



NEWSLETTER

Advantech
wireless broadband culture

January 2010

Let the bubbles fly sky-high!

To all our esteemed customers, partners, friends and their families, the entire Advantech team wish you a very happy new year and that you may all be successful in what ever you wish to realize and feel happy in all of your daily activities.

From our side, we will make sure your life becomes easier by providing you our traditional high grade services and products, to keep you smiling as a happy customer..

Ka- band: Now you are ready!

Although the number of new Ku- and C-band birds is constantly increasing, it is obvious that demand is still exceeding, by far, available bandwidth on offer from the operators.

Also, the types of applications are changing: the use of multiple small footprints (enabling local/regional content) and the required powers and smaller antenna sizes are driving today's requirements. Hence, you will agree that after a rather long introduction period, the use of Ka-band (29 -30.5 GHz) is now a reality.

Advantech, probably being the oldest and most experienced manufacturer of SSPA's (solid state power amplifiers), has a complete new Ka-band product range offering various power levels:

The range starts with the 2-Watt version (type SSPB-2010Ka) which has an L-band input, and housed in a compact Outdoor package (ODU). (L x W x H: 187 x 98 x 71 mm)

Moving up the range, we have 10 and 30 Watts: the highly linearized SSPB-3001Ka covers the 28.5 to 31.0 GHz range and is probably the smallest outdoor form factor one can find on the market.

Next to our Ka-band SSPB's, we also have a full range of products in all of the other common (and not so common, such as 12.75 to 13.25 GHz in the lower Ku-band) frequency bands.

In each case, we have pushed size and weight to the minimum: A good example is the lightweight SSPB (2.5 kg) with L-band input going up to 16 Watt Ku and 20W C or X (type SSPB-110).

At the other end of the scale, we have amplifiers giving you as much as 1,000 Watt of output power, with a choice of input frequency options!

But, Advantech is not just offering building bricks. We can provide a finished system including integrated redundancy switching, frequency converters or the antenna controllers and beacon receivers necessary for tracking.

Building on our reputation for reliability, we are also committed to the best cost-effectiveness on the market.

SCPC or TDMA: you choose

Advantech often comes across customers with the requirement to build small point-to-point or mesh networks carrying IP (Internet Protocol) connections. As time goes by, these networks grow to the point where the customer has the need to introduce a larger scale TDMA solution. For several years, we have offered our customers terminals and modem solutions that can easily switch between SCPC and DVB-RCS (TDMA) operation. Recently we unveiled our new flagship, the S5420 model. In addition to full DVB-RCS compliance, the S5420 offers 10Mbps bi-directional operation with powerful LDPC forward error correction; on-board TCP and HTTP acceleration and data compression. As an option it can also provide accelerated VPN support. Advantech customers just cannot get enough of this product and keep coming back for more. It is definitely something that you should take a look at.



The untold story of a modulator

There are modulators and modulators... And there are some who are equipped with so many features that many go unnoticed.

Take the Advantech SBM75-e for instance. This unit has not only the DVB-S/DSNG and DVB-S2 modulations. It can also work in TPC, also known as Turbo Coding, which becomes interesting when working at lower data rates in particular. It also has Roll-offs (Nyquist filters) which are better than the specified standards, being 15% next to the standardized 20, 25, and 35% values. The amazing L-band output performance can be supplemented with an optional 70/140 MHz output. And besides the integrated multiple ASI inputs (up to 8 ASI Transport Streams can be aggregated into the unit) for MultiStream operation in CCM and VCM/ACM, it also has an GbE IP input with GSE optional encapsulator. Also the DVB-S2 packet size can be as low as 4 kb, reducing delay, whereas the standard only provides 16 kb and 64 kb –packets.

Moreover, redundancy management is built-in. This means that external switches can be controlled directly from the unit, without having the need of a separate redundancy switching system fitting into a rack.

Obviously, this is not only an important money saver, but also a nice space saver when it becomes scarce in e.g. DSNG trucks or Fly-away racks. And let's be honest: when it comes to pricing, Advantech is beating the competition by far.

Oh, and we almost forgot to mention there is also a full Modem version, which includes the SBD75e demodulator, being the perfect mirror of the modulator on feature level and user flexibility...

Let's talk MicroWaves!

Well, there are many of them! And nobody is certain any longer how many manufacturers there are and which one to choose. However, it helps to be aware that Advantech is not only one of the oldest manufacturers, but also has some of the best performing products and competitive pricing.

Why? Well, because we have our own proven and patented design which has not yet been equaled by any other manufacturer. Actually, the performance of our microwave equipment outperforms all comparable products on the market, both on price and performance levels. Take our AMR Transcend 800 as an example (picture): It has a standard set of G703 (PDH/SDH) + ASI + IP GbE inputs, which makes it versatile enough for simultaneous transmissions in both the broadcast and the Telco + IP worlds. Add to that Advantech's True ACM capability for optimum bandwidth efficiency and no-loss transmission plus the built-in traffic priority and low latency.

When you're thinking about installing a backhaul radio link for your 3G/4G traffic, or for UMTS TDD, or WIMAX and LTE with data rates of up to 400 Mbps or even 800 Mbps, and working between 6 and 38 GHz, we can assure you Advantech has the perfect solution.

But it would take us far too long in this article to explain all the advantages you would have. So, we suggest you download the data sheet from our website, or send us an email and we'll be happy to enlighten you on this magic product!



Intelligent Tracking antennae

Although Advantech is making antenna controllers for 25+ years and, more recently, mobile antennas for commercial applications, it's probably less known that we are also making Military grade fly-away antenna systems. These turnkey solutions include the complete delivery of the antenna, the motorized drive, auto-pointing and tracking devices (with capability up to and including Ka band) and the SSPB. All this is packed into self-contained "carry weight" packages that are able to be assembled and ready for transmission in minutes. A popular option is to team this system with one of our VSAT modems for use with our DVB-RCS hubs that are operated by a growing number of key defense organizations.

More information can be obtained upon demand regarding versions available and pricing, whether stand-alone or integrated with a full range of Advantech products. Don't hesitate!

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Predistorsion or Precorrection?

Inherent to the amplifier characteristics of a ground and/or satellite HPA, a certain amount of distortion is always generated, affecting the transmitted carrier. This distortion can be frequency-related (induced slope) or related to the modulation itself. (eye-pattern distortion in amplitude and phase modulations). In practice, this means a loss in efficiency through the need for higher back-off or stronger error correction coding.

One way to curb this problem is to pre-emphasize the transmitted carrier to negate the expected distortion products.

As usual, Advantech has a perfect solution for this: First, we pre-distort the eye-pattern based on the Rx values. This pre-distortion is especially efficient when operating in higher modulation schemes, such as 16APSK and 32APSK.

Next to that, we also Pre-equalize the frequency slope and inherent group delay.

The combination of these two "pre-corrections" result in a bandwidth efficiency gain of up to 2.7 dB.

This feature will be available very soon in a variety of our Advantech modems, such as the SBM-75e broadcast modulator and the S5420 VSAT modem. More details will be made available on our website, but feel free to contact us if you need more information on this money-saver.

What about SSPA redundancy?

Did you know that most of the higher power SSPA's at Advantech have a modular structure internally to aid repair? Until now, we have always implemented redundancy at the complete amplifier level, but now we are extending that internal modularity out to the user with the implementation of hot-swappable modules featured in our new range of SUMMIT amplifiers. The failure of one of those units results in only a 0.6 dB output power reduction from the system (on an SSPA equipped with 8 power modules) while the user swaps it out. Come and see just how easy that is on our booth at the Satellite 2010 Exhibition, held in Washington D.C. during March 2010.

When will you meet us?

Advantech will be pleased to see you again on one of the following Satellite and Broadcast exhibitions:

-**Satellite 2010 Washington**, March 16-18th, Hall C, Booth 1225

-**Satellite MENA (CABSAT) Dubai**, March 2nd to 4th, Hall 2, Booth 209

-**NAB Las Vegas**, April 12th - 15th

Please feel free to contact us if you would like to receive a personal invitation. We hope to see you soon on one of our booths for a chat!

More information and data sheets on all these new products can be found on our website
www.advantechwireless.com

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