 20 mW capacity of the BDA-33 divided amongst the transponders? (Curious in NT)

Assuming all 6 transponders are passed through the LNB at approximately the same power level, you will end up with 20 mW divided by 6 or 3.33 milliwatts per transponder at the output of the BDA-33. If this is retransmitted through a SDStv.com 6 dB gain logi antenna, the radiated power per transponder will be 6 dB greater than 3.33 mW or approximately 13.32 mW per transponder. If you use a physically larger transmit antenna, such as a screen grid reflector fed with the logi antenna, producing 15 dB of forward direction gain, the radiated power per Aurora transponder would become 15 dB more than 3.33 mW - nearly 105 mW per transponder.

Power vs. Money

"During August I was in the USA and located a DX Antenna 1 watt output 2.4 GHz amplifier built in Japan. The price was US$1,000 and the unit was barely 1 cm square. I was told this could not be used legally in Australia and checking here after coming back I verified that statement. Further checking revealed it can be used legally almost no place on earth - so why do they have such a product in their line?" (E.R.G.)

For the same reason SDStv.com has such a broad line of products in the L-band range. There **are** locations (countries, regions within countries) where this equipment can be used for specified purposes and often without any formal approval. DX Antenna is a world-class supplier and SDStv.com has similar aspirations. Ferrari, Porsche and Corvette make 300+ km top speed cars fully aware that very few roads exist where these speeds can be driven - safely or legally.

Note to readers: SDStv.com Tech Tips are a regular feature of the sdstv.com web site. Address your questions for answer here to skyking@clear.net.nz marking the subject "SDS query".

SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 October 2001

Bird	Service	RF/IF &Polarity	# Program Channels	FEC	Msym	Receivers and Errata
Ap2/76.5E	**DD13**	3796/1354Vt	1	3/4	2(.500)	Test of DD13 Metro srvice
Thcm3/78.5	SkyChAust	3695/1455V	up to 3	3/4	5(.000)	Finally settled here from As2
	MRTV-Mynr	3676/1474H	1	2/3	6(.000)	erratic service
	MidEst Mux	3640/1510H	up to 12	3/4	28(.066)	Now essentially all CA
	Mahar/DD1	3600/1550H	up to 8	3/4	26(.661)	USA religion chs, CMM music FTA
	Nepal TV+	3554/1596V	3+ in mux	3/4	13(.333)	FTA + CA mux
	3ABN +	3551/1600H	4+ TV, radio	3/4	13(.330)	3 Angels USA, Ch of Hope, + 9 radio
	Alpha TV	3430/1720H	1	2/3	3(.255)	Greece SCPC-OK in Australia
	PTV1	3424/1730V	1	3/4	3(.333)	FTA, also 3420 PTV3
	TV Maldives	3412/1738V	1	1/2	6(.312)	FTA (reaches SE Australia)
	Thai Global+	3425/1725V	up to 7?	2/3	27(.500)	FTA
InSat 2E/83	**ETV mux**	4005/1145V	6+ TV	3/4	27(.000)	increasingly active mux; wide beam
	DD2	3910/1240V	1	3/4	5(.000)	SCPC, ; OK E. Aust. wide beam
	DD National	3830/1320V	1	3/4	5(.000)	SCPC; OK E. Aust. wide beam
	Kairali TV	3699/1451V	1	3/4	3(.184)	SCPC, OK E. Aust wide beam
	AsiaNet	3683/1467V	1	3/4	4(.340)	SCPC, OK E. Aust. wide beam
	Jaya TV	3615/1535V	1	3/4	3(.255)	SCPC; OK E. Aust. wide beam
As2/100.5E	**Euro Bouqt**	4000/1150H	6TV, 21r	3/4	28(.125)	FTA (TV5 teletext); MCM gone
	5-Star Media	3951/1199H	3TV	3/4	13(.185)	Macau MUX
	Reuters Sing	3907/1243H	1	3/4	5(.632)	occasional feeds, **some FTA** MPEG2
	WorldNet	3880/1270H	4+/20+radio	1/2	20(.400)	New here Oct 11 - replaces analogue
	Hubei/HBTV	3854/1296H	1	3/4	4(.418)	FTA SCPC, teletext
	Hunan/SRT	3847/1303H	1	3/4	4(.418)	FTA SCPC, teletext
	Guan./GDTV	3840/1310H	1	3/4	4(.418)	FTA SCPC, radio APID 81
	In. Mongolia	3828/1322H	2	3/4	8(.397)	FTA: #1 Mongolian, #2 Mandarin
	Reuters/Sing.	3775/1375H	1	3/4	5(.631)	**FTA** & CA
	WorldNt/US	3764/1386H	1 + 20 radio	3/4	6(.100)	FTA; to shut down 30Nov. (see 3880H)
	Liaonin/Svc2	3734/1416H	1	3/4	4(.418)	FTA SCPC, radio APID 256
	Jiangx/JXTV	3727/1423H	1	3/4	4(.418)	FTA SCPC, teletext, radio APID 81
	Fujian/SETV	3720/1430H	1	3/4	4(.418)	FTA SCPC, + radio APID 80
	Hubei TV	3713/1437H	1	3/4	4(.418)	FTA SCPC, radio APID 80
	Henan/Main	3706/1444H	1	3/4	4(.418)	FTA SCPC, + radio
	Egypt/Nilesat	3640/1510H	7+, radio	3/4	27(.850)	Thru TARBS Aust, subs now poss?
As2/100.5E	**Feeds**	4086/1064V	1	3/4	5(.632)	FTA SCPC feeds
	TVSN	4033/1117V	1	3/4	4(.298)	Occ. **FTA**, not same as Aust. version
	Jilin Sat TV	3875/1275V	1	3/4	4(.418)	FTA SCPC, + radio
	HeiLongJian	3834/1316V	1	3/4	4(.418)	FTA SCPC
	JSTV	3827/1323V	1	3/4	4(.418)	FTA SCPC, + radio
	Anhui TV	3820/1330V	1	3/4	4(.418)	FTA SCPC + radio
	ShaanxiQQQ	3813/1337V	1	3/4	4(.418)	FTA SCPC, radio APID 81
	Guan/GXTV	3806/1344V	1	3/4	4(.418)	FTA SCPC, radio APID 257
	Fashion TV	3795/1355V	1	3/4	2(.533)	FTA SCPC, reload VPID 308, APID 256
	MSTV	3791/1359V	1	3/4	4(.340)	FTA SCPC
	Myawady	3766/1384V	1	7/8	5(.080)	FTA SCPC - difficult to load
	Saudi TV1	3660/1490V	5+/tests	3/4	27(.500)	FTA MCPC, Dubai Sports Europe
As3S/105.5	Zee bouquet	3700/1450V	9TV	3/4	27(.500)	Mediaguard CA, **ch 8 FTA sometimes**
	Arirang TV	3755/1395V	1	7/8	4(.418)	FTA SCPC; reported audio problems
	Now TV +	3760/1390H	4	7/8	26(.000)	includes TECH TV from USA**FTA**
	Star TV	3780/1370V	17(+)TV	3/4	28(.100)	NDS CA (Pace DVS211, Zenith)
	Star TV	3860/1290V	14(+)TV	3/4	27(500)	NDS CA (Pace DVS211, Zenith)
	Star TV	3880/1270H	12(+)TV	7/8	26(.850)	NDS CA (Pace DV211, Zenith) + **1 FTA**
	Indus Music	3900/1250V	5TV	7/8	27(.895)	PAL, NTSC, 1 ch CA
	Star TV	3940/1210V	12(+)TV	3/4	26(.850)	Recenty started -NDS CA as above
	CNNI	3960/1190H	6(+)TV	3/4	26(.000)	PowVu CA; CNN + Cartoons, occ **FTA**
	StarTV	3980/1170V	2+TV	3/4	28(.100)	"777" Fox News USA **FTA**
	Star TV	4000/1150H	7(+)TV	7/8	26(.850)	NDS CA + **info card FTA**
	Sun TV	4095/1055H	1	3/4	5(.554)	"History Channel" testing SCPC
	CCTV bqt	4129/1021H	4(+) TV	3/4	13(.240)	moved from 4115 July 1
	Zee Bqt #2	4135/1015V	4(+) TV	2/3	15(.000)	some FTA + CA
Cak1/107.5	Indovision (S-band)	2.536, 2.566, 2.596, 2.626	33(+) TV	7/8	20(.000)	NDS CA using RCA/Thomson, Pace IRDs
C2M/113E	**TPI**	4185/965V	1	3/4	6(.700)	FTA SCPA; NT/NC only
	Satelindo Bqt	4089/1061H	2+ 1 radio	3/4	14(.062)	ChNewAsV33/A34,
	Indosiar	4074/1076V	1	3/4	6(.500)	FTA SCPC; NT/NC only
	Anteve	4055/1095V	1	3/4	6(.510)	FTA SCPC; NT/NConly
	SCTV	4048/1102V	1	3/4	6(.618)	FTA SCPC; NT/NC only
	MMBM#1	4000/1150H	11TV, radio	3/4	26(.666)	CA, Aust subs avail-sometimes FTA

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym	Receivers and Errata
(C2M)	**ABC radio**	3976/1174H	2+ radio only	3/4	2(.061)	SCPC radio only - purpose unknown
	Indo. MUX	3880/1270H	3+ TV	3/4	28(.125)	TVRI, others FTA
	MMBM#2	3760/1390H	11TV,radio	3/4	26(.666)	CA, Aust subs avail-10 **radio** typ**FTA**
	Brunei/Sing	3733/1417H	1TV	3/4	6(.000)	FTA; share time, Brunei-23hrs,Sing1h
	RCTI	3475/1675H	1	3/4	8(.000)	FTA SCPC, Australia OK
JcSt3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(.000)	PowVu, some **FTA** (ch # 1,3)
	Asian bqt	3960/1190V	up to 8	7/8	30(.000)	CA & **FTA** NTSC: Japan, Taiwan
MeaSat 2	Astro Mux	11.478H (+)	up to 10TV	7/8	30(.000)	+11.664; 18 pay-TV svcs, CA
Op 3/156	**Mediasat**	12.336V/T2	7TV, radio +	2/3	30(.000)	FTA, CA
	Aurora	12.407V/T3		2/3	30(.000)	cvrs Aust, NZ 90 cm; CA (*)
	Aurora	12.532V/T5	Inc Zee TV	2/3	30(.000)	cvrs Aust, NZ 90 cm; CA (*)
	Aurora	12.595V/T6		3/4	30(.000)	Aust only; * - smart card p. 26
	Aurora	12.657V/T7	6CA testing	2/3	30(.000)	cvrs Aust, NZ 90cm; CA(*)
	Aurora	12.720V/T8		3/4	30(.000)	Aust only;* - smart card p. 26
	Austar/Optus	12.376H/T10		3/4	29(.473)	Austar I-TV and Optus tests
	Austar/Foxtl	12.438H/T11		3/4	29(.473)	CA, subscription available Australia
	Austar/Foxtl	12.501H/T12		3/4	29(.473)	CA, subscription available Australia
	Austar/Foxtl	12.564H/T13		3/4	29(.473)	CA, subscription available Australia
	Austar/Foxtl	12.626H/T14		3/4	29(.473)	CA, subscription available Australia
	Austar/Foxtl	12.688H/T15	(some FTA ra)	3/4	29(.473)	CA, subscription available Australia
Op 1/160	**ABC NT fd**	12.260V	1TV, 3 radio	3/4	5(.026)	Power level down Aug.; V832, A833
	ABC feeds	12.317H	1	3/4	6(.980)	also 12.326, 12.335; ex PAS8 Ku
	Central 7	12.354H	1TV	3/4	3(.688)	VPID1280, APID 1281
	Imparja mx	12.360H	1	3/4	5(.424)	VPID 1024, APID 1025
	Mediasat#2	12.406V	up to 6 TV	2/3	30(.000)	also try Sr 28.000; FTA & CA
	Mediasat#3	12.424H	3+ TV	2/3	19(.800)	net feeds, Australia only, FTA & CA
	TVNZ DTH	12.456V	1+ TV	3/4	22(.500)	Tests; also 12.706, 12.733; CA, Irdeto
	TV One NZ	12.483V	1TV	3/4	22(.500)	FTA tests, non-scheduled
	Nine Net	12.512H	1 TV typ.	3/4	5(.632)	testing digital feeds
	Sky NZ	12.519/546V	7TV/7TV	3/4	22(.500)	NDS CA, subscription available NZ
	Sky NZ	12.581/608V	6TV/6TV	3/4	22(.500)	NDS CA, subscription available NZ
	Sky NZ	12.644/671V	9TV	3/4	22(.500)	NDS CA, subscription available NZ
	ABC HDTV	12.670H	4TV	7/8	14(.300)	also 12.686 12.706H-same parameters
PS8/166	TARBS3	12.326H	13TV + radio	3/4	28(.067)	TPG/Eurodec CA, occ. FTA
	TARBS	12.526H	13TV + radio	3/4	28(.067)	TPG /Eurodec CA, occ. FTA
	TARBS2	12.606H	13TV + radio	3/4	28(.067)	Tests, inc. ESPN, see TARBS above
	JEDI/TVB	12.686H	11+ TV	3/4	28(.126)	Irdeto CA, **some FTA** tests
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(.125)	PowVu CA
	NHK Joho	4065/1085H	7TV, 1 radio	3/4	26(.470)	PowVu CA & **FTA**; subscription avail
	Japan Bqt	4050/1100H	2	3/4	12(.000)	PowVu CA; NTV Int, Fuji TV
	ESPN USA	4020/1130H	7+TV, data	7/8	26(.470)	PowVu CA; ch 11 DCP-CCP bootload
	Discovery	3980/1170H	8 typ.	3/4	27(.690)	PowVu/CA (some audio **FTA**)
	CalBqt/Pas8	3940/1210H	up to 8TV	7/8	27(.690)	PowVu CA & **FTA (EWTN/Fox occ)**
	CNBC HK	3900/1250H	up to 7TV	3/4	27(.500)	FTA at this time
	Filipino Bqt	3880/1270V	up to 9 TV	3/4	28(.700)	Some **FTA**; also 4040V, 27.686,7/8
	Tzu-Chi TV	38501300H	up to 4	3/4	13(.240))	inc. 'Power TV' - Chinese
	CCTV Mux	3839/1311H	up to 4	3/4	13(.240)	PowVu FTA, replaces PAS-2 svc
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(.632)	was As2; PowVu CA
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(.000)	PowVu, CNN now CA
	MTV	3740/1410H	8	2/3	27(.500)	1-7 CA; #8 **FTA occ. feeds**
PS2/169	Pv Bouquet	12.281V	2+ TV, radio	2/3	27(.500)	PowVu CA, WIN, ABC NT
	WA PowVu	12.637(.5)V	4TV, 8 radio	1/2	18(.500)	PowVu CA, WA only - D9234
	HK PowVu	4148/1002V	up to 8	2/3	24(.430)	PowVu CA; some **FTA,** occ feeds
	TVB Mux	4058/1092V	up to 5	3/4	13(.382)	CA feeds to pay-TV
	Fox Bouquet	3992/1158V	8TV/data	7/8	26(.470)	Pv, CA/FTA (**FTA ch 3 only**)
	Feeds	3966/1184V	1	2/3	6(.620)	PowVu (FTA) occ feeds
	Feeds	3957/1193V	1	2/3	6(.620)	PowVu (FTA) occ. feeds
	Aust-feeds	3942/1208V	1	2/3	6(.620)	Mediasat outward bound feeds
	Feeds	3929/1221V	1	3/4	10(.850)	PowVu (FTA) occ sport feeds
	Feeds	3912/1238V	1	2/3	6(.620)	PowVu(FTA) occ. feeds
	Feeds	3898/1252V	1	2/3	12(.000)	PowVu (FTA) occ. feeds
	Middle East	3836/1314V	4 typ	3/4	13(.331)	LBC CA Irdeto; JSC, ART to follow
	Feeds	3803/1347V	1	2/3	10(.322)	PowVu (FTA) occ sport feeds
	YTN Korea	3769/1381V	2+ TV	3/4	11(.570)	Svcs 1 and 2, CA
	BBC +	3743/1407V	3	3/4	21(.800)	**BBC FTA**, others CA usually

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym	Receivers and Errata
(PAS-2/169)	**Feeds**	4040/1010H	1	3/4	10(.850)	PowVu occ FTA feeds
	KBS/Korea	4026/1124H	1	3/4	5(.062)	occ. **FTA**, usually CA
	7thDayAdv.	3872/1278H	1	3/4	6(.620)	Sat, Sun 0900+UTC; also sport 3873
	Feeds	3868/1182H	1	2/3	6(.620)	FTA (occ sport); also try 3863,Sr6.100
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(.620)/7(.498	FTA-typ NTSC-occ sport, live Shuttle
	Cal PowVu	3901/1249H	up to 8	3/4	30(.800)	PowVu CA + **FTA**
	occ feeds	3776/1374H	1 typ	3/4	5(.560)	occ feeds, typ FTA; also Sr 5.600
	Korean Bqt	3762/1388H	up to 3	3/4	11(.570))	Korean MUX, reloasd June 01
	Satcom 1-6	3743/1407H	up to 5	7/8	19(.465)	poss. USA pgming to Carnival Line
I702/176E	AFRTS	4177/973LIIC	8TV, 12+radio	3/4	26(.694)	PowVu CA
	RFO Poly	4027/1123L	1TV	3/4	4(566)	SE spot beam
I701/180E	TNTV	11.060V	9	3/4	30(.000)	eastern spotbeam CA; 8,000 subs
	Canal+Sat	11.610H	16TV, 1 radio	3/4	30(.000)	Mediaguard CA, up to 3 ch **FTA**
	TVNZ	4195/955RHC	1	3/4	5(.632)	DMV/NTL early version, occ feds, typ ca
	TVNZ/BBC	4186/964RHC	1	3/4	5(.632)	DMV/NTL early version, occ feds, typ ca
	TVNZ	4178/972RHC	1	3/4	5(.632)	DMV/NTL early version, occ feds, typ ca
	TVNZ/Aptn	4170/980RHC	1	3/4	5(.632)	DMV/NTL early version, occ feds, typ ca
	TVNZ/feeds	4161/989RHC	1	3/4	5(.632)	DMV/NTL early version, occ feds, typ ca
	RFO-Canal+	4086/1064L	4TV, radio	5/6	13(.347)	east hemi 20.5 dBw thru 2003+
	TVNZ/feeds	4052/1098RHC	1	3/4	5(.632)	DMV/NTL early version,occ feeds, typ ca
	TVNZ feeds	4044/1106R	1	3/4	5(.632)	SCPC, mixed CA and **FTA** feeds
	NZ Prime TV	4024/1126L	1	2/3	6(.876)	PowVu CA; Auckland net feeds
	NBC to 7 Oz	3960/1190R	1	7/8	6(447)	CA, Leitch encoded
	Ioarana	3772/1378L	1	3/4	4(.566)	FTA SCPC; East Hemi Beam-Tahiti
	TVNZ	3846/1304R	1	3/4	5(.632)	SCPC, mixed CA & **FTA**, feeds
	10 Australia	37691381R	4	7/8	20(.000)	PowVu CA & **FTA; #3 TBN**
	USA feeds	3749/1401R	4?	?	26(400)	16-QAM (not MPEG-2 compatible)

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

ASTRX D 1000CI. SCPC, MCPC, two CAM slots, auto search routine. Reviews SF#78 & #79. LTG Mason 61-3-9457 1222.
AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. Av-COMM Pty Ltd, 61-2-9939-4377.
Benjamin DB6600-CI. FTA, Foxtel/Austar w/CAM+card. Autosat Pty Ltd 61-2-9642-0266 (review SF#72)
Humax F1-CI. Primarily sold for TRT(Australia), does (limited) PowerVu (not Optus Aurora approved).
Humax ICRI 5400. Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available, review SF#76.
Hyundai-TV/COM. HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good. SATECH (V2.26)
Hyundai HSS700. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.
Hyundai HSS800CI. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.
MediaStar D7. FTA, preloaded w/ known services, exc. software (review SF July 1998). MediaStar Comm. Int. 61-2-9618-5777
MediaStar D7.5. New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777
MultiChoice (UEC) 660. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738
Nokia "d-box" (V1.7X). European, FTA, may only be German language, capable of Dr. Overflow software. Tricky to use.
Nokia 9200. When equipped with proper CAM, does Aurora, pay-TV services provided software has been "modified" with Dr Overflow or similar program was available from (www.BAKKERELECTRONICS.COM), now only from established users.
Nokia 9500/9600. Numerous versions for different world parts; not distributed in Pacific but assistance from Av-Comm Pty Ltd.
Pace DVS211. NDS CA (no FTA) for Star Asia, previously used for Indovision. (Solution 42, 61-2-9820-5962)
Pace DGT400. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818)
Pace DVR500. Original DGT400 modified for NBC (PAS-2) affiliate use, with CAM equivalent to DGT400 but more reliable.
Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version.
Panasat 520/630/635. MCPC FTA, Irdeto capable, forerunner UEC 642, 660. Out of production, spares fax ++27-31-593-370.
Panasonic TU-DS10. FTA + Irdeto CA; one of 2 IRDs approved by Optus for Aurora, but never available in Australia.
Phoenix 111, 222. PowVu capable, NTSC, graphics, ease of use. (111 review SF#57). SATECH(below)- 222 out of production
Phoenix 333. FTA SCPC, MCPC, analogue + dish mover. Detailed SF review Nov. 1998. SATECH 61-3-9553-3399.
Pioneer TS4. Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)
PowerVu (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, GWN+ PAS-2 Ku, CMT etc). Scientific Atlanta 61-2-9452-3388.
Prosat 2102S. FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.
SatCruiser DSR-101. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-3749)
SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above).
Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Aust 61-3-9553-3399.
Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, Aurora, exc. vendor support. Strong Aust 61-3-9553-3399.
Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2, wide screen (review SF#84); Strong Aust (above)
UEC642. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faultyP/S. Norsat 61-8-9451-8300.
UEC660. Upgraded UEC642, used by Sky Racing Aust., Foxtel-limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.
UEC700/720. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers.
Xanadu. DVB compliant special-priced receiver for members of SPACE Pacific (Av-comm Pty Ltd, tel +61-2-9939-4377)

Accessories:

Aurora smart cards. New v1.6 now available, 1.2 no longer available for RABS. Price now A$105, Sciteq 61-8-9306-3738.
PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 7/8; pgm ch 11 and follow instructions (do not leave early!)

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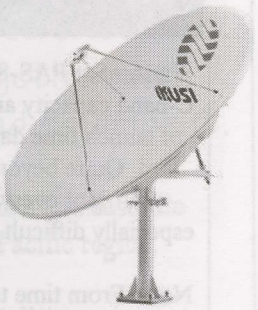

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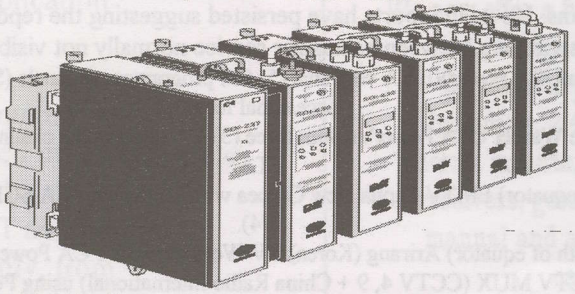

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BANDSCAN: PanAmSat PAS-8 Analysis

PanAmSat PAS-8 had a difficult launch and for more than a year reports persisted concerning damage during launch to some C-band capacity and some Ku band antenna pointing accuracy. Whatever the truth, PanAmSat has not revealed the true extent of launch time damage and the satellite has become a moderately successful C-band satellite and a highly successful Ku band bird. Quite beyond expectations, PAS-8 Ku band capacity into Australia has been woefully short of demand for more than a year. Not every service that operated here has been successful (Boomerang being a recent TV failure). C-band beams are especially difficult for any area east of Australia and south of New Caledonia while Ku band beams intended for Australia have tended to be just that with no "spillage" outside of the designed-for target areas.

Note: From time to time Ku band reports of reception in NZ and NE Australia have surfaced covering reception from some of the SE Asia Ku band service beams. No such reports have persisted suggesting the reporters happened to be at the right place when PanAmSat was switching between beams for service normally not visible in either NZ or Australia.

3740Hz (east Asia beam) Viacom USA PowerVu CA with five (5) CA programme channels (Sr 27.500, FEC 2/3); FTA test card and occasional feeds.

3780Hz (east Asia beam) CNN/Time Warner USA PowerVu with three (3) CA programme channels (Sr 25.000, FEC 3/4) and 4th occ. feed FTA.

3808Vt (limited coverage south of equator) EMTV Papua New Guinea with 1 PowerVu CA SCPC TV + 2 radio channels (Sr 5.632, FEC 3/4).

3815Vt (limited coverage south of equator) Arirang (Korea) TV World 2 with 1 CA PowerVu SCPC TV (Sr 4.400, FEC 3/4).

3829Hz (east Asia beam) CCTV MUX (CCTV 4, 9 + China Radio International) using PowerVu **FTA** (Sr13.240, FEC 3/4).

3850Hz (east Asia beam) Taiwan MUX (Haihua Satellite TV, Tzi Chi TV, Power TV) using MPEG-2 **FTA** (Sr 13.240, FEC 3/4).

3880Vt (significantly weaker than Hz beam) Filipino MUX using PowerVu CA (8 CA channels, 1 occ. FTA) (Sr 28.694, FEC 3/4).

3900Hz (east Asia beam) CNBC MUX using MPEG-2 **FTA** (up to 7 video programme channels) (Sr 27.500, FEC 3/4).

3940Hz (east Asia beam) California Bouquet PowerVu FTA (**EWTN Asia**, feeds) and CA (TNT, The Golf Channel, Music Country) (Sr 27.690, FEC 7/8).

3980Hz (east Asia beam) Discovery Network Asia using PowerVu CA (11 programme channels) (Sr 27.690, FEC 7/8).

4020Hz (east Asia beam) ESPN for Asia using PowerVu CA (5 programme channels, some data, bootloader) (Sr26.466, FEC 7/8) - note: Audio is FTA.

4050Vt (significantly weaker than Hz beam) Japanese mini-MUX (NTV International, Fiji TV) PowerVu CA (Sr 12.000, FEC 3/4).

4060Hz (east Asia beam) NHK Joho Network PowerVu CA (one TV, one radio) and **FTA** (3 channels) (Sr 26.470, FEC 3/4).

4140Hz (east Asia beam) The Disney Channel PowerVu CA (Australia, Malaysia, Taiwan) (Sr 28.125, FEC 5/6).

...

12.318Vt (SE Asia beam) FTV Entertainment MPEG-2 **FTA** (2 channels) (Sr 12.500, FEC 2/3)

12.326Hz (Australia beam) TARBS MDS CA (Sr 28.067, FEC 3/4) (CA note: some piracy activity, not widespread).

12.394Hz (NE Asia beam) Orient Satellite Broadcasting/OSB MPEG-2 **FTA** (4 TV services + 2 radio) (Sr 8.382, FEC 3/4).

12.400Vt (SE Asia beam) Digicipher 1 CA (6 programme channels) (Sr 19.600, FEC 3/4).

12.422Hz (NE Asia beam) HMV TV (1 TV, 2 radio) MPEG-2 **FTA** (Sr3.677, FEC 3/4).

12.526Hz (Australia beam) TARBS MDS CA (Sr 28.067, FEC 3/4) (CA note: some piracy activity, not widespread)

12.557Hz (Australia beam) Internet data (Sr 13.333, FEC 3/4).

12.606Hz (Australia beam) TARBS MDS CA (Sr 28.067, FEC 3/4) (CA note: some piracy activity, not widespread)

12.679Vt (SE Asia beam) FTV Entertainment MPEG-2 **FTA** (2 channels) (Sr 12.500, FEC 2/3).

12.686Hz (Australia beam) Jadeworld Irdeto MPEG-2 CA (9 programme channels; 1 occ. FTA) (Sr 28.124, FEC 3/4) (CA note: Irdeto piracy cards widely reported)

TUNING IN THE INDUSTRY'S TV PROGRAMME

SPACE Pacific, the Asia-Pacific industry membership trade association, has produced (and continues to produce) a series of one hour television programmes. These "SPACE Pacific Report" shows, hosted by Bob Cooper, cover a range of topics of interest to installers and enthusiasts. Show numbers and content are as follows: **#9901**- Spectrum Analyser techniques, **#9902**- Feeds and LNBs, **#9903**- Dish antenna designs and problems, **#9904**- The dish marketplace, and, "tiny parts," **#9905**- Dr Overflow (Nokia) software (Robin Colquhoun), **#9906**- How the uplink works (tour of RCA's Vernon Valley site), **#9907**- Uplink Two, including uplink transmitters, **#9908**- Digital Basics (Mark Long), **#9909**- Real World Installs (Mark Long), **#9910** - Installing a polar mount dish and signal level test equipment, **#9911** - "SPIN" (the hidden side of satellite). **#0012** - First Report from SPRSCS 2000 (recorded in Melbourne June 28, 29 - "Ideal IRDs," more), **#0013** - Second Report from SPRSCS 2000 (recorded in Melbourne June 29, 30 -"ABA Blackspot session"), **#0014** - Naughty Nokia from SPRSCS 2000; **#0101** - Preview of new technology including SDS from SPRSCS 2001 (Septemer 27, 2001 Melbourne). "Report" is broadcast by Mediasat on Optus B3, 12.336Vt, ad-hoc channel 4(*) (Sr 30.000, FEC 2/3). The coming-weeks schedule: **Sunday October 21** - 0013 at 0200-0300 UTC (1500 NZST, 1200 AEST, 0900 Western Australia; repeats 0700 UTC/8PM NZST, 5PM Sydney, 2PM Perth). **Sunday Octber 28** - Show 0014, same times as October 21 but Australia DST adjustments required; **Sunday November 4** - Show 9901, same times as October 28; **Sunday November 11** - Show 9902, same times as October 28; **Sunday November 18** - Show 9903, same times as October 28; **Sunday November 25** - Show 9904, same times as October 28; **Sunday December 2** - Show 9905, same time as October 28 (Note: Daylight savings time adjustmenyts - we stay with original UTC times). (* - Mediasat may pre-empt showings, check other bouquet channels - such as 3 - if not on 4.) In the event of schedule changes (*), SPACE Pacific attempts to pre-announce which show(s) will appear. Peter Escher's (June 2001) visit to Sri Lanka and Sir Arthur C. Clarke scheduled for play on Mediasat is currently in "editing production." Sponsorship of SPACE Pacific Report. In general answer to queries - Av-Comm, Satech and Sciteq have contributed corporate funding to make possible the production of the first set of nine SPACE Pacific Report programmes. IKUSI ANZ contributed funds for completion of 9910. If interested in sponsoring future shows, contact Bob Cooper at skyking@clear.net.nz (64-9-406-0651) * - Note: Mediasat Sunday feed loads have increased and the first showing (0200UTC) may be "bumped" to accommodate other clients. The 0700UTC feed typically is not bumped and would be the better choice if taping for later review.

WITH THE OBSERVERS

AT PRESS DEADLINE

Bonus time: Dubai Sports Channel Europe (As2, 3660Vt - Sr 27.500, 3/4 - VPID 2435/APID 2436) has been carrying significant soccer (futbol) and other main line sports of late - FTA.

ATVI getting closer: Watch out for serious testing of rebirth of Australia's international service - possibly PAS8- next 30 days.

ApStar 2/76.5E: "DD13 Metro is FTA 3796Vt, Sr 2.500, 3/4" (**D. Leach**, NSW).

AsiaSat 2/ 100.5E: With shutdown of VOA/USIA WorldNet 1/4th transponder service on 3764Hz 30 November, there will likely be new SCPCs moving into this region (see report p. 29). "Macau Five Star Pop Channel has new PIDs (450/451) on 3951Hz - in case you have lost them (reload)" (**Anthony K.**, PNG - Ed's note: Or they could be gone totally by now!).

AsiaSat 3/105.5E: Indus Vision PAL analogue is apparently another victim of Indian cable wars - gone from 4060Vt. HaiHua Satellite TV is new on 3760Hz, MPEG-2 FTA, Sr26.000, 7/8. "Fox News Channel USA FTA on 3980Vt, Sr 28.100, 3/4 began service 17 September" (**K. Kongo**, Taiwan)

"Bloomberg TV Asia has popped up on 3760Hz MUX [NOW TV, Tech TV]" (**Carlos**, Sydney).

ChinaStar 1/87.5E: "Feeds 3880Hz PAL include ground shot coverage of coalition bombing of Afghanistan through CCTV link" (D. Leach. NSW).

Insat2E/83E: "Jaya TV has launched on 3615Vt, Sr 3.255, 3/4" (Carlos, Sydney).

Intelsat 701/ 180E: "French package 11.610Hz has added another channel - 'M6' with VPID 179, APID 156, SID 7020, PMT 1300; CA unfortunately" (**B. Richards**, Aust).

Intelsat 902/ 62E: New satellite here is primarily Ku band into Europe and Middle East.

Optus B3/160E: Germany's Deutsche Welle and France's TV5 Asie are gone from Mediasat's 12.336 - apparently the end of the free trial testing. "Changes in Optus Aurora trabnsponder assignments: Alpha TV Punjabi, Asianet Bharathi, SET Asia, Zee's TV Australia, Cinema Australia, Music have shifted from 12.658Vt to 12.532Vt" . Many apparently minor change in Austar/Foxtel/Optus packaging of pay-TV transponders. National Geographic, C7S for example have been eliminated from lower channel-loading numbers, perhaps to make room for 1 November scheduled start of ABC and ABC kids for Austar. Also Austar promotion for itself is gone from 12.313Hz (**IF**, Queensland).

Optus B1/156E: "TVNZ TV One is running significant parts of daily schedule 12.483Vt, FTA" (**L. Mathews**, NZ). "12.393Vt, Sr 19.800, 3/4 has had extensive Bathurst feeds including 4:4:2 (308/256) for Ten Network" (Bill Richards, Aust).

Palapa C2M/113E: Metro TV has appeared 4089Hz, Sr 14.062, 3/4 but this could be only a test while Metro Business has been testing on 3880Hz. "Possibly was a short test - try

FOX News (USA) is FTA "for the balance of hostilities" on AsiaSat 3S, courtesy of Rupert Murdoch. Go to 3980Vt, Sr 28.100, FEC 3/4 and you will typically load a pair of channels - "777" is the channel name for Fox News USA which has almost constant coverage of the developments surrounding "World War III." Why FTA? Because CNN has eliminated all FTA service for Asia and the Pacific and Fox/Star/Murdoch sees an opportunity here to shift user loyalty to their own service especially during this period of high news programme viewing interest.

3728Vt, Sr 4.800 for Filipino NBN channel using (of all things) GI's Digicipher 1 format - FTA at that" (**G. Sanders**, Brisbane).

PanAmSat PAS8/166.5E: "Filipino Lakbay TV SCPC 3812Vt has shut down, only on 3880Vt MUX now" (G. Sanders, Brisbane).

PanAmSat PAS2/169E: LBC is now Irdeto encrypted on 3836Vt, ART and JSC (Al Jazerra Satellite Channel) will follow. JSC replaced Greek Antenne Pacific 28 September in a related ramp-up to Irdeto encryption (see report p. 30 here). "Reuters Singapore was seen testing on 3904Vt, Sr 5.632, 3/4 and service (news feeds) was basically parallel to long term 3907Hz on AsiaSat 2" (**D. Pemberton,** Aust. Ed's note - may have been test reference linking Pakistan PTV into USA for coverage of events there - see report p. 30 here). "TVB's mux on 4044Vt has restarted with Sr 6.620, 3/4 but permanence is

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 November 15th issue: November 4 by mail or 5PM NZST November 6th if by fax to 64-9-406-1083 or Email skyking@clear.net.nz.

CRAIG Sutton, popular (www).apsattv.com web site operator, recently completed installation of a 3.7m Orbitron C-band dish at his Nelson (NZ) home. The dish is held in place with a square metre of concrete, and believe it or not - the entire installation can be picked up and hauled away leaving no trace it was ever there

WorldNet As2 Switch over to MPEG-2 - detail

Between 0600 and 0615 11 October, Voice of America's WorldNet service had the following changes planned:

1) Shut down 3880 Hz analogue

2) Restart 3880Hz 30 MHz digital package with L-band frequency of 1270; new symbol rate of 20.400, FEC of 1/2.

3) Receivers supplied by VOA/WorldNet through BBG will be pretuned to the new service.

4) Those presently taking the 9 MHz bandwidth 3764 Hz As2 MPEG-2 service will have to do their own "forced retune" to the new service frequency and parameters.

5) The limited bandwidth 3764 Hz service will continue until 30 November and will then be shut down (you don't have to make the change at -0600 UTC on the 11th but must before 30 November).

6) New radio "virtual channels" will be numbered 370 to 398. TV affiliates will have virtual channels 370, 371, 372 and 378.

With a more than 300% increase in digital data capacity, the expansion from 1/4th (9 MHz) transponder to a full (30 MHz bandwidth) transponder strongly suggests additional video channel(s) capacity will be available after the switch over. Affiliates and others requiring assistance or additional information should contact by email TVROTRUB@IBB.GOV, or fax + + 1-202 205 2967. Technical assistance is available from George Cantalupo, through IBB Network Control Center (24 hours, 7 days) at + + 1-202- 619 1783.

This note: The FEC 1/2 and full transponder width of this one should make it very robust!

on 4044Vt has restarted with Sr 6.620, 3/4 but permanence is in question" (**AJ**, NSW). "FOX MUX has been jumping about including 3798Vt and 3992Vt - apparently has decided 3992 will be it for now" (B. Richards, Aust).

Thaicom 2-3/78.5E: ETC Punjabi has replaced DD World on 3600Hz, Sr 26.667, 7/8 - programme channel 8. "Greek Mega Cosmos 3640 Hz is now encrypted in support of TARBS carriage in Australia" (**JK**, NSW). "Try 3640Hz for middle eastern MUX consisting of ATV (Turkey), Kanal D, TGRT, ERT Sat, Antenne Pacific (previously PAS-2 3836Vt) and Pink Plus - all CA" (Carlos, Sydney). "Pakistan's PTV has been seen with outward bound news feeds on 3515Vt, Sr 3.333, 3/4" (Carlos, Sydney - Ed's note: Could be a good one to check given the launch of coalition bombing).

Soapbox comments: "I have a complaint. Living here in Solomon Islands we are totally dependent upon fax, email or letters to source TVRO equipment. I have written and rewritten numerous times to virtually every dish system supplier advertising in SatFACTS and three of these simply won't answer our letters. They are (identified). Is there a reason these firms advertise but don't respond to someone waving money at them to buy equipment?" (**Beldi Hansjakob**, Marovo,. Western Province). "Further to Digisatnz (SF September, p. 4). They claim they cannot advertise an IRD which has both NDS and Irdeto embedded - one, or, the other only. I had wondered how or why NDS would be allowing themselves to be married into the same box as Irdeto - their arch enemies! One suggestion made is the software to have a

Installer/user steps to replace LBC, ART and JSC after Irdeto encryption

- **ART/LBC/JSC Letter to viewers (October 5)** -

Dear viewer,
Please find information relating to ART, LBC, Al Jazeera encryption. The first stage of the encryption of the LBC channel is complete. ART and JSC shall follow. ART and JSC will be encrypted after LBC, approximately 1 or 2 months. To continue seeing the above mentioned services you will need to do the following:

- The form of encryption used will be Irdeto CA. You will need a receiver that has Irdeto smart card conditional access. For example, decoders such as UEC 720, Zinwell, STRONG or Humax are able to be used. You will need to indicate on your application (for service) form if you DO NOT have this type of receiver.

- AN application form needs to be filled out and sent back to World Media International P/L.

- Subscription payment is made on an annual basis. Upon receiving the application form we will provide you with the cost of receiver (if you require it) and subscription fee. Once the application is made and registered and payment is made a smart card and or receiver will be sent to your place of viewing.

Forward all correspondence to: ART, LBC, JSC / World Media International P/L, Suite 1C, 9 Burwood Road, Burwood NSW 2134 (tel 61-2 9747 1011, fax 61-2 9747 1022, email wmi@worldmedia.com.au
(Tony Ishak, Managing Director, World Media International P/L)

- **ART/LBC/JSC Application for Smart Card** -

(Please circle) Mr. Mrs. Ms. Dr.
First name _____
Surname: _____
Address: _____
_____
Place of birth (optional): _____
Home phone number: _____
Mobile number: _____
e-mail: _____
Date of birth: _____
License number or passport number (please circle one): _____
Preferred payment detail:
_____
_____
Size of satellite dish: _____
Do you require an Irdeto capable receiver? _____
Your satellite installer name & contact details:
_____
_____
_____
Install date (done): _____
...
Office use only:
Application received _____
Smart card # _____
(SatFACTS Magazine PO Box 330, Mangonui, Far North, New Zealand)

hidden menu and secret pin code or a special key sequence upon booting up - sort of along the lines of the commonly available Chinese built DVD players that do all regions but you have to know how to get into the hidden menus to make this function work. " (CS. NZ).

SatFACTS Guide to Where to find **live** War on Terrorism Reports FTA

For as long as they stay "on the air" **PTV** (Pakistan TV) on AsiaSat 3 (4100/1050Vt analogue, audio on 6.60 + Radio Pakistan audio on 7.5 MHz has a very much inside view. There are English language news shows here as well as live camera shots which other broadcasters frequently pickup for their own use.

Reuters Singapore (3907Hz on As2, Sr 5.632, 3/4) has been picking up and rebroadcasting PTV for hours at a time without interruption although the audio quality is frequently very poor (much too hot - over modulating, and badly compressed).

WorldNet MPEG-2 digital (As2 3764Hz, Sr 6.100, 3/4) has live USA sourced reports often hours ahead of any other source including the more popular CNN (encrypted) services.

Fox News USA (As3, 3980Vt, Sr 28.100, 3/4) reported in detail on page 26 has a decided American bias with an abundance of flag raising and rah-rah-rah for our side.

Saudi Channel 1/Dubai EDTV/Dubai Business Channel (As2, 3660Vt, Sr 27.500, 3/4) are valuable for their Middle Eastern access to sources including videotaped statements from Osada bin Laden and his staff.

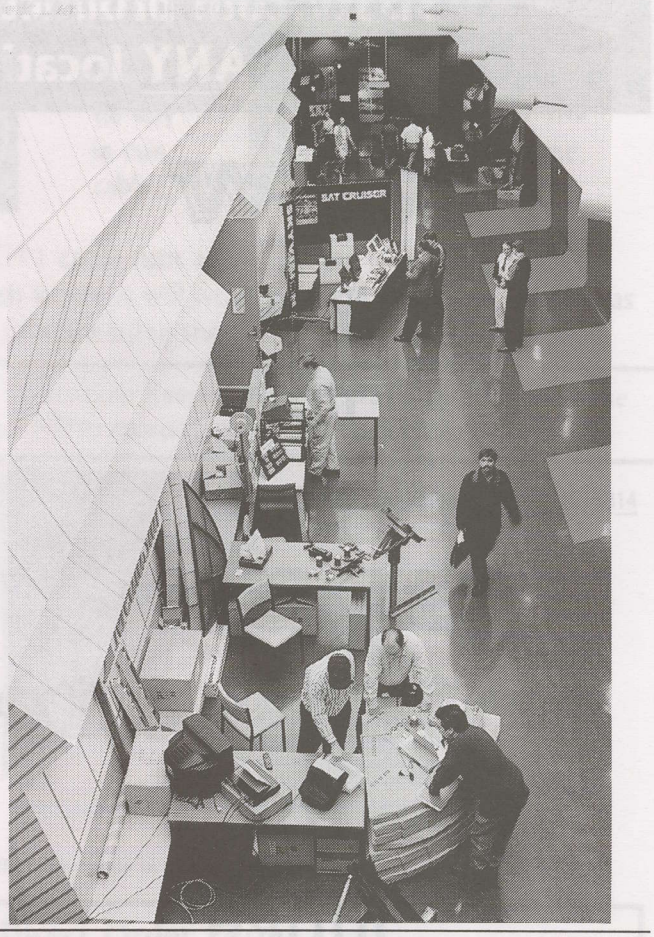
Deutsche Welle/RAI International/TV5 Asie (As2 European bouquet, 4000Hz, Sr 28.125, 3/4) often scoop American networks with news tapes sourced in the middle east where USA arrangements are shaky at best.

CNBC (C2M 4040Hz PAL, audio 6.8; 4071Hz Sr 14.062, 3/4; PAS8 3900Hz, Sr 27.500, 3/4) often breaks for live NBC-USA feeds.

ABC USA (I701, 3769RHC, Sr 20.000, 7/8) goes from occasional news feeds to full time ABC-USA live news coverage when events warrant.

CBS USA (PAS-2 3901 Hz, Sr 30.800, 3/4) expands from daily CBS News / David Letterman limited coverage to full-time non-stop coverage when events warrant.

AT Sign-off



Where have all the people gone?

Frank Freitag, Skyvision Australia Victorian Branch Manager, writes:

"*There is no other way to say this than to simply state I was bitterly disappointed with this year's turnout at SPRSCS.*"

Peter Lacey of Lacey's Australia writes, "*The turnout was lower than last year and if you lost money last year, you had to lose even more this year.*"

Both statements unfortunately ring true. Let's explore what happened here.

The number of exhibitors at this year's show was up (list on p. 8). To encourage more show session attendance we did the following:

1) Created and sent out a series of elaborate press release packages to a wide range of Australian media sources - more than 600 in all including not only telecommunication trade publications (Silicon Chip, Radiomag and nearly ten others) and trade associations (such as T.E.T.I.A) as well as electronic suppliers in the Melbourne region (such as Dick Smith, Jaycar and others). All of these were supplied with a quantity of "Gift General Session Blue Line Passes" as well as a larger supply of "Red Line Exhibit Hall Passes."

2) Each exhibitor was sent a similar package - the Blue Line passes entitled the bearer to show up and attend the Thursday and Friday General Sessions without payment as a gift from the exhibiting supplier.

3) With the August SF, each and every subscriber received a 6-page brochure describing the show and encouraging attendance at the Thursday-Friday-Saturday Exhibit Hall sessions even if they did not wish to attend the paid-for sessions.

John Vandeven of John's Electronics wrote, "*I considered the sessions but they were over priced for my budget so I stayed home except for a Saturday Exhibit Hall visit.*"

The most expensive paid-for session was conducted Saturday by Eric Fien - the subject was commercial-building DVB-T system planning and construction. It was A$375 a head. Twelve signed up for this and Darren Colquhoun's (DC Electrical, Fairy Meadow, NSW) report after the session was typical:

"*I was very nervous about spending $375 to sit and listen to a guy talk for five or six hours. That's big money. I was extremely impressed and it was worth every cent paid.*"

Peter Lacey on attendance:

"*I am sure that the failure of Ansett was a factor in attendance, perhaps also the Grand Final Australian Rules Football match in Melbourne Saturday afternoon.*"

Indeed Ansett was a factor. Gary Salisbury of Kansat, an early registrant, e-mailed, "*Because of Ansett's demise there was simply no way I could travel from rural Queensland to Melbourne for under a thousand dollars. Regrettably, I missed the conference.*"

Frank Freitag on last minute changes: "*We were told by attendees there were several last minute changes and you had not even attempted to inform us of these changes. A simple fax advising of changes would have been good.*"

In fact, more than a dozen overseas delegates did not show up. This included speakers Patrik Lagerstedt of Skinka (UK) and John Ramsey (Avcom-Ramsey from USA). And delegates from Egypt, Hong Kong, Tahiti.

Nobody anticipated the terrorist attacks in the USA. John Ramsey was simply unable to leave the USA - the wish of people higher up the chain than he. Patrick Lagerstedt was unable to break through the UK's airline priority ticketing system put into place following the WTC bombing. Nagy George Mourad from Champion Electronics (Cairo, Egypt) was denied access to Australia following the terrorist attacks.

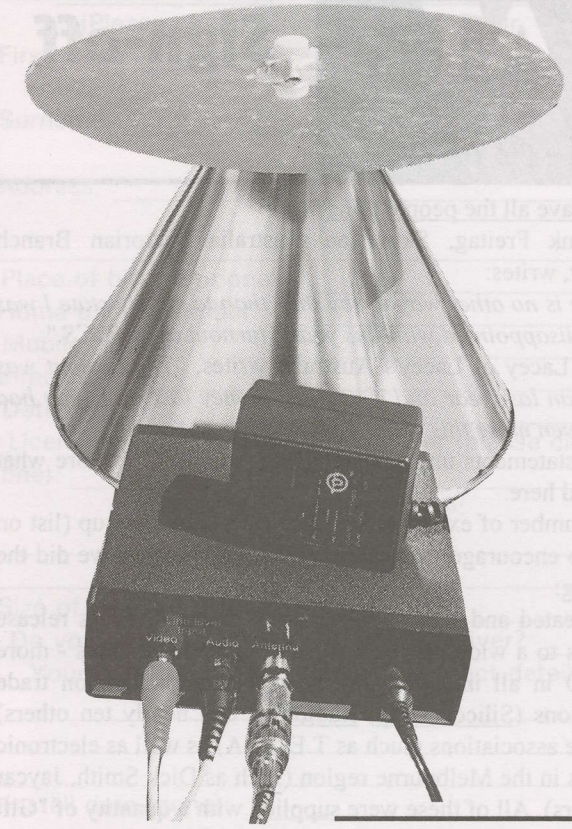
As late as Friday morning September 28th we were working with Internet folks to attempt to bring John Ramsey "in" to Melbourne via a video telephone link for his Friday SDStv sessions. A firewall protection system in place at Box Hill Institute was a major hurdle we could not circumvent.

Although the Melbourne newspapers and TV were filled with reports on the aftermath of the USA terrorist attacks, the Australian public at large seemed non-concerned about the threat of WW III. We heard one individual whom we had previously considered bright dismiss the prospect of WW III with a terse, "*Aren't the media making a big thing of this incident - it will all pass over in a few days.*" Meanwhile in Afghanistan, non-Muslims were being made to wear yellow ribbons on their lapels; where have we seen that before?

Perhaps the good news here is that despite Ansett, terrorist attacks, and the worst and most dramatic economic downturn in 30 years we were still able to hold SPRSCS 2001. Even if Frank's Skyvision had poor sale results trying to flog flat screen LCD monitors, the fellow two booths away sold out every Irdeto capable receiver he had in stock. Is it possible Frank's firm had the wrong products on offer?

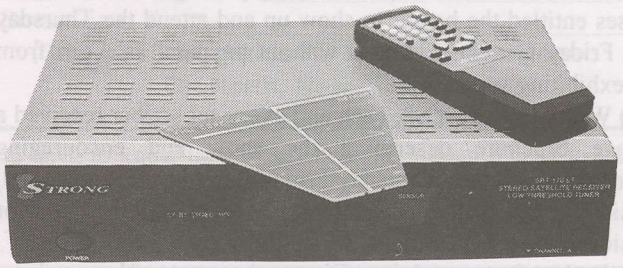
SDStv.com products FACTORY DIRECT to ANY location in the world!

NOW you can put **SDStv on the air** to judge results for **yourself!**



Transmitter Package (above)

Receiver Package (below)



A complete SDStv.com transmit and receive system package (*) at a very special introductory price of US$295!

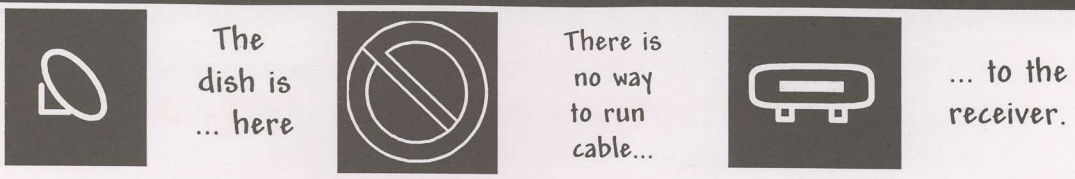
Five easy steps: (1) Begin with any analogue or digital receiver as a programme source. Connect the A/V outputs to the SDStv.com 20 mW transmitter. (2) Take our omni-directional Discone transmit antenna and connect the transmission line (provided) from the transmitter to the Discone. (3) Plug the power pack (provided) and connect small end to the mating socket on the 20 mW transmitter. (4) Plug the power pack into the 220 - 250V AC mains, push the "on" button on the front of the 20 mW transmitter and set it to "9". You are "on the air!" (5) Go to a receive site up to 4 km (LOS) distant, connect the SDStv.com Logi antenna transmission line to the L-band input on the analogue receiver. Tune the analogue receiver to TR9 (1270 MHz) and bingo - you have SDStv.com reception. Peak the receive Logi for maximum signal and you are operating SDStv.com!

* - You supply only the standard analogue L-band receiver(s) - ANY analogue receiver will work, even those 20 years old!

A complete transmission system kit - the transmitter, the transmitting antenna, transmission line, power-pack (supply), and a receive antenna (*). Plus a one-year subscription to "**SDStv.com Application Notes**" filled with hints and tips to help you get maximum distance and performance from your SDStv.com system! Everything you need to go on the air - less only one or more analogue receivers.

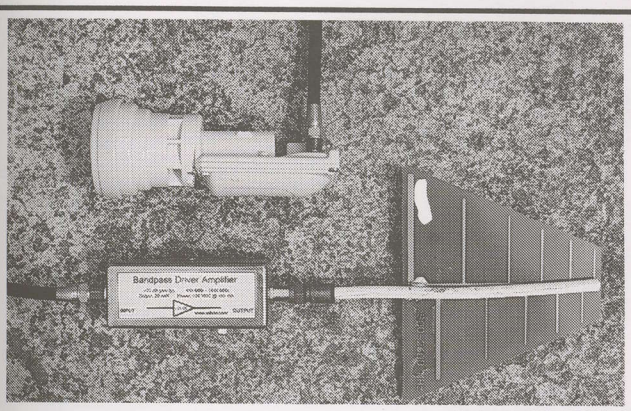
* - Additional Logi receive antennas to equip more receive sites available - see order form to right.

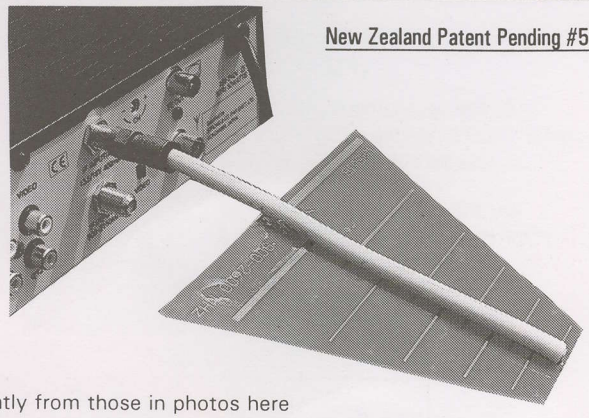
The BDA-33 from SDStv.com. Impossible installations are gone. Forever.



The BDA-33 SOLUTION. Forget about RG6 or RG11 cable runs across streets, down the side of multi-storey buildings, over impossible terrain. Put the dish where it will work best and couple to one (or as many as you wish) receivers up to 300 metres (+) distant using the "BDA-33 Wireless Link"!

#1) Connect LNB output to BDA input; #2) BDA output to SDStv.com transmit antenna; #3) Digital or analogue receivers to SDStv.com receive antenna. Link from dish/LNB to receiver(s) with no coax cable between!





New Zealand Patent Pending #513814

Actual products differ slightly from those in photos here

SDStv.com Ltd Factory-Direct Order Form

☐ One (1) **SDStv.com transmit and receive package** as described on page 32 here - US$295 + AIR Parcel Post insured shipping

❑ PLUS - add ____ **extra Logi receive antennas** at US$20 each

☐ One (1) **SDStv.com BDA-33 wireless link package** as described above - US$210 + AIR Parcel Post insured shipping.

❑ PLUS - add ____ **extra Logi receive antennas** at US$20 each

☐ HIGH Power option - One (1) **Ten Watt output L-band solid-state amplifier** - US$590 + AIR Parcel Post insured shipping

☐ HIGH Gain **Receive Antenna option** - built-in 15 dB gain low noise amplifier with Logi antenna - US$79 each (# required: _____) + AIR Parcel Post insured shipping

Extensive full product line catalogue with system planning guide available - see www.sdstv.com

WORLD-WIDE SHIPMENT via insured AIR Parcel Post or (optional) FED-X direct from SDStv.com Ltd. Full SDStv.com product range also available in Pacific from STRONG Aust tel + +61-3-9553-3399

Ship to:

Your name _____ Company _____

Mailing address _____

Town/city _____ State/Province _____ Country _____

Payment by: ☐ Cheque enclosed (drawn in US$ or your equivalent to SDStv.com Ltd) - $_____

☐ Visa/Mastercard in name of _____ expires ____/____

with number of _ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

Signature of card holder _____

SDStv.com Ltd. PO Box 30 Mangonui Far North New Zealand

tel ++64-9-406-1282 ▪ fax ++64-9-406-1083 ▪ Email skyking@clear.net.nz ▪ www.sdstv.com

Question: Can I receive Optus B3/B1, PAS8/PAS2 and Intelsat701, all at the same time with ONE dish, and without using an actuator?

Answer: Yes, with Toroidal Dishes!!!

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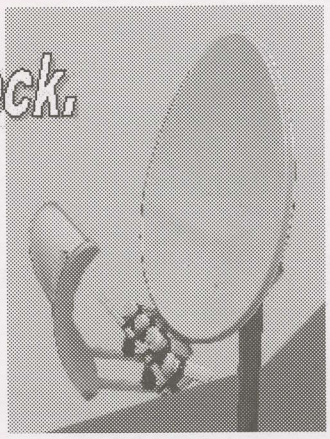
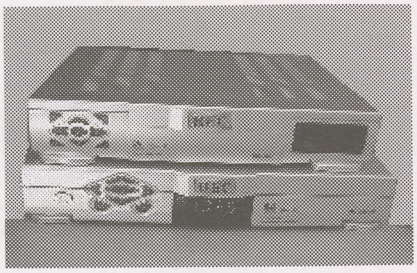


Model		TOROIDAL55	TOROIDAL90
Main Reflector	Height	53.2 cm	96.7 cm
	Width	66.8 cm	108.6 cm
Sub Reflector	Height	25.3 cm	36.1 cm
	Width	49.7 cm	83.6 cm
Reception Frequency		10.70 - 12.75 GHz	10.70 - 12.75 GHz
Antenna Gain (At 12.5GHz)		35.95 dB (at 0 deg. Azimuth)	40.10 dB (at 0 deg. Azimuth)
		35.40 dB (at 20 deg. Azimuth)	39.20 dB (at 20 deg. Azimuth)
Azimuth (at Tilt 0 deg)		+/- 30 deg (total 60 deg)	+/- 25 deg (total 50 deg)
LNB Installation		2 ~ 5 pcs	2 ~ 5 pcs
Efficiency		70 ~ 82%	65 ~ 80%
Polarization		Linear & Circular	Linear & Circular
Material		Galvanized Steel	Galvanized Steel
Finish Coating		Polyester powder coating	Polyester powder coating
Color		White gray, Dark gray	White gray
Operating Temperature		-30 deg ~ +60 deg	-30 deg ~ +60 deg
Relative Humidity		0% ~ 90%	0% ~ 90%
Damage Winds		65 m/sec	65 m/sec
Operating Winds		50 m/sec	45 m/sec

Pricing? Too good to be true! **Toroidal 55** is **A$90 + GST;**
Toroidal 90 is **A$160 + GST.** Call us today!!!

You don't believe? CALL AUTOSAT AUSTRALIA now for Revolutionary TOROIDAL dishes.



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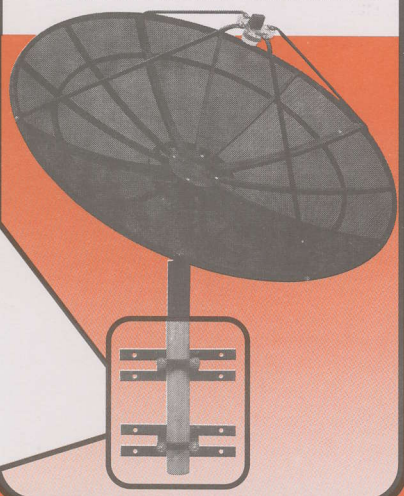
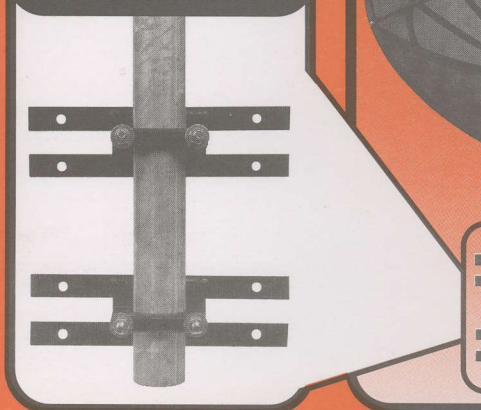


ALL SUPPLIED WITH WALL BRACKETS



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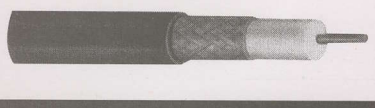

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