DishPointer.com

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INNOVATION TELE SATELLITE AWARD & BROADBAND 02-03/2008

**DISHPOINTER**
Software Solution that, with the help of Google Maps and its real images as well as SatcoDX and its up-to-date channel data, provides highly accurate satellite reception information.

# Dishpointer

**One of the most critical questions** that come up before the erection of a satellite antenna is how to properly position the antenna so that the desired satellite can be received. In which direction should the dish be pointed? To the east? To the west? This would be its azimuth. And then how far up into the sky should the dish look? This would be its elevation. Actually, it's really not that hard to figure this information out; there are plenty of calculation aides and prepared tables that give you all the data you need. But if you do a little extra work, as Alan did with his Dishpointer software, you'll discover completely new results.

Alan, who lives in England, has been a satellite DXer since the year 2000. His first antenna was a 120 cm model with a rotor. "Back then I used an Echostar box with positioner to turn the motor", explains Alan.

As a student in aereodynamics, writing his thesis, he's completely at home working with PC programming. "I got my first PC when I was 16. It was a C64", remembers Alan about his early software programming days. "It must have been in 2004 when I came across Multimaps; it's a collection of geographic maps."

He came up with the idea to incorporate the display of satellite positions on these maps as a way to help with the set up of satellite dishes. But how was this going to work? These were fixed maps in differing display sizes. Alan could have programmed something but it would have required a lot of time and effort. So he dropped the idea; it would have been too much work.

In 2005 he started a web site (www.uksatellitehelp.co.uk) in which he provided helpful tips on how to properly set up a satellite dish.

To get an idea of how successful his website was, he enlisted the aid of Google Analytics, a free service that analyzes in great detail the traffic of a website. TELE-satellite also uses this service.

Google Analytics also contains a tool that graphically displays the geographical location of a website's visitors by displaying variously sized dots (the larger the dot, the more visitors) on a world map. And, wouldn't you know it, that is exactly the technology that Alan was looking for with his idea to display satellite positions.

He extracted his old idea from the back of his mind and began with a new sense of purpose to find a solution – and then promptly stumbled onto Google Maps.

Suddenly, everything clicked: in August 2007 he programmed the first version of his Dishpointer. Click on a desired position on the map and the azimuth and elevation of a selected satellite is displayed. "Now it was only a question of programming in order to integrate additional features", explains Alan about his work the last several months.

The first step was: why should a user first have to click on a map or enter an address when the IP number alone identifies the position? There are professional companies that provide exactly this data. Online stores use this information to determine if a buyer really lives where he says he does.

That was the first step. Now Dishpointer "knows" exactly where a user is and automatically sets the reception location to this point. This may not always be very precise; it depends on the accuracy of the virtual IP addresses compared to the real addresses.

Next, Alan analyzed the popularity of satellites so that

▲ **Alan at home in front of his reception system. He uses the smaller dish to receive the Sky package and the larger dish for scanning the skies. He programmed Dishpointer; a tool that combines azimuth and elevation with Google Maps for positioning on the Earth and SatcoDX with its global satellite databank.**

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Dishpointer, when started, can immediately display those satellites that would likely be of most interest. Lastly, Alan expanded Dishpointer so that a click would display any remaining receivable satellites as well as the receivable channels.

"I get the satellite data from SatcoDX", explains Alan. In a cooperative venture, Alan has linked his Dishpointer live to SatcoDX. "In this way the Dishpointer data is always up to date; changes are immediately incorporated."

With Dishpointer, Alan managed to link two worldwide services that are constantly concerned with being up to date: Google Maps and SatcoDX. He thereby created something new!

What does the future look like for Dishpointer? "Customer-oriented solutions are my business goals", revealed Alan, "One of my customers is a program provider: he wants to show his users (private viewers) as simply as possible how to erect a satellite antenna and what they can receive with it." The Dishpointer version for these customers is reduced to display only the data from that programming provider.

"Another customer operates cruise ships and wants to know what channels he can receive in any port." For this customer Alan developed a Dishpointer version that displays only those satellites and channels that are receivable with the available satellite system.

"Another customer is an aid organization that wants to set up satellite systems for their employees." Since their operational areas can often be in out-of-the-way places, Dishpointer can tell them in advance what dish size would be needed and what channels could be received.

"This", comments Alan, "might be an interesting tool for satellite receiver manufacturers to integrate in their receivers." This would not only be a helpful tool for the end user, Dishpointer could also be used to preprogram the transponder list into a receiver. "Dishpointer could preprogram the receiver automatically with up-to-date data and at the same time filter this data for a specific target market area", explained Alan his business idea. So far no manufacturers have signed on to this idea.

For the individual satellite installer that doesn't need a specific Dishpointer version, Alan added a small additional feature to Dishpointer: the installer can use it to determine ahead of time if buildings or other obstacles might interfere with reception. "A potential satellite system can be tested in advance and without any cost." Alan is quite proud of his Dishpointer program.

Dishpointer is a software solution that very simply and precisely can answer all questions regarding the planned erection of a satellite antenna system at a particular location.

Well done, Alan!

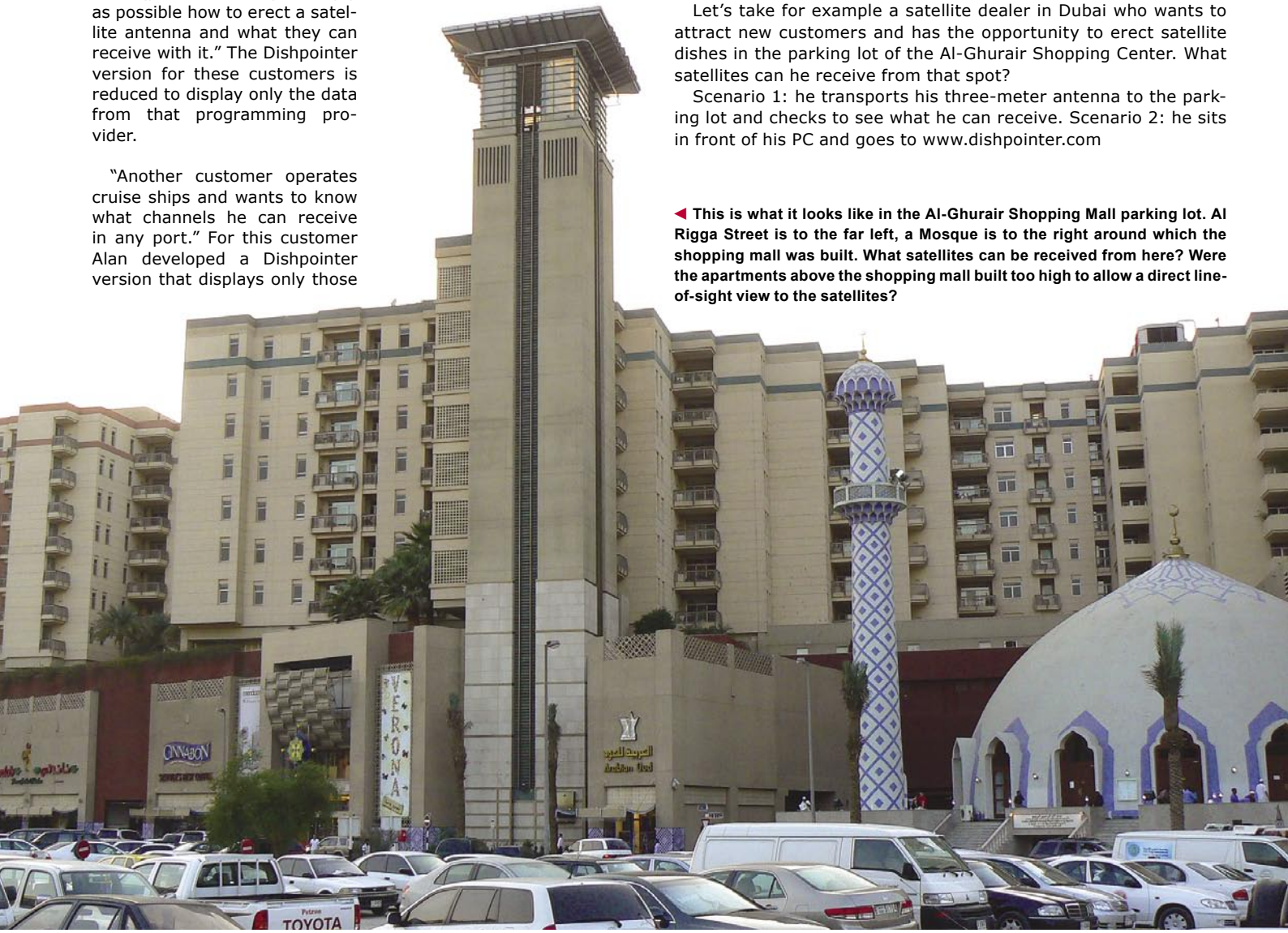
# Dishpointer Application Examples

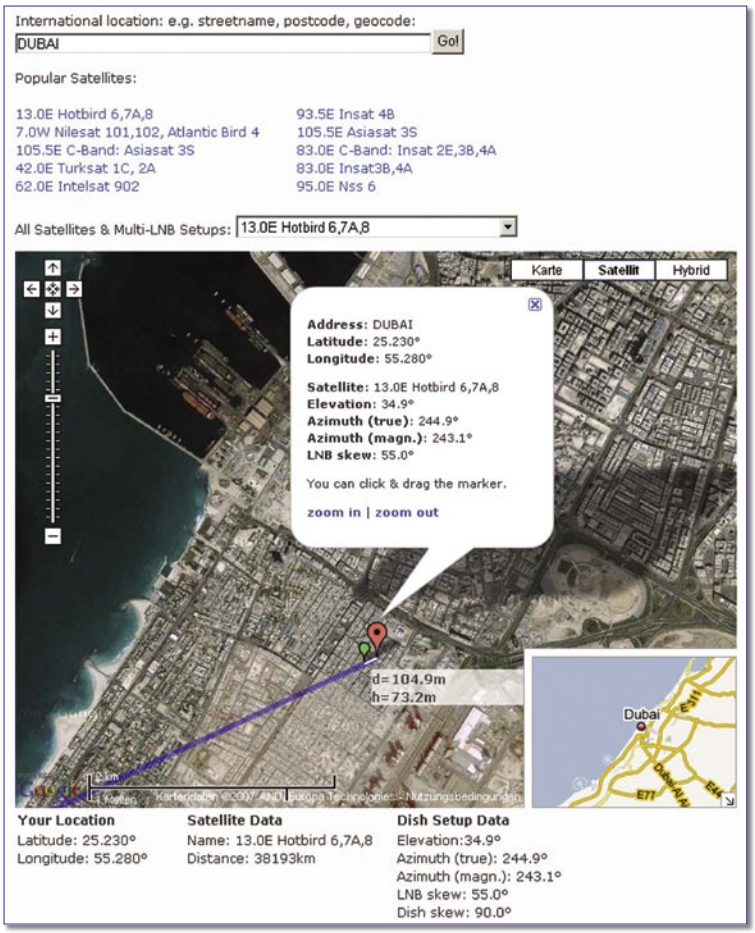
**Dishpointer is used** to determine ahead of time what satellites are actually receivable, how the antenna needs to be aligned and what channels can be expected on these satellites. Since Google Maps delivers very precise information, an actual site survey may in many cases not even be necessary.

Let's take for example a satellite dealer in Dubai who wants to attract new customers and has the opportunity to erect satellite dishes in the parking lot of the Al-Ghurair Shopping Center. What satellites can he receive from that spot?

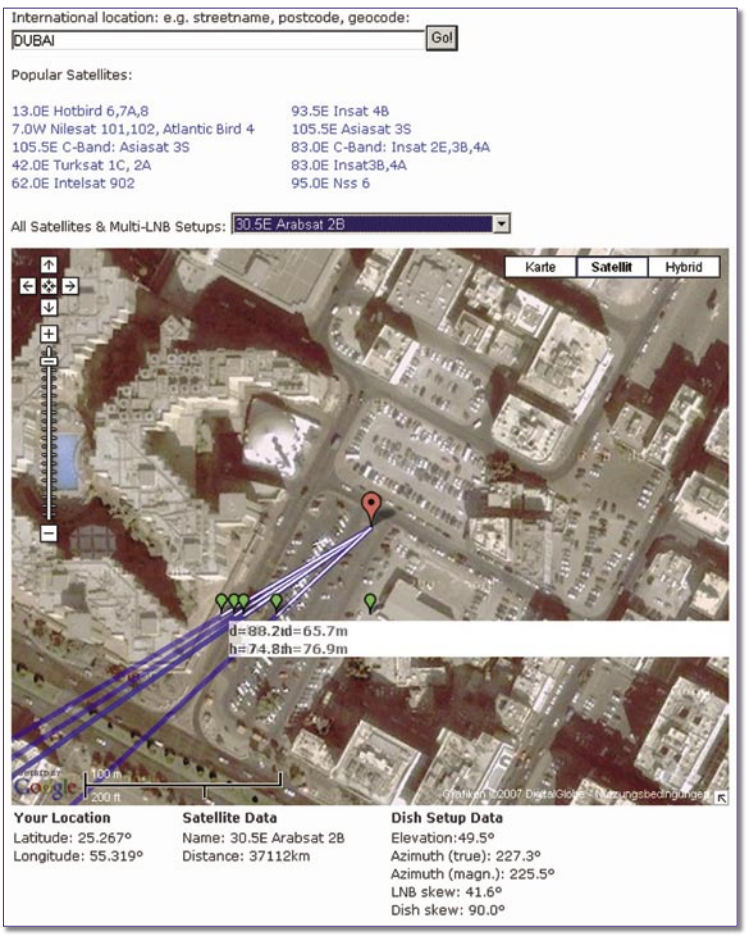
Scenario 1: he transports his three-meter antenna to the parking lot and checks to see what he can receive. Scenario 2: he sits in front of his PC and goes to www.dishpointer.com

**◀ This is what it looks like in the Al-Ghurair Shopping Mall parking lot. Al Rigga Street is to the far left, a Mosque is to the right around which the shopping mall was built. What satellites can be received from here? Were the apartments above the shopping mall built too high to allow a direct line-of-sight view to the satellites?**

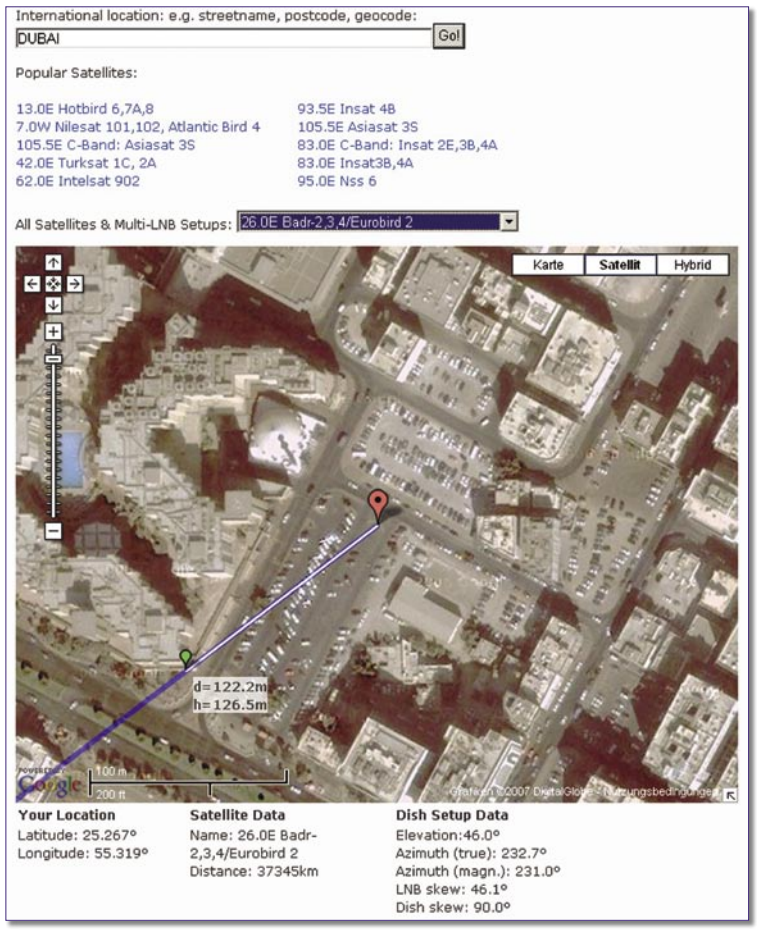




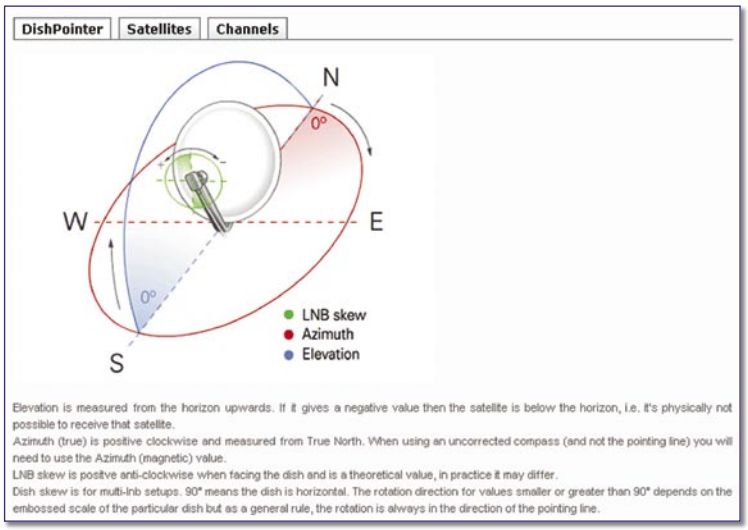

▲ The first step: Click on Dishpointer with Dubai as the selected Location.



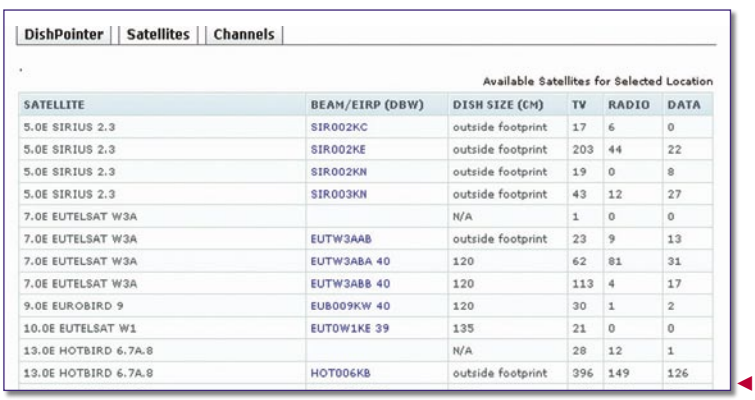

▲ An overlaid display of multiple satellites that are located "behind" the apartments on top of the Al-Ghurair Shopping Center. The question then becomes, should the location of the planned satellite dishes be changed? Our satellite dealer in Dubai now has to make a choice as to what satellites he wants to receive and then find an appropriate erection site. He can take care of this online and spare himself the extra work of setting up a reception test system at the planned site.




▲ The second step: Zooming in on the desired erection site in the Al-Ghurair Shopping Center parking lot. The Mosque is recognizable by its round shape. Al Rigga Street is to the lower left with its characteristically round-cut trees in the center of the roadway. From the desired position, BADR at 26 east appears to be right at the edge of the apartment building. The green arrow that can be repositioned by the user shows that the apartment building is 122.2 meters distant. If the apartment building is more than 126.5 meters in height, reception would not be possible. But since the actual height is far less than 126.5 meters, the building is not an obstacle.




▲ Dishpointer can do even more: with the push of a button the receivable satellites can be displayed with information on recommended dish size.




| SATELLITE | BEAM/EIRP (DBW) | DISH SIZE (CM) | TV | RADIO | DATA |
|---|---|---|---|---|---|
| 5.0E SIRIUS 2.3 | SIR002KC | outside footprint | 17 | 6 | 0 |
| 5.0E SIRIUS 2.3 | SIR002KE | outside footprint | 203 | 44 | 22 |
| 5.0E SIRIUS 2.3 | SIR002KN | outside footprint | 19 | 0 | 8 |
| 5.0E SIRIUS 2.3 | SIR003KN | outside footprint | 43 | 12 | 27 |
| 7.0E EUTELSAT W3A | | N/A | 1 | 0 | 0 |
| 7.0E EUTELSAT W3A | EUTW3AAB | outside footprint | 23 | 9 | 13 |
| 7.0E EUTELSAT W3A | EUTW3ABA 40 | 120 | 62 | 81 | 31 |
| 7.0E EUTELSAT W3A | EUTW3ABB 40 | 120 | 113 | 4 | 17 |
| 9.0E EUROBIRD 9 | EUB009KW 40 | 120 | 30 | 1 | 2 |
| 10.0E EUTELSAT W1 | EUT0W1KE 39 | 135 | 21 | 0 | 0 |
| 13.0E HOTBIRD 6.7A.8 | | N/A | 28 | 12 | 1 |
| 13.0E HOTBIRD 6.7A.8 | HOT006KB | outside footprint | 396 | 149 | 126 |

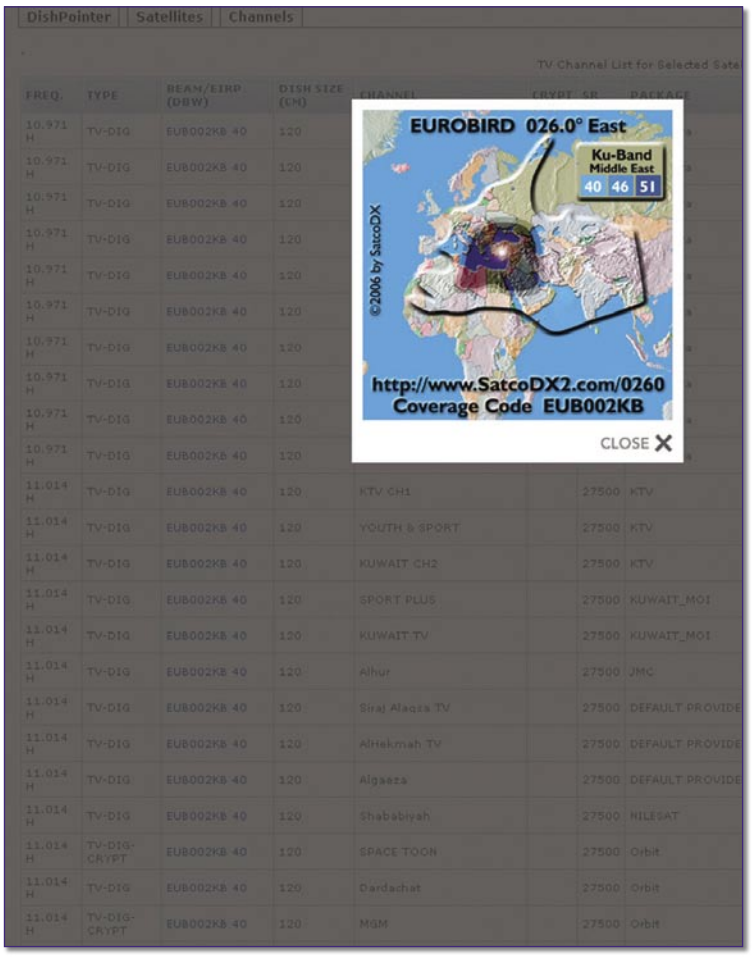
◀

DishPointer | Satellites | Channels

TV Channel List for Selected Satellite

| FREQ. | TYPE | BEAM/EIRP (DBW) | DISH SIZE (CM) | CHANNEL | CRYPT | SR | PACKAGE |
|---|---|---|---|---|---|---|---|
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | JSC | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | JSC Mubasher | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | JSC International | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | JSC Sports | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | JSC Children | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | JSC Documentary | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | Qatar TV 1 | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | Alkass | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | Test | | 27500 | Al Jazeera |
| 10.971 H | TV-DIG | EUB002KB 40 | 120 | Test | | 27500 | Al Jazeera |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | KTV CH1 | | 27500 | KTV |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | YOUTH & SPORT | | 27500 | KTV |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | KUWAIT CH2 | | 27500 | KTV |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | SPORT PLUS | | 27500 | KUWAIT_MOI |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | KUWAIT TV | | 27500 | KUWAIT_MOI |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | Alhur | | 27500 | JMC |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | Siraj Alaqsa TV | | 27500 | DEFAULT PROVIDER |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | AlHekmah TV | | 27500 | DEFAULT PROVIDER |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | Algaeza | | 27500 | DEFAULT PROVIDER |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | Shababiyah | | 27500 | NILESAT |
| 11.014 H | TV-DIG-CRYPT | EUB002KB 40 | 120 | SPACE TOON | | 27500 | Orbit |
| 11.014 H | TV-DIG | EUB002KB 40 | 120 | Dardachat | | 27500 | Orbit |
| 11.014 H | TV-DIG-CRYPT | EUB002KB 40 | 120 | MGM | | 27500 | Orbit |

▲ Even the receivable channels are shown…




▲ …and with one click a satellite's footprint is blended onto the channel table.