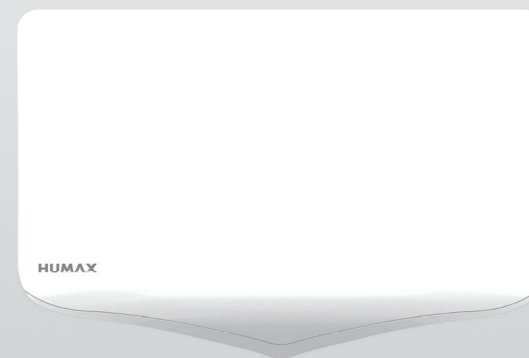


HUMAX

Design-Satellitenantenne
mit einer dual-linearen Polarisation

HUMAX Advanced-H40D Series

HUMAX



HUMAX Advanced-H40D Series

Bedienungsanleitung
User's manual
Manuel d'utilisation
Manuale utente

Ver. 2.0

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Um was handelt es sich bei der HUMAX Advanced-H40D?

Die HUMAX Advanced-H40D ist eine Satellitenantenne vom Typ Hornanordnung mit doppelter Linear-Polarisation, die Signale von großen Satelliten empfangen kann und eine normale Parabol-Antenne, wie es sie früher gab, ersetzen kann.

Da sie klein, unauffällig und bedienungsfreundlich ist, kann sie innerhalb von wenigen Minuten aufgestellt werden und als tragbare Antenne für sämtliche Arten des Satellitenempfangs verwendet werden.

Die HUMAX Advanced-H40D kann sowohl für den Empfang frei zugänglicher als auch den verschlüsselter Kanäle verwendet werden (wobei in diesem Fall ein Abonnement bei einem Betreiber benötigt wird); sie kann auch alle Kanäle mit hochauflösenden und deshalb hervorragenden Fernsehbildern empfangen.

Um Näheres über Gebrauch und Installation zu erfahren, lesen Sie bitte die nun folgenden Anweisungen und Installationshinweise sorgfältig durch.

Nutzen Sie zuhause mehr als einen Fernseher?

H40D2



H40D4



Nehmen Sie einen HUMAX mit mehrfachem Ausgang

Es ist möglich 2 Kanäle gleichzeitig mit der HUMAX Advanced-H40D2 zu schauen
Wollen Sie 4 Kanäle gleichzeitig genießen? Dies ist möglich mit der HUMAX Advanced-H40D4

Sicherheitsanweisungen

- Vor dem Gebrauch dieses Produkts lesen Sie bitte diese Bedienungsanleitung sorgfältig durch und befolgen Sie Installations-, Montage- und Ausrichtungsanweisungen genau.
- Alle Anweisungen sollten befolgt werden, um technische Probleme zu vermeiden.
- Jegliches elektrische oder magnetische Feld, das sich in der Nähe der HUMAX Advanced-H40D befindet, kann zu schlechtem Empfang führen oder sogar dafür verantwortlich sein, dass das Gerät vollständig vom Signal getrennt wird.
- Bohren Sie den Kunststoffdeckel der Antenne, der diese vor Feuchtigkeit schützt, nicht an.
- Gehen Sie vorsichtig mit der Antenne um, da jeglicher Stoß die Geräteelektronik beschädigt.
- Öffnen Sie den Deckel nicht, jeglicher Reparatur-Versuch einer nicht entsprechend ausgebildeten Person kann gefährlich sein und die Garantieansprüche erlöschen lassen.
- Jegliches Hindernis (Gebäude, Bäume, etc.) blockiert den Empfang des Signals vom Satelliten an die Antenne.
- Malen Sie nichts auf den Antennendeckel oder fügen diesem irgendeine Substanz zu, da dies den Empfang des Signals vom Satelliten blockiert.
- Das Kabel zwischen der Antenne und dem Satellitenempfänger darf nicht länger als 30 m sein, da dies zur Qualitätsminderung des zu empfangenden Signals führt.
- Vergessen Sie nicht, die Antenne und die Halterung an die Kreuzpolarität anzupassen (bei schiefer Winkel sehen Sie bitte in Schritt 5 nach).
- Ziehen Sie alle Antennenschrauben an, wenn Sie sämtliche Anpassungen vorgenommen haben. Dieses Produkt enthält einen Universal-LNB, es ist untersagt, einen LNB hinzuzufügen, ihn auszuwechseln oder zu verändern.
- Um Näheres über die oben genannten Punkte oder sonstige weitere Informationen zu erfahren, wenden Sie sich bitte an Ihren Händler oder den Kundendienst.

WARNUNG

Nicht korrekt oder an eine unpassende Struktur angebrachte Antennen sind leicht durch den Wind zu beschädigen. Diese Schäden können sehr ernsthafter Natur und sogar lebensgefährlich sein. Der Eigentümer und Antennen-Installateur übernimmt die volle Verantwortung dafür, dass die Installation strukturell in Ordnung ist, damit sie sämtliche Lasten tragen kann (Gewicht, Wind und Eis) und gegen lecke Stellen vorschriftsmäßig abgedichtet ist. Der Hersteller übernimmt aufgrund der vielen unbekannt variierenden Anwendungen keine Haftung für Schäden, die durch ein Satellitensystem verursacht worden sind.

Lieferumfang

Nr.	Symbol	Teilename	Abbildung	Abbildung
1	A1	Antennen-Hauptteil		1
2	B1	Winkelhalterung		1
3	B2	Hauptstütze		1
4	B3	Fixierungshalterung A		1
5	B4	Fixierungshalterung B		2
6	B5	Schraubenschlüssel		1
7	C1	Kompass		1
8	S1	Sechskantschraube M6x18 SEMS2		3
9	S2	Sechskantschraube M6x50 SEMS2		1
10	S3	Halbrund-Vierkant- Halsschraube M6x30		3
11	S4	Halbrund-Vierkant- Halsschraube M6x50		4
12	N1	Mutter M6		7

So wird sie installiert?

Indem man die Anweisungen Schritt für Schritt befolgt, ist es einfach, die HUMAX Advanced-H40D selbst oder mit Hilfe eines professionellen Antenneninstallateurs zu installieren.

Vor dem Installieren Ihrer Antenne prüfen Sie bitte, ob alle unter "Lieferumfang" genannten Teile in der Verpackung sind. Sollten Teile fehlen, kontaktieren Sie bitte Ihren Händler.

Schritt 1 : Wo kann man sie installieren?

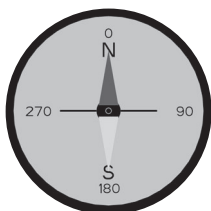
Um ein Signal vom Satelliten zu erhalten, sollte die HUMAX Advanced-H40D an einer prozessparallelen Stelle (außerhalb des Hauses oder der Wohnung) in Richtung des Satelliten zum Äquator hin installiert werden. Hierzu benötigen Sie einen Kompass, um die HUMAX Advanced-H40D genau auf den Satelliten hin auszurichten.

Anmerkung

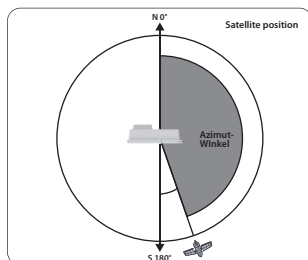
Als Bezug nehmen Sie bitte die Tabelle der Azimut-Winkel, die auf den letzten Seiten dieser Bedienungsanleitung aufgeführt sind.



< Kompass >



< Azimut-Winkel >



Anmerkung

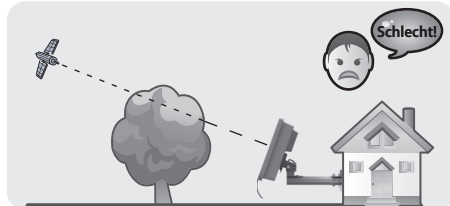
Zur Sicherstellung einer genauen Ablesung am Kompass, führen Sie die Messungen ausserhalb der Wohnung durch und achten Sie bei der Ablesung bitte darauf, dass Sie sich nicht in der Nähe von großen Metallobjekten befinden, insbesondere Elektrokabeln. Führen Sie außerdem die Ablesung mehrfach durch.

Stellen Sie sicher, dass sich keine Hindernisse, wie etwa Gebäude oder Bäume, vor der HUMAX Advanced-H40D befinden, die die Qualität des Signalempfangs beeinträchtigen (denken Sie daran, dass Bäume wachsen und das Signal blockieren können).

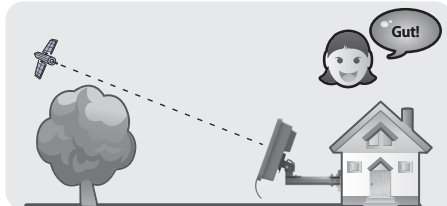
Um Ihre Antenne einfach zu befestigen und zu installieren, können Sie einen leicht zugänglichen Ort ohne irgendwelche potenziellen Gefahren für die Installation auswählen.

Denken Sie daran, wie Sie mit dem Sat-Kabel vorbei ungehindert von der HUMAX Advanced-H40D zu Ihrem Digitalempfänger gelangen können. Die Antenne sollte sich nicht zu weit entfernt von Ihrem Satellitenempfänger befinden; ein mehr als 30 Meter langes Kabel kann zu einer Verschlechterung der Bildqualität führen.

Signal wird schlecht empfangen



Signal wird gut empfangen



Schritt 2 : Informationen überprüfen

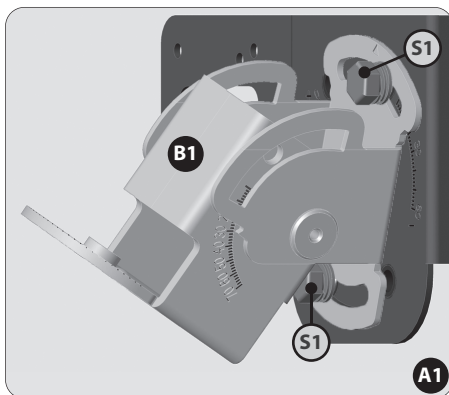
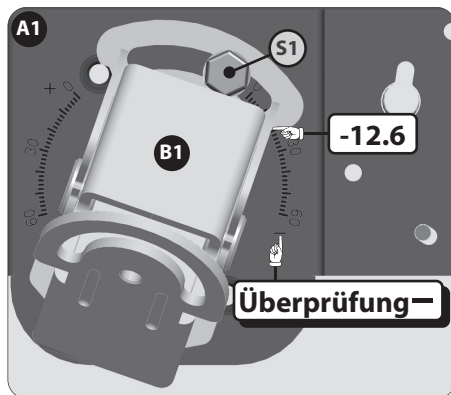
Um die Antenne zu installieren müssen Sie die richtige Schrägstellung, Höhe und den Azimuth-Winkel finden, wie in den letzten Seiten der Bedienungsanleitung angegeben. Wenn Sie Ihren Standort in der Tabelle nicht finden, nehmen Sie bitte den der Ihnen am nächsten ist.

Dieses Handbuch zeigt Ihnen das Installationsbeispiel zum Empfang des ASTRA1 Satelliten in der Region Brest in Frankreich. Die Winkelinformation ist wie folgt : Schrägstellung : -12.6° , Höhe : 30° , Azimuth : 149.6°

Schritt 3 : Teile zusammenfügen

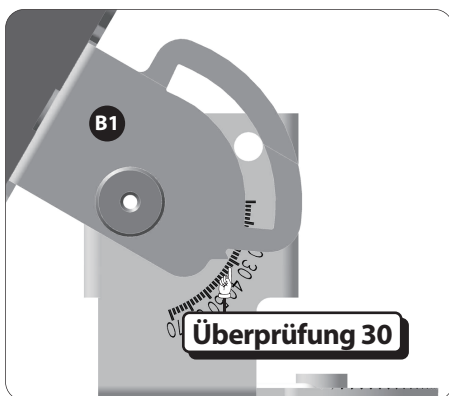
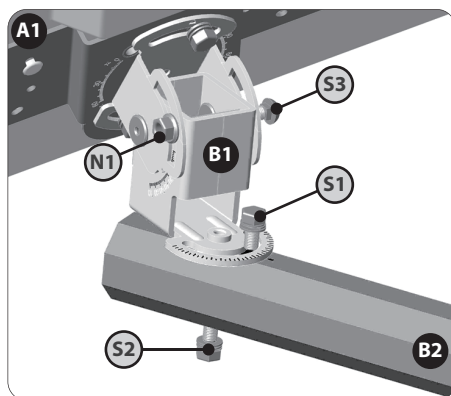
1) Fixieren Sie die Schrägstellung (Gelenk Winkel Verbindung und Antenne)

Gelenk Winkel Verbindung und Antenne auf Schrägstellung -12.6 stellen.



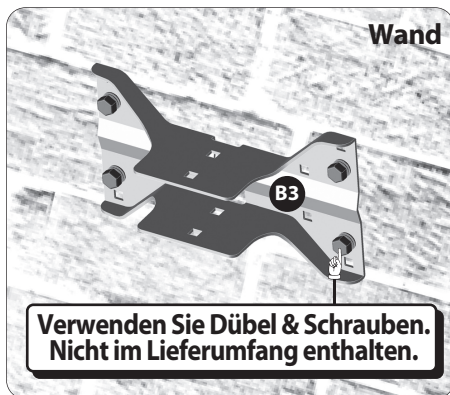
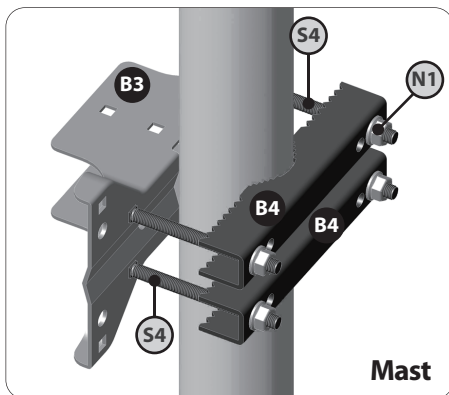
2) Höhe fixieren (Gelenk Antenne und Hauptstütze)

Gelenk Winkel Verbindung und Hauptstütze. Für die empfindliche Abstimmung und für den Azimuth-Winkel, fixieren Sie den Bolzen und die Mutter nicht zu fest.



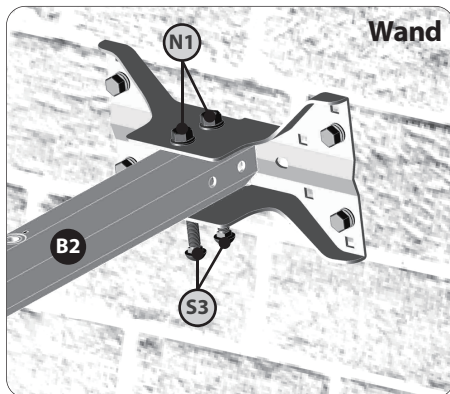
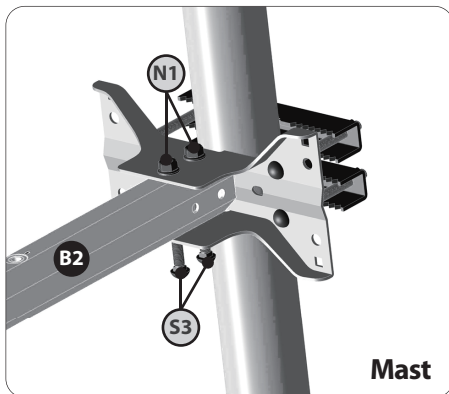
3) Montage der Wand- bzw. Masthalterung

Sie müssen die Fixier-Verbindung A(B3) unter Berücksichtigung des Installationsplatzes (Mastmontage, Wandmontage) wie nachstehend abgebildet fixieren. Versichern Sie sich, daß die fertig montierte Halterung in Richtung des Satelliten zeigt. Als Unterstützung für die Antenne, ziehen Sie die Mutter (N1) fest an. Für die Wandmontage kaufen Sie bitte die für die Wandmontage notwendigen Schrauben & Dübel.



4) Montage der Hauptstütze (B2)

Befestigen Sie die Hauptstütze (B2) wie abgebildet mit den 2 Schrauben (S3) und Muttern am Fixierhalter (B3). Ziehen Sie die Muttern (N1) fest an.



Schritt 4 : Verbinden der Antenne mit dem Digitalempfänger

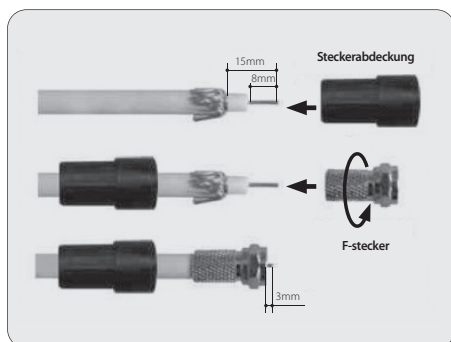
Sobald Sie die Antenne an einem prozessparallelen Ort und so installiert haben, wie Sie es wünschen, ist der nächste Schritt, alles miteinander zu verbinden.

Um Ihre Lieblings-Satellitenprogramme ansehen zu können, müssen Sie Ihre Satellitenantenne mittels eines Kabels mit einem Empfänger verbinden.

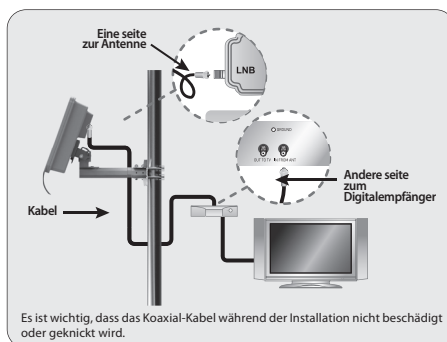
Das Kabel zwischen der Antenne und dem Satellitenempfänger sollte nicht länger als 30 Meter sein, da es den Signalempfang beeinträchtigt.

Der Gebrauch eines langen Kabels oder eines von schlechter Qualität und nicht-isolierter Buchsen kann zu einem Verlust des Signalpegels führen, verwenden Sie ein hochwertiges Sat-Kabel.

A) Wie präpariert man das Kabel?



B) So verbindet man Kabel mit Antenne und Digitelem Empfänger

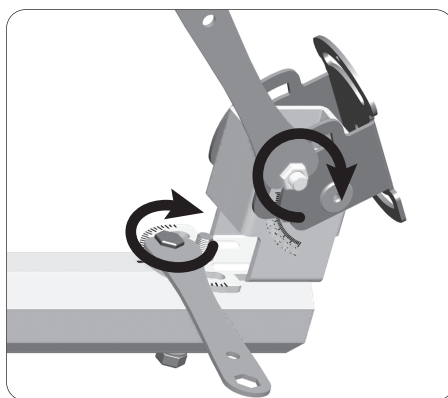
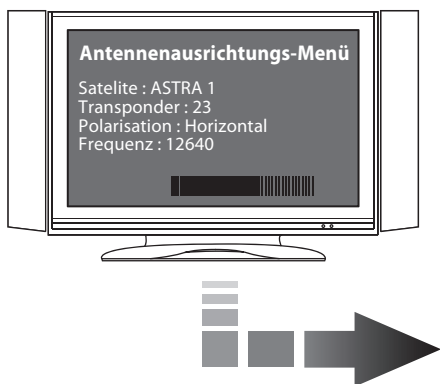


Schritt 5 : Feinabstimmung und Fixierung der Verbindung

Wenn die Feinabstimmung für den Signalempfang abgeschlossen ist, ziehen Sie den Bolzen und die Mutter fest.

Stellen Sie sicher, dass alle Schrauben gut angezogen sind, um zu verhindern, dass die Antenne ihre Position verändert.

Die Signalstärke und Qualität ist am TV Bildschirm zu sehen und verändert sich bzw. die Farbe während der Einstellungen und Bewegungen der Antenne um die richtigen Winkel zu finden (Azimuth-, Höhenwinkel) Der Level zeigt die Leistung des Signals und die Farbe ist die Signalempfangsqualität des ausgewählten Satelliten.



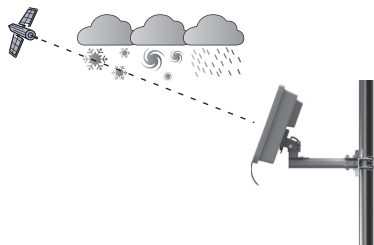
Störungsbehebungs-Prüfliste für die Erstinstallation

Wenn das Signal nicht gefunden wird, dann stellen Sie sicher, dass die Anweisungen in der Empfänger-Bedienungsanleitung und der Antennen-Bedienungsanleitung genau befolgt worden sind, dazu prüfen Sie bitte Folgendes :

- Stellen Sie sicher, dass sämtliche Kabelverbindungen intakt sind und jede Verbindung ordnungsgemäß sitzt/festgeschraubt ist.
- Untersuchen Sie das Innere jedes Kabelsteckers auf Schmutz oder einen möglichen Stecker-Gehäuseschluss/Schirmschluss.
- Überprüfen Sie anhand der Tabelle den Azimuthwinkel, den Erhebungspunkt und die Neigungswinkel.
- Stellen Sie sicher, dass die Neigungs- und Erhebungsausrichter korrekt auf ihre Skalen ausgerichtet sind. Verwenden Sie keine Unterlegscheibe oder Schraube als Bezugspunkt.
- Stellen Sie sicher, dass die Neigungsausrichtung keine andere ist als die für den Ort der Antenne empfohlene Einstellung.
- Entfernen Sie bestehende, für das Fernsehgerät spezifische Bauteile, wie etwa Fernsehverteiler, etc.; reduzieren Sie die Installation auf die Grundverbindungen, auf die in dieser Bedienungsanleitung eingegangen wird.
- Stellen Sie sicher, dass es keine Hindernisse gibt (Bäume, Gebäude, Fenster, Ecken oder Überhänge Ihres Daches, Ihres Körpers, Ihrer Hände) – das Signal geht nicht durch Blätter, Äste, Glas etc. hindurch.
- Ein Antennen-Kabel mit festem Kupferkern-Leiter wird dringend empfohlen, weil es einen wesentlich geringeren Gleichstrom-Spannungsabfall aufweist verglichen mit einem Antennen-Kabel mit einem kupferbeschichteten Stahlkern-Leiter.
- Ein Standard RG 59-Kabel verursacht einen zu hohen Gleichstrom- und Signal-Abfall; es kann für eine Weitergabe des Satellitensignals nicht verwendet werden. Hierfür muss ein RG 6-Koaxial-Kabel verwendet werden.
- Einige Wartungs-/ Ersatz-, Standard-Zusatzbauteile entsprechen möglicherweise nicht der Funktion, wie sie beworben worden sind. Möglicherweise funktionieren sie nicht oder verursachen zusätzliche Gleichstrom-Ausfälle und Signalamplituden-Dämpfungen. Entfernen Sie derartige Bauteile, gehen Sie zurück zu den Grundverbindungen, auf die in dieser Bedienungsanleitung eingegangen wird und führen Sie erneute Überprüfungen durch.
- Stellen Sie sicher, dass das Satellitenkabel mit der „Sat Ein“-Buchse verbunden ist.
- Wenn alles korrekt durchgeführt wird, das Signal aber noch immer nicht gefunden wird, dann ändern Sie bitte die Erhebungsausrichtung der Antenne etwas ($\pm 2^\circ$, dann $\pm 4^\circ$ abweichend von der geforderten Einstellung) und wiederholen das Verfahren.
- Stellen Sie sicher, daß Ihr Sat-Empfänger auf ein frei empfangbares Sat-Programm geschaltet ist.

Verlust des Signals / Regen-Verblassung

- Das Satellitensignal kann vorübergehend aufgrund von ungewöhnlich starkem Regenfall verloren gehen. Eine optimal ausgerichtete Antenne sowie der am kürzesten mögliche Kabelverlauf minimieren die Gefahr einer solchen „Regen-Verblassung“.
- Stellen Sie sicher, dass die Antenne sicher montiert ist, damit sie bei starkem Wind nicht ihre Ausrichtung verliert.
- Starke Schneeanhäufung auf der Antenne können zu einem schwächeren Satellitensignal führen; Schnee sollte so schnell wie möglich von der Antenne beseitigt werden.
- Wachsende Baumblätter in die Visierlinie der Antenne zum Satelliten hinein können zu graduellem Bildverlust führen.



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Loss of Signal / Rain Fade

Loss of Signal / Rain Fade	8
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What is HUMAX Advanced-H40D?

HUMAX Advanced-H40D is a Horn Array Type Satellite Antenna with Dual Linear Polarization, it can receive signal from major Satellites and would replace a normal former Parabolic Dish.

Small, discreet and easy to use, it can be installed in a few minutes.

HUMAX Advanced-H40D can be used for both free to air and encrypted (requiring a subscription with an operator) channel reception; it can also receive all High Definition channels with a superior image quality. For the use and installation, please read the following instructions and installation materials carefully.

Do you have a TV's at home more than one?



Then, take HUMAX built in multi LNB output

It is possible to watch 2 channels with HUMAX advanced-H40D2
Also, 4 channels with HUMAX advanced-H40D4

Safety Instructions

- Before using this product please read this manual carefully and follow exactly all installation, mounting & orientation instructions.
- All the instructions should be followed in order to avoid any technical problems.
- Any electric or magnetic field close to the HUMAX Advanced-H40D may cause a bad reception or even cut off the signal completely.
- Do not drill the plastic cover of the antenna, which seals the antenna from moisture.
- Handle the antenna with care as any impact will cause damage to the electronics.
- Do not open the cover, any attempt to repair by a non-qualified person can be dangerous and void the warranty.
- Any obstacle (buildings, trees, etc....) will block the reception of the signal from the satellite to the antenna.
- Do not paint or add any substance on the antenna cover, this will block the reception of the signal from the satellite.
- The cable between the antenna and the Satellite receiver should not exceed 30m as it will decrease the quality of the signal.
- The use non-isolated jacks will result in a loss of the signal level.
- Tighten all the screws of the antenna once you have finished the adjustments.
- This product contains one universal LNB, it is forbidden to add, change or modify the LNB.
- For more precise details on the above points or for any information, please ask your retailer or customer service.

Warning

Antennas improperly installed or installed to an inadequate structure are very susceptible to wind damage. This damage can be very serious or even life threatening. The owner and installer assumes full responsibility that the installation is structurally sound to support all loads (weight, wind & ice) and properly sealed against leaks. The manufacturer will not accept liability for any damage caused by a satellite system due to the many unknown variable applications.

Box Content

No	Symbol	Part name	Image	Quantity
1	A1	Antenna Body		1
2	B1	Angle Bracket		1
3	B2	Main Support		1
4	B3	Fix Bracket A		1
5	B4	Fix Bracket B		2
6	B5	Spanner		1
7	C1	Compass		1
8	S1	Screw M6x18 SEMS2		3
9	S2	Screw M6x50 SEMS2		1
10	S3	Round Head Square Neck Bolt M6x50		3
11	S4	Round Head Square Neck Bolt M6x75		4
12	N1	Flanged Nut M6		7

How to Install?

By following the instructions step by step, you can proceed easily to install HUMAX Advanced-H40D by yourself or with the help of a professional antenna installer.

Before installing your antenna, you check that HUMAX Advanced-H40D box contains all the items listed above in the 'Box Content'. In the event of any missing parts, please contact your distributor.

Step 1: Where to Install?

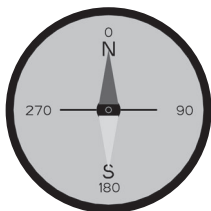
In order to receive a signal from the Satellite, HUMAX Advanced-H40D is to be installed in an open loop space (outside the house or the apartment), in the direction of the satellite towards the equator, for which, you will need a compass to exactly orient HUMAX Advanced-H40D toward the satellite.

Note

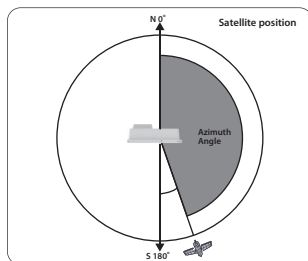
please take reference to the table of the Azimuth angles specified in the back pages of this manual.



< Compass >



< Azimuth Angle >



Note

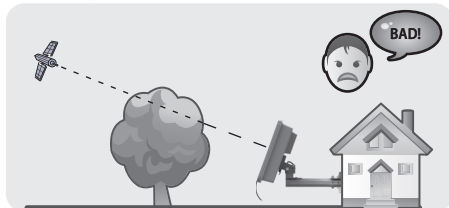
To ensure an accurate compass reading, stay away from large metal objects, specifically electrical cables and then make multiple readings.

Make sure that there are no obstacles in front of HUMAX Advanced-H40D which can decrease the signal reception quality, such as buildings or trees (you may keep in mind that trees will grow and may block the signal).

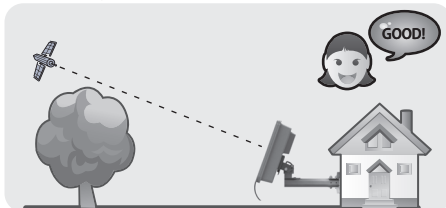
In order to be able to fix and install your antenna easily, you might choose an easily accessible place without any potential danger for installation.

Think about the way you might pass your cable in a discreet way from the HUMAX Advanced-H40D to your Set top Box. The antenna should not be too distant from your satellite receiver; a cable longer than 30 meters may decrease the quality of the signal.

Bad Quality Singnal Reception



Good Quality Singnal Reception



Step 2: Check Information

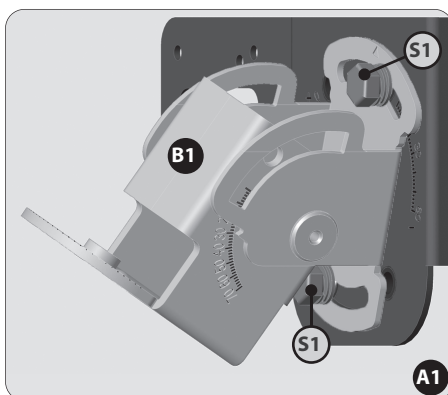
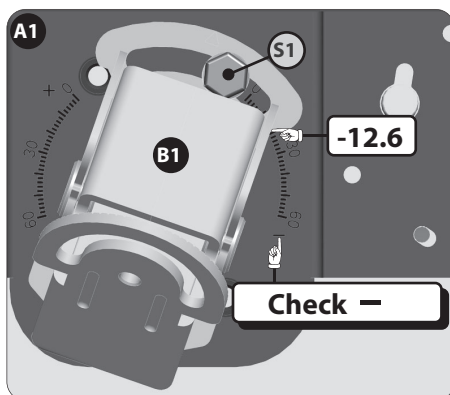
In order to install antenna, you need to find skew, elevation and azimuth angle by referring the table on the back of the manual. If you can't find your location, please refer to the information of the nearest place from your location.

This manual will show you the installation example to receive ASTRA1 satellite in Brest region of France. The angle information for Brest region is Skew : -12.6° , Elevation : 30° , Azimuth : 149.6°

Step 3: Part Assembly

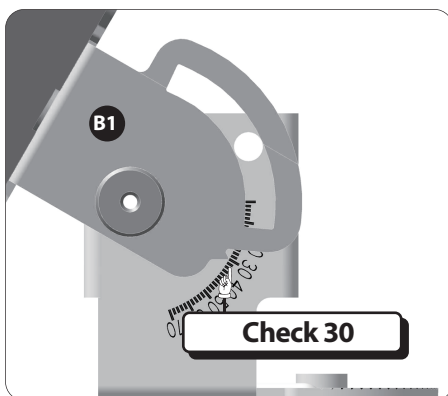
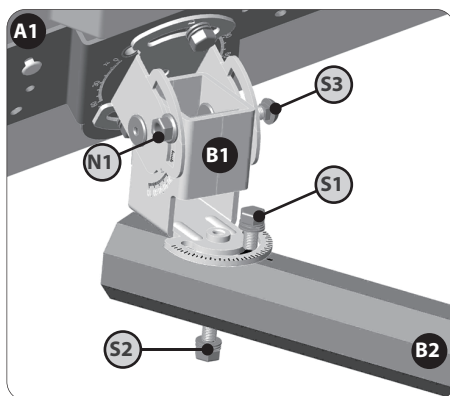
1) Fix Skew (Joint Angle Bracket and Antenna Body)

Joint Angle Bracket and Antenna Body by screw adjusting skew angle at -12.6



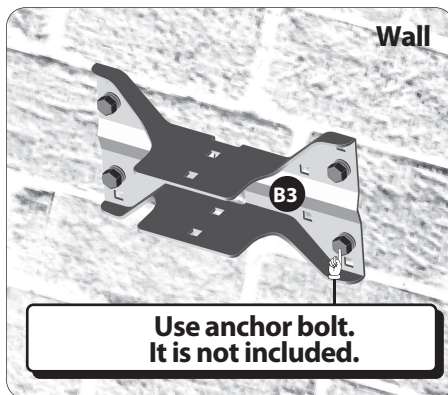
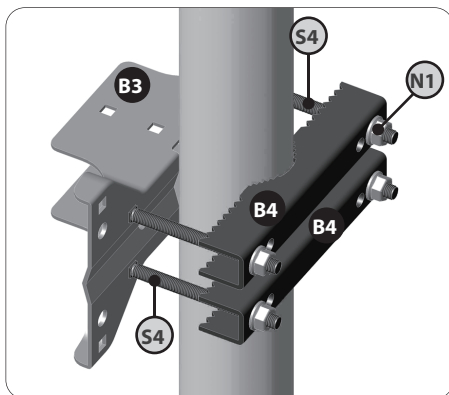
2) Fix Elevation (Joint Antenna Body and Main Support)

Joint Antenna Body and Main Support. For delicate adjustment elevation and azimuth angle, please don't fix bolt and nut tightly.



3) Installation of Fix Bracket A

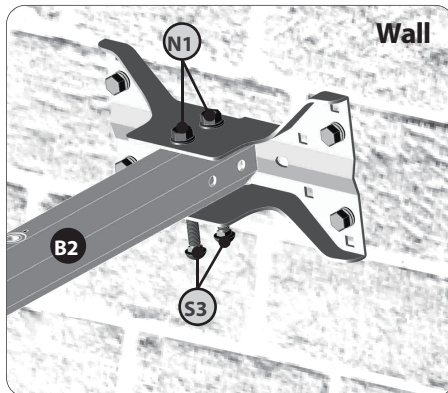
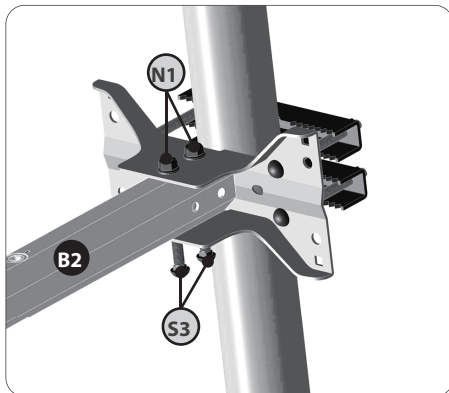
You need to install Fix Bracket A(B3) considering installation place (Clamp Type, Wall Mounting Type). Make sure that direction should be toward satellite. In order to support antenna, nut (N1) should be jointed as tightly as it can. Please purchase anchor bolt separately for wall mounting installation.



4) Joint Antenna Body and Fix Bracket A(B3)

Joint assembled Antenna Body and Fix Bracket A.

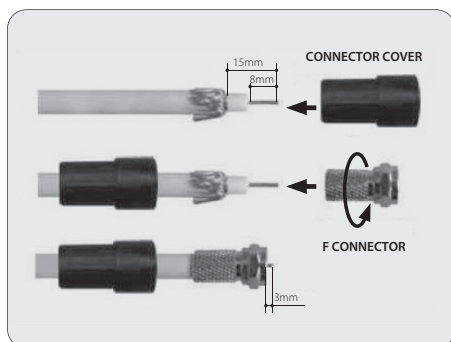
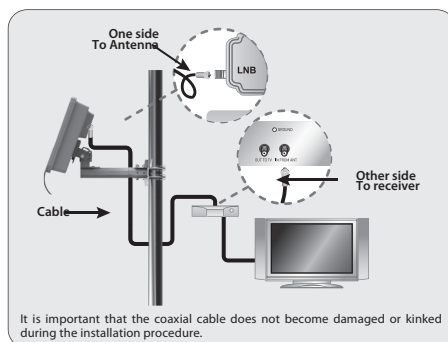
In order to support antenna, nut (N1) should be jointed as tightly as it can.



Step 4: Connecting the Antenna and the Set top box

Once you have installed the antenna in an open loop space and mounted the way you want it to be the next step is to connect it all together.

In order to be able to watch your favorite satellite programs, you need to connect your satellite antenna to a receiver by a cable. The cable between the antenna and the Satellite receiver should not exceed 30m as it will decrease the quality of the signal. The use of a long or bad quality cable and not isolated jacks can cause a loss of the signal level, it would be preferable to use an RG6 Coaxial cable (HF 17VATC or 19VATC cable), in order to minimize a signal loss.

A) How to prepare the cable?**B) How to connect the cable to the antenna and the set top box?****Step 5: Fine Tuning and Fix the Bracket**

Once fine tuning is completed for signal reception, please tighten bolt and nut.

Once all connected, turn on the TV and the Satellite receiver.

Select the Antenna Pointing Menu on your set top box.

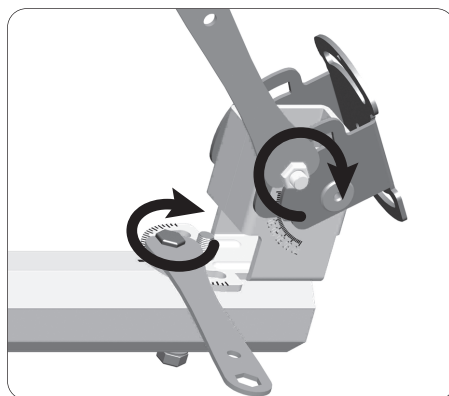
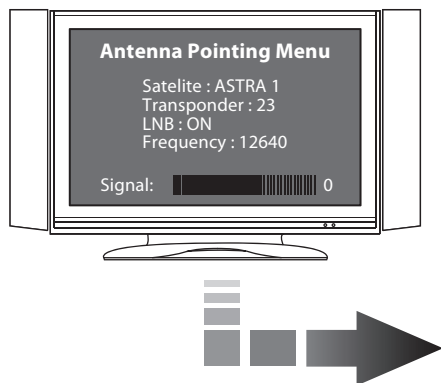
You can check signal level on your TV.

Do not forget to choose "LNB : ON"

You will need someone to stay in front of the TV to tell you when the signal is "good" while you're outside trying to adjust the antenna the best way possible.

The signal level and quality is indicated on the TV screen and will fluctuate and change colour according to the adjustment & movement of the antenna while you are pointing & finding (azimuth, elevation angle).

The level indicates the power of the signal and the colour is the signal reception quality from the chosen satellite.



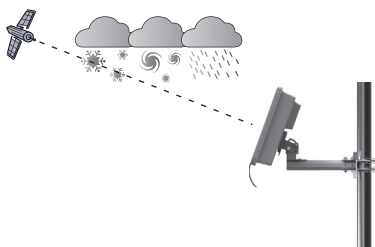
Troubleshooting Check List for Initial Installation

If the signal is not found, be sure the receiver user manual and the antenna user manual have been followed closely, check the following:

- Make sure all cable connections are correct and each connection is seated / tightened properly
- Inspect the inside of each cable connector for dirt or possible connector to case/shield short.
- Verify the Azimuth, Elevation and Skew angles for your location by ZIP code.
- Make sure the Skew and Elevation pointers are aligned correctly to the scales. Do not use washer or bolt as reference.
- Make sure the Skew adjustment is not changed from the recommended setting for the antenna location.
- Remove existing TV-specific components, such as TV splitter, etc; reduce the installation to the basic connections called out in this guide. Such components may not work with the satellite signal and they may be in the wall where you can't see them. When in doubt, Run RG6 cable directly to your receiver.
- Make sure there are no obstructions (trees, buildings, windows, corner or overhang of your roof, your body or hands) – the signal does not pass leaves, branches, glass, etc.
- RG 6 cable with solid copper center conductor is highly recommended because it has much lower DC voltage drop compared to RG 6 cable with a copper-coated, steel center conductor.
- Standard RG 59 cable causes too much DC drop and signal drop; it cannot be used to pass the satellite signal. RG 6 coaxial cable must be used.
- Some after-market, off-the-shelf add-on components may not be as advertised. They might not work or could cause additional DC drops and signal amplitude attenuation. Remove such components. Go back to the basic connections called out in this manual and re-verify.
- Make sure the satellite cable is connected to the "Sat In" jack, not the "Antenna In" jack, The "Antenna In" jack at the back of the receiver is for off-air antenna input or cable TV input.
- If all are done correctly but the signal is still not found. Change the Elevation adjustment of the antenna slightly ($\pm 2^\circ$, then $\pm 4^\circ$ from the called-for setting) and repeat the procedure.
- Make sure the Access Card from your receiver is fully inserted into the Access Card slot and oriented correctly.

Loss of Signal / Rain Fade

- The satellite signal may be lost temporarily due to unusually heavy rainfall. An optimally aligned antenna, along with the shortest possible cable run, minimizes the chances of "rain fade."
- Make sure the antenna is mounted securely to prevent it from being blown out of alignment in a heavy wind.
- Heavy snow accumulation on the antenna may reduce the satellite signal strength, snow should be swept away as soon as possible.
- Tree foliage growth into antenna's line-of-sight to the satellite may result in gradual loss of picture.



Contenu

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Perte de Signal / « Affaiblissement dû à la pluie »

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Qu'est-ce que HUMAX Advanced-H40D?

HUMAX Advanced-H40D est une Antenne Satellite à Double Polarisation Linéaire, elle peut capter le signal des satellites majeurs et remplace votre ancienne Parabole.

Petite, discrète et facile d'utilisation, elle peut être installée en quelques minutes et également être utilisée comme antenne portable pour toutes réceptions satellitaires.

HUMAX Advanced-H40D peut être utilisé aussi bien pour la réception de chaînes en clair qu'en crypter (ces dernières exigeant la souscription d'un abonnement auprès d'un opérateur) ; Elle peut aussi recevoir toutes les chaînes Haute Définition avec une qualité d'image supérieure.

Pour l'utilisation et l'installation, veuillez lire attentivement les instructions et les modalités d'installation du matériel suivantes.

Avez-vous plus d'une TV chez vous?



Alors essayez HUMAX avec sa sortie LNB multiple.

Regarder 2 chaînes est maintenant possible grâce à la HUMAX advanced-H40D2
Il est même possible de profiter de 4 chaînes grâce à la HUMAX advanced-H40D4

Consignes de Sécurité

- Avant d'utiliser ce produit, veuillez lire attentivement ce manuel et suivre à la lettre toutes les instructions d'installation, de montage et d'orientation.
- Les instructions doivent être respectées afin d'éviter tout problème technique.
- Tout champ électrique ou magnétique situé près du HUMAX Advanced-H40D peut entraîner une mauvaise réception voire même couper complètement le signal.
- Ne percez pas la protection en plastique de l'antenne qui la rend étanche et la protège de l'humidité.
- Manipulez l'antenne avec précaution car tout choc risque d'endommager l'électronique.
- N'ouvrez pas le cache de protection, toute tentative de réparation par une personne non qualifiée peut être dangereuse et entraîner l'annulation de la garantie.
- Tout obstacle (bâtiments, arbres, etc...) bloquera la réception du signal provenant du satellite vers l'antenne.
- Ne peignez pas et n'ajoutez aucune substance sur le cache de protection de l'antenne, cela bloquera la réception du signal provenant du satellite.
- Le câble reliant l'antenne au récepteur Satellite ne devrait pas excéder 30m car cela diminuerait la qualité du signal.
- L'utilisation de prise non isolée entraînera une perte du niveau de signal.
- Serrez toutes les vis de l'antenne lorsque vous avez terminé les réglages.
- Ce produit contient un Convertisseur de Fréquences Descendant universel (LNB), il est interdit d'en ajouter un autre, de le changer ou de le modifier.
- Pour obtenir des renseignements plus précis quant aux indications ci-dessus ou pour toute information, veuillez contacter votre détaillant ou le service après-vente.

AVERTISSEMENT

Les antennes installées de façon incorrecte ou sur une structure inadéquate sont fortement susceptibles d'entraîner des dommages. Ces dommages peuvent être très importants voire mortels. Le propriétaire et l'installateur assument l'entière responsabilité de l'installation sensée supporter toutes les charges (poids, vent et glace) et de l'étanchéité aux fuites. En raison de nombreuses demandes dont les tenants sont inconnus, le fabricant n'acceptera pas que sa responsabilité soit engagée pour tout dommage causé par un système satellite.

CONTENU DE LA BOITE

No	Symbole	Nom de la Piece	Image	Quantite
1	A1	Corps de l'Antenne		1
2	B1	Equerre de Support		1
3	B2	Support Principal		1
4	B3	Support de Fixation A		1
5	B4	Support de Fixation B		2
6	B5	Clé à Boulon		1
7	C1	Boussole		1
8	S1	Ancrage Hexagonal M6x18 SEMS2		3
9	S2	Ancrage Hexagonal M6x50 SEMS2		1
10	S3	Vis a Tete Bombée a Collet Carré M6x50		3
11	S4	Vis a Tete Bombée a Collet Carré M6x75		4
12	N1	Ecrou à Collet carré M6		7

Comment l'installer?

En suivant les instructions pas à pas, vous pouvez installer facilement HUMAX Advanced-H40D vous-même ou faire appel à un installateur d'antenne professionnel.

Avant d'installer votre antenne, assurez-vous que la boîte HUMAX Advanced-H40D contient toutes les pièces listées ci-dessus dans la rubrique « Contenu de la boîte ». En cas de pièce manquante, veuillez contacter votre

Etape 1 : Où l'installer?

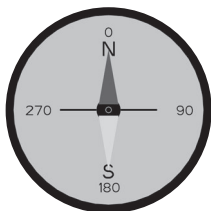
Afin de recevoir un signal provenant du Satellite, HUMAX Advanced-H40D doit être installé dans un espace à ciel ouvert (à l'extérieur de la maison ou de l'appartement), en direction du satellite vers le sud. Vous aurez besoin d'une boussole afin d'orienter avec exactitude HUMAX Advanced-H40D vers le satellite.

A noter

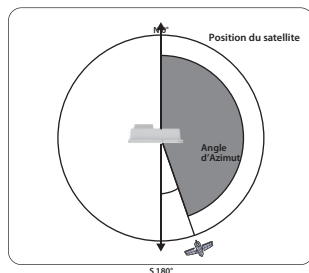
Veuillez vous référer à la table des angles d'Azimut que vous trouverez dans les dernières pages de ce manuel.



< Boussole >



< Angle d'Azimut >



A noter

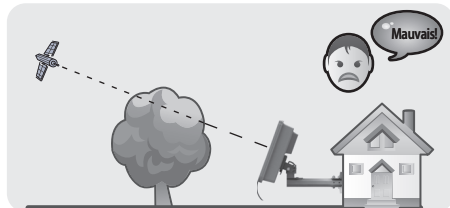
Afin d'assurer une lecture précise de la boussole, restez éloignés de grands objets métalliques, plus particulièrement des câbles électriques, et effectuez de nombreuses lectures.

Assurez-vous qu'il n'y ait aucun obstacle susceptible de diminuer la qualité de réception du signal devant HUMAX Advanced-H40D, tels que des bâtiments ou des arbres (gardez cependant à l'esprit que les arbres vont pousser et qu'ils pourraient alors bloquer le signal).

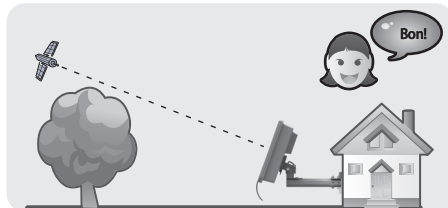
Afin d'être en mesure de fixer et d'installer facilement votre antenne, choisissez un endroit aisément accessible, sans danger potentiel pour l'installation.

Réfléchissez à la façon dont vous pourriez passer votre câble de la HUMAX Advanced-H40D jusqu'à votre décodeur discrètement. L'antenne ne doit pas être trop éloignée de votre récepteur satellite ; un câble de plus de 30 mètres pourrait diminuer la qualité du signal.

Réception du signal de Mauvaise Qualité



Réception du signal de Bonne Qualité



Etape 2 : Pour Information

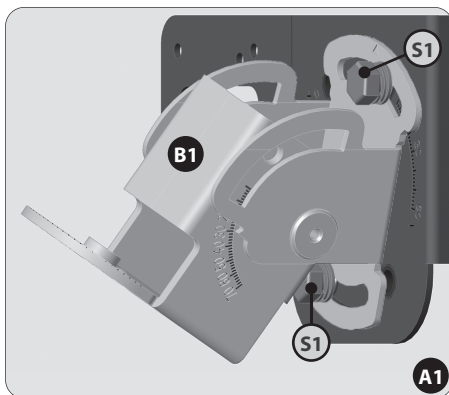
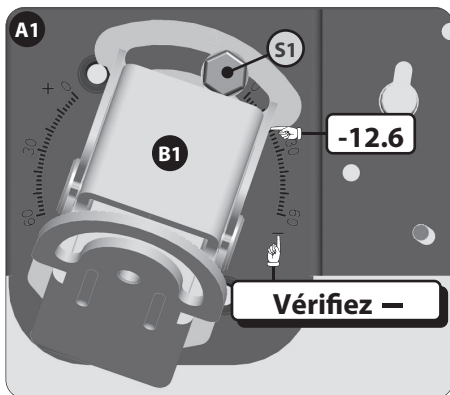
Afin d'installer correctement votre antenne, vous devez trouver les angles d'inclinaison, azimuth et élévation en se référant au tableau à la fin du manuel. Si vous ne trouvez pas dans la liste votre ville exacte, merci de choisir la ville la plus proche qui est citée dans le tableau.

Nous allons vous donner un exemple d'installation pour recevoir le Satellite ASTRA1 dans la région de Brest en France, les angles fournis selon le tableau sont, inclinaison : $-12,6^\circ$, Elévation : 30° et Azimut : $149,6^\circ$;

Etape 3 : Comment Assembler?

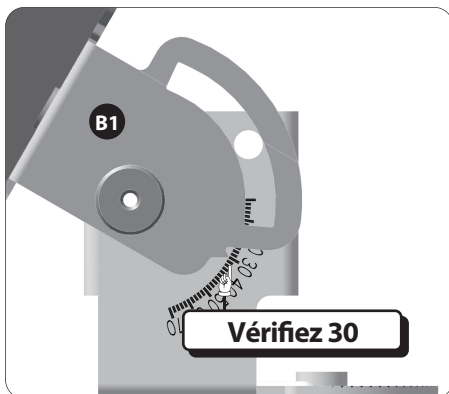
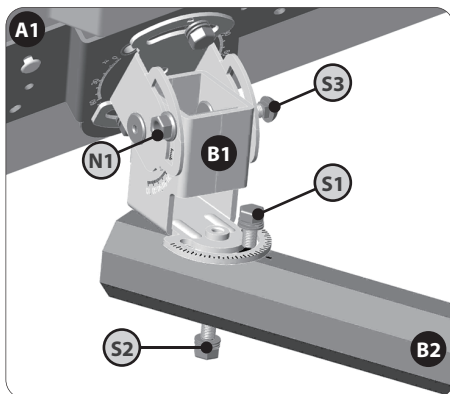
1) Fixer l'inclinaison (joindre le bras de fixation carre a l'arriere de l'antenne)

Visser avec la vis S3 le bras à l'antenne selon le schéma ci-dessous, tout en respectant bien l'angle d'inclinaison de votre ville (selon le tableau à la fin du manuel), dans notre exemple c'est $-12,6^\circ$.



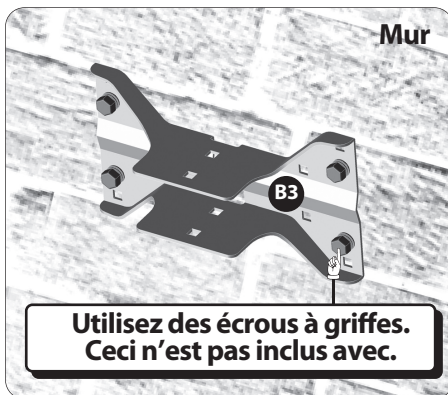
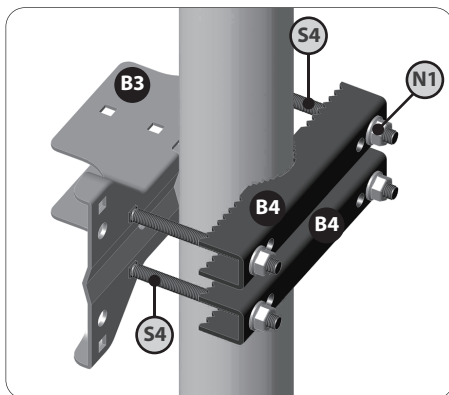
2) Fixer l'angle d'élévation (entre l'antenne et le support de fixation)

Soulever ou baisser délicatement l'antenne afin d'atteindre l'angle d'élévation voulu selon le schéma ci-dessous, ne pas fixer à ce stade encore avec la vis et l'écrou.



3) Installation du Bras de Fixation A

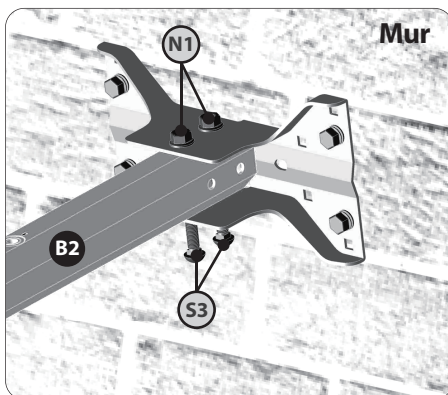
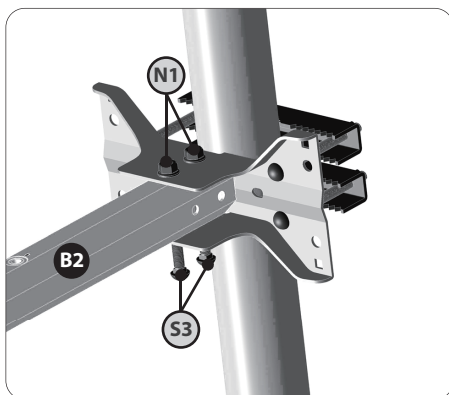
Selon l'emplacement de l'antenne et le type d'installation vous devez poser le bras de fixation A(B3 sur la figure) soit en type rambarde de balcon ou en accroche murale. Soyez sûr que vous êtes dans la bonne direction vers le satellite et qu'il n'y ait aucun obstacle. Afin de supporter le poids de l'antenne il va falloir bien visser les écrous (N1). Pour l'accroche murale des vis spéciaux seront nécessaires selon votre type de mur, merci de les acheter séparément.



**Utilisez des écrous à griffes.
Ceci n'est pas inclus avec.**

4) L'arrière bras et les Bras de fixation A(B3)

Monter l'ensemble selon le schéma ci-joint, afin de pouvoir tenir correctement l'antenne, il va falloir bien visser les écrous (N1) selon le schéma.

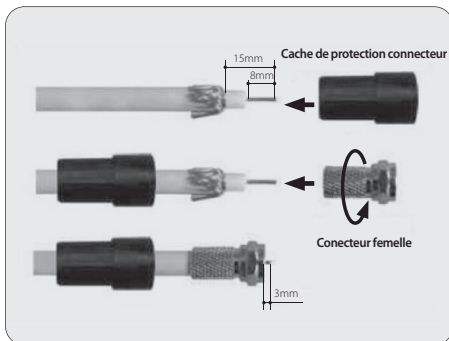


Etape 4 : Connexion de l'Antenne au Récepteur Satellite

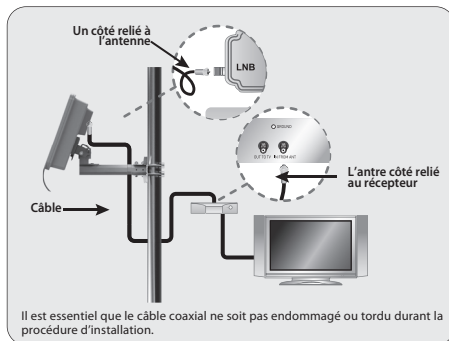
Après avoir installé l'antenne dans un espace à ciel ouvert et l'avoir monté de la façon dont vous le souhaitez, l'étape suivante consiste à connecter l'ensemble. Afin de pouvoir regarder vos programmes satellites préférés, vous devez connecter votre antenne satellite à un récepteur par un câble. Le câble reliant l'antenne au récepteur Satellite ne doit pas excéder 30m car cela diminuerait la qualité du signal.

L'utilisation d'un câble long ou de mauvaise qualité et de prise non isolée peut entraîner une perte du niveau de signal, il serait donc préférable d'utiliser un câble coaxial RG6 (câble HF 17 VATG ou 19 VATG) afin de minimiser la perte de signal.

A) Comment préparer le câble ?



B) Comment connecter le câble à l'Antenne et au Récepteur Satellite ?



Etape 5 : Menu Pointage de l'Antenne

Lorsque tout est connecté, allumez la TV et le récepteur Satellite. Sélectionnez le Menu Pointage de l'Antenne sur votre décodeur.

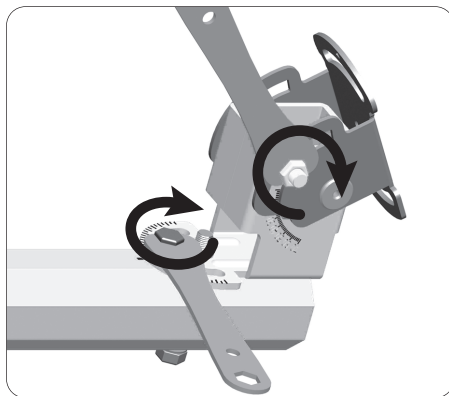
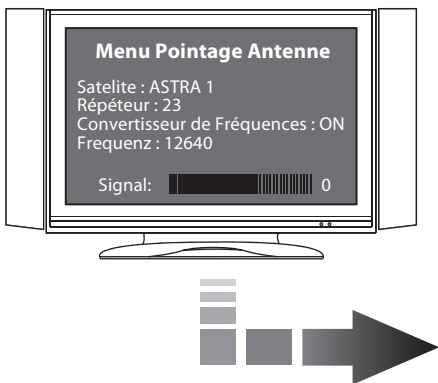
Cette image montre le niveau de signal et l'écran qui apparaîtra sur votre TV.

N'oubliez pas de mettre le Convertisseur de Fréquence Descendant sur ON.

Vous aurez besoin que quelqu'un reste devant la TV pour vous indiquer quand le signal sera « bon » tandis que vous serez à l'extérieur pour essayer de régler l'antenne le mieux possible.

Le niveau et la qualité du signal sont indiqués sur l'écran de TV ; ils fluctueront et changeront de couleur en fonction du réglage et du mouvement de l'antenne pendant que vous serez en train de pointer et de constater (azimut, angle d'élévation et angle de inclinaison).

Le niveau indique la puissance du signal et la couleur correspond à la qualité de réception du signal émanant du satellite choisi.



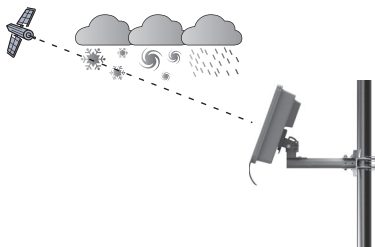
Liste de dépannage pour Installation Initiale

Si aucun signal n'est perçu, assurez-vous que les manuels d'utilisation du récepteur et de l'antenne ont été suivis à la lettre. Vérifiez ce qui suit :

- Assurez-vous que toutes les connections de câble sont correctes et que chaque connection est correctement placée et resserée.
- Vérifiez que l'intérieur de chaque connecteur de câble est propre.
- Vérifiez l'Angle d'Azimut, d'Élévation et d'Inclinaison correspondant à votre situation géographique par le biais du code de zone.
- Assurez-vous que le réglage d'Inclinaison n'est pas différent de celui recommandé en fonction de l'endroit où est fixée l'antenne.
- Assurez-vous que le réglage d'Inclinaison n'est pas différent de celui recommandé en fonction de l'endroit où est fixée l'antenne.
- Un câble RG6 doté d'un solide conducteur en central en cuivre est fortement recommandé car il entraîne une chute de tension continue plus faible que le câble RG6 cuivré, à conducteur central en acier.
- Un câble standard RG59 entraîne trop de tension continue et de baisse de signal, il ne peut être utilisé pour faire passer le signal satellite. Utilisez un câble coaxial RG6.
- Nous n'encourageons pas l'utilisation de composants complémentaires immédiatement disponibles sur certains marchés. Ils pourraient ne pas fonctionner ou entraîner des chutes supplémentaires de tension continue et l'atténuation de l'amplitude du signal.
- Otez de tels composants et revenez aux connexions de base stipulées dans ce manuel puis revérifiez.
- Otez les composants spécifiques à la TV existants, tel que le répartiteur TV, etc ; réduisez l'installation aux connexions de base stipulées dans ce guide. De tels composants ne fonctionneront pas avec le signal satellite et ils peuvent se trouver dans le mur où vous ne pouvez les voir. Dans le doute, branchez directement le câble RG6 à votre récepteur.
- Assurez-vous qu'il n'y ait pas d'obstacle (arbres, bâtiments, fenêtres, coins ou avancées du toit, votre corps ou vos mains) - le signal ne passe pas à travers les feuilles, les branches, le verre, etc.
- Assurez-vous que le câble du satellite est connecté à la "prise d'entrée" du satellite et non à la "prise d'entrée" de l'Antenne. La prise d'entrée de l'Antenne à l'arrière du récepteur sert à l'entrée de l'antenne hors émission ou à l'entrée du câble TV.
- Si tout a été effectué correctement et qu'aucun signal n'est capté, changez légèrement le réglage de l'angle d'élévation de l'antenne (+/- 2°, puis +/- 4° par rapport aux réglages exigés) et recommencez la procédure.

Perte de Signal / « Affaiblissement dû à la pluie »

- Le signal du satellite peut être temporairement perdu cause d'inhabituelles chutes de pluie. Une antenne alignée de façon optimale et un câble le plus court possible minimise le risque d'"Evanouissement dû à la pluie".
- Assurez-vous que l'antenne est montée solidement afin d'éviter qu'elle ne soit soufflée et sortie de son alignement par un vent fort.
- L'accumulation de neige sur l'antenne peut réduire la puissance du signal du satellite ; la neige doit être balayée dès que possible.
- La croissance du feuillage dans la ligne de visée de l'antenne vers le satellite peut entraîner une perte progressive d'image.



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Che cosa è HUMAX Advanced-H40D?

HUMAX Advanced-H40D è un'antenna satellitare piatta con doppia polarizzazione lineare; riceve il segnale dai maggiori satelliti e sostituisce il disco della vecchia parabola. Piccola, discreta e facile da usare, si installa in pochi minuti e si può utilizzare come antenna portatile per le ricezioni satellitari. HUMAX Advanced-H40D è utilizzabile per la ricezione di trasmissioni in chiaro e criptate (che richiedono un abbonamento con l'operatore); riceve inoltre i canali HD. Per l'utilizzo e l'installazione, leggere e seguire attentamente le istruzioni del manuale.

Usate piu di due televisioni a casa?



Guardare 2 canali e' possibile attraverso HUMAX advanced-H40D2
Guardare anche 4 canali e' possibile attraverso HUMAX advanced-H40D4

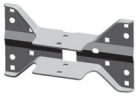
Sicurezza

- Prima di utilizzare questo prodotto, leggere attentamente il presente manuale e seguire esattamente le istruzioni di installazione, montaggio e orientamento.
- Vi preghiamo di seguire le seguenti istruzioni per evitare ogni problema tecnico.
- Qualsiasi campo magnetico vicino al HUMAX Advanced-H40D può causare una cattiva ricezione del segnale o addirittura comprometterla del tutto.
- Non perforare l'involucro di plastica dell'antenna, che la sigilla contro l'umidità.
- Maneggiare l'antenna con cura: qualsiasi urto può danneggiare i componenti elettronici.
- Non togliere l'involucro: qualsiasi tentativo di riparazione da parte di personale non qualificato può essere pericoloso e annullare la garanzia.
- Ostacoli come costruzioni, alberi ecc. possono bloccare la ricezione del segnale dal satellite.
- Non dipingere o aggiungere altre sostanze sull'antenna, poiché possono impedire la ricezione del segnale dal satellite.
- Il cavo tra l'antenna e il ricevitore satellitare non deve superare i 30 m, pena la diminuzione della qualità del segnale.
- L'utilizzo di un jack non isolato può determinare perdita del segnale.
- Una volta effettuata la regolazione, stringere bene tutte le viti dell'antenna.
- Questo prodotto contiene un solo LNB universale ed è formalmente vietato aggiungere, cambiare o modificare l'LNB.
- Per maggiori dettagli sui punti precedenti o per qualsiasi altra informazione contattare il rivenditore o direttamente il servizio clienti.

ATTENZIONE

Le antenne non correttamente installate o installate in una struttura inadeguata sono facilmente danneggiabili dal vento. Tali danni possono essere molto seri o addirittura mortali. Il proprietario e l'installatore sono pienamente responsabili del fatto che l'installazione sia strutturalmente adeguata per sopportare tutti i carichi (peso, vento e gelo) e adeguatamente sigillata contro dispersioni. Il costruttore non si riterrà responsabile per qualsiasi tipo di danno causato dal sistema satellitare dovuto alle molteplici e variabili applicazioni.

CONTENUTO DELLA CONFEZIONE

N.	Simbolo	Nome parte	Immagine	Quantità
1	A1	Antenna		1
2	B1	Staffa angolare		1
3	B2	Supporto principale		1
4	B3	Staffa fissaggio A		1
5	B4	Staffa fissaggio B		2
6	B5	Chiave		1
7	C1	Bussola		1
8	S1	Vite M6x18 SEMS2		3
9	S2	Vite M6x50 SEMS2		1
10	S3	Dado testa quadra M6x50		3
11	S4	Dado testa quadra M6x75		4
12	N1	Dado M6		7

Installarla

Seguendo passo a passo le istruzioni è possibile installare con facilità HUMAX Advanced-H40D da soli o con l'aiuto di un antennista professionista.

Prima di installare l'antenna verificare che la scatola di HUMAX Advanced-H40D contenga tutti gli elementi citati nel "Contenuto della confezione". Nell'eventualità di parti mancanti, contattare il rivenditore.

Fase 1: Dove installarla?

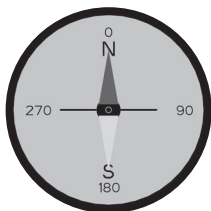
Per ricevere il segnale dal satellite, HUMAX Advanced-H40D va installata in uno spazio aperto (fuori casa/appartamento) nella direzione del satellite, verso l'equatore (il sud). Sarà necessaria la bussola per orientare esattamente HUMAX Advanced-H40D nella giusta direzione.

Nota

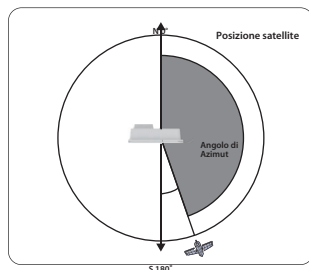
far riferimento alla tavola degli angoli di Azimut nell'ultima pagina del presente manuale.



< Bussola >



< Angolo di Azimut >



Nota

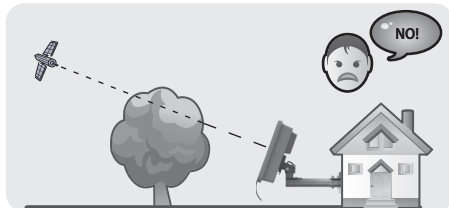
per garantire un'accurata lettura della bussola, la preghiamo di tenersi lontani da grandi oggetti di metallo, nello specifico cavi elettrici, ed effettuare letture a più riprese.

Verificare che non vi siano ostacoli davanti a HUMAX Advanced-H40D che possano diminuire la qualità della ricezione del segnale quali: costruzioni, alberi o altro (ricordarsi che gli alberi normalmente crescono e possono bloccare il segnale).

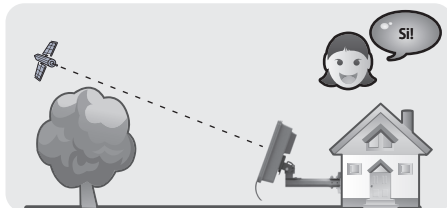
Per poter fissare e installare facilmente l'antenna si deve scegliere un'ubicazione accessibile e priva di potenziali pericoli per l'installazione.

È necessario valutare a come far passare il cavo in modo discreto da HUMAX Advanced-H40D fino al Set top Box (decodificatore). L'antenna non va messa troppo distante dal ricevitore satellitare; un cavo lungo più di 30 m. diminuisce la qualità del segnale.

Cattiva qualità del segnale



Buona qualità del segnale



Fase 2: informazioni preliminari

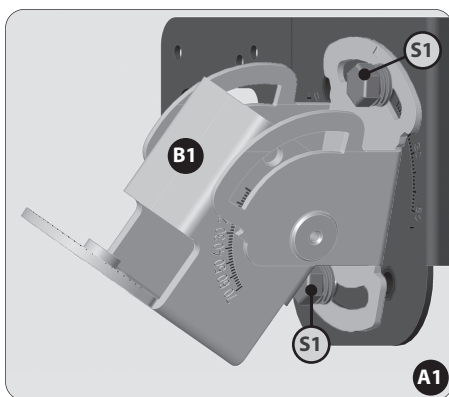
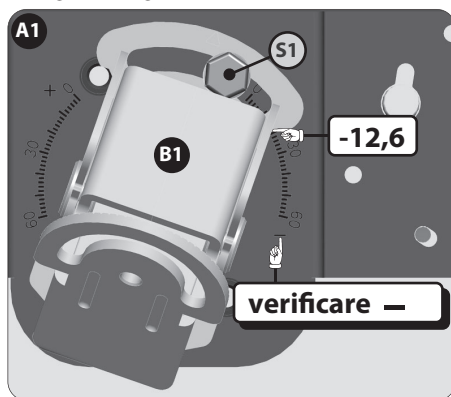
Per installare l'antenna, è necessario trovare skew (Sk), elevazione (El) e angolo di azimut (Az). Vedi i parametri contenuti nella tabella in appendice alla fine del manuale. Se non trovi la tua località, si prega di fare riferimento alle informazioni della città più vicina alla vostra posizione.

Questo manuale vi mostra l'esempio di installazione per ricevere via satellite Astra1 nella regione di Brest in Francia. I parametri di puntamento per la regione di Brest sono: Skew: $-12,6^\circ$, Elevazione: 30° , Azimut: $149,6^\circ$

Fase 3: Assemblaggio

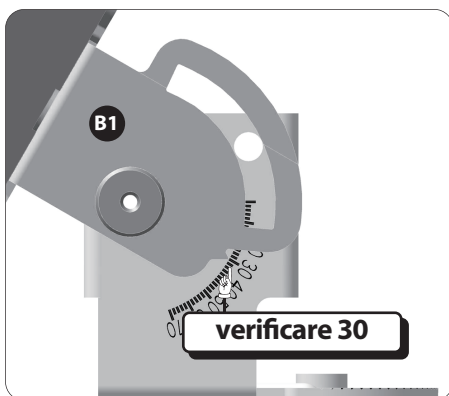
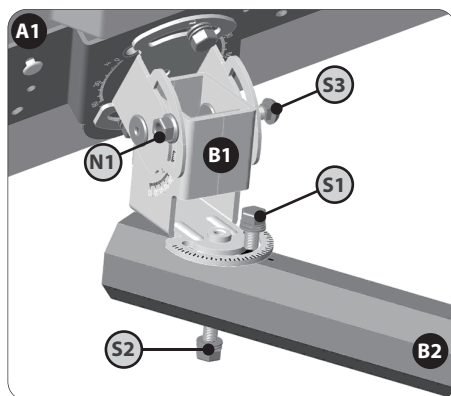
1) Regolare lo Skew (staffa B1 sul corpo dell'antenna A1)

Regolare l'angolo di inclinazione a $-12,6$ e fissare i dadi.



2) Regolare l'Elevazione (unire il corpo antenna con il supporto principale)

Per una regolazione fine dell'elevazione e dell'angolo di azimuth si prega di non fissare subito dado e bullone strettamente.



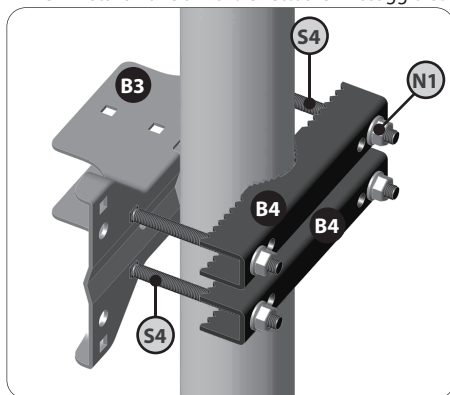
3) Installazione di una staffa fissa

È necessario installare la staffa di ancoraggio A(B3 nella figura) in base al tipo di installazione (montaggio su palo o balcone, montaggio a parete).

Assicurarsi che la direzione sia verso il satellite.

Al fine di sostenere l'antenna, il dado (N1), dovrebbe essere stretto quanto possibile.

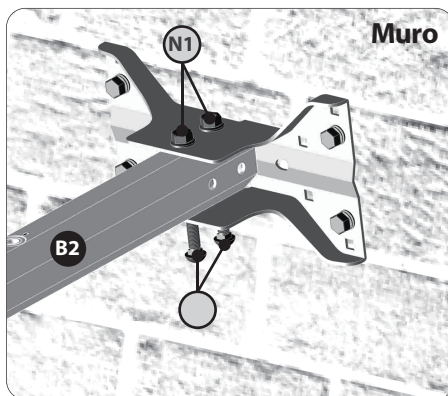
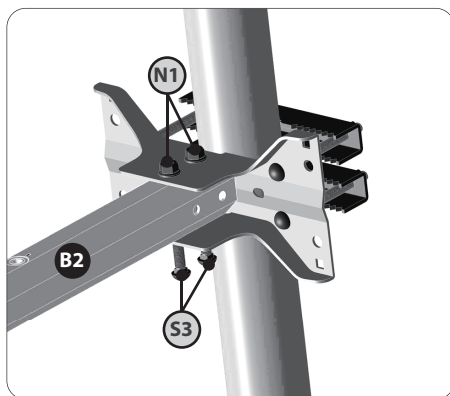
Per l'installazione a muro effettuare il fissaggio con appositi tasselli (non forniti)



4) Fissaggio corpo antenna alla staffa A(B3)

Fissare la staffa principale dell'antenna B2 alla staffa B3.

Stringere i dadi (N1) quanto possibile.

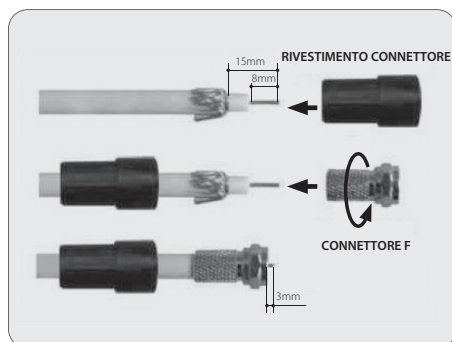


Fase 4: Collegamento dell'antenna e del Set top box

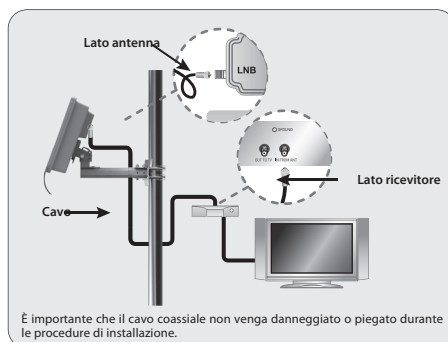
Dopo aver installato l'antenna in uno spazio aperto e averla montata nella maniera prescelta, procedere ad effettuare tutti i collegamenti.. Per poter vedere i propri programmi preferiti, collegare l'antenna satellitare al ricevitore tramite cavo. Il cavo tra l'antenna e il ricevitore satellitare non deve superare i 30m, pena la diminuzione della qualità del segnale.

Un cavo troppo lungo o di cattiva qualità e jack non isolati possono comportare una perdita del livello del segnale; è preferibile utilizzare un cavo coassiale RG6 (cavo HF 17VATC o 19VATC) per ridurre al minimo la perdita di segnale..

A) Come preparare il cavo?



B) Come collegare il cavo all'antenna e al set top box ?



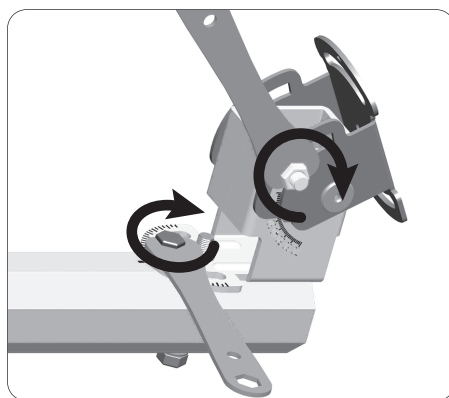
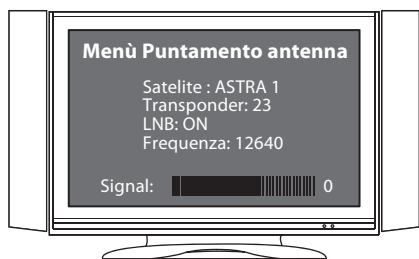
Fase 5: Regolazione fine e fissaggio finale staffe

Una volta completata la messa a punto per la ricezione del segnale, si prega di avvitare bulloni e dadi.

E' possibile verificare il livello e la qualità del segnale tramite il decoder direttamente sullo schermo del televisore.

Il livello indica la potenza del segnale e il colore indica la qualità di ricezione del segnale del satellite scelto.

Durante la fase di regolazione dell'antenna (azimuth, elevazione) tali livelli variano in base ai movimenti dell'antenna.



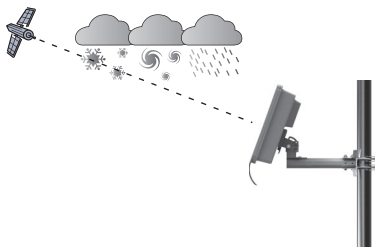
Individuazione ed eliminazione di problemi alla prima installazione

Se il segnale non viene trovato e i manuali utente antenna e utente ricevitore sono stati seguiti adeguatamente, effettuare i seguenti controlli :

- Verificare che tutte le connessioni dei cavi siano corrette e che ogni connessione sia correttamente alloggiata/fissata.
- Ispezionare l'interno di ogni connettore di cavo per spolverarlo o controllare che non vi siano possibili corti circuiti tra l'interno del connettore e la copertura.
- Verificare angoli di Azimut, Elevazione e Inclinazione in base al proprio CAP.
- Verificare che i puntatori di Inclinazione e Elevazione siano correttamente allineati alle scale. Non utilizzare rondelle o dadi come riferimento.
- Verificare che la regolazione di Inclinazione non sia cambiata rispetto all'impostazione raccomandata per la posizione dell'antenna.
- Il cavo RG6 con conduttore centrale solido in rame è caldamente raccomandato perché ha una più bassa caduta di tensione DC rispetto ai cavi RG 6 con conduttore in acciaio rivestito in rame.
- Il cavo RG 59 standard causa eccessiva caduta di tensione DC e perdita di segnale; non può essere utilizzato per il segnale satellitare. Va utilizzato un cavo coassiale RG 6.
- Alcuni componenti di ricambio e accessori esistenti in commercio potrebbero avere caratteristiche diverse da quelle pubblicizzate. Potrebbero non funzionare o causare ulteriori cadute di tensione e attenuazioni dell'ampiezza del segnale.
- Eliminare tali componenti, limitarsi alle connessioni base specificate nel manuale e riverificare.
- Rimuovere i componenti specifici preesistenti della TV, come splitter ecc.
- Lasciare solo i collegamenti base descritti in questa guida. Tali componenti possono non funzionare con il segnale satellitare e possono essere invisibili poiché a muro. In caso di dubbio, far passare il cavo RG 6 direttamente al ricevitore.
- Verificare l'assenza di ostacoli (alberi, costruzioni, finestre, angoli o sporgenze del tetto, il proprio corpo o mani) – il segnale non oltrepassa foglie, rami, vetro ecc.
- Verificare che il cavo satellitare sia connesso alla presa "Sat-In" e non alla presa "Antenna-In". La presa "Antenna In" sul retro del ricevitore è per l'ingresso antenna terrestre o TV via cavo.
- Se tutto è stato eseguito correttamente, ma il segnale è ancora assente, cambiare leggermente la regolazione di elevazione dell'antenna ($\pm 2^\circ$, poi $\pm 4^\circ$ rispetto a quanto richiesto per l'impostazione) e ripetere la procedura.
- Verificare che la scheda di accesso del ricevitore sia completamente inserita nell'apposito slot e correttamente orientata.

Perdita di segnale / attenuazione da pioggia

- Il segnale satellitare può essere temporaneamente assente a causa di pioggia particolarmente violenta. Un ottimale allineamento dell'antenna, associato a un cavo il più corto possibile, minimizza l'attenuazione da pioggia.
- Verificare che l'antenna sia montata stabilmente per evitare che possa perdere l'allineamento in caso di vento forte.
- Un'importante caduta di neve che si accumula sull'antenna può ridurre la potenza del segnale; va eliminata al più presto.
- La crescita di foglie sulla linea di veduta dell'antenna può generare una graduale perdita dell'immagine.



Flat Satellite antenna table of Alignment angle

Austria

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat	ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 9	SES 5 / ASTRA 4	Thor / Intelsat 10-02	Eutelsat 5W	Hispasat
		42.0° East	31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	9.0° East	4.8° East	0.8° West	5.0° West	30.0° West
Amstetten N 48.1, E 14.9	Az	145.5	158.2	162.4	168.5	174.2	178.5	182.6	186.6	193.5	200.9	205.9	233.2
	El	28.9	32.5	33.3	34.1	34.6	34.8	34.7	34.6	33.9	32.6	31.5	20.1
	Sk	-22.2	-7.4	-4.7	-0.6	3.2	-1.0	1.7	4.4	8.9	13.8	17.0	32.4
Bad Ischl N 47.7, E 13.6	Az	143.8	156.4	160.6	166.7	172.5	176.8	180.8	184.9	191.8	199.4	204.5	232.2
	El	28.7	32.5	33.4	34.4	34.9	35.2	35.2	35.1	34.5	33.4	32.3	21.1
	Sk	-23.4	-8.6	-5.9	-1.9	1.9	-2.2	0.6	3.3	7.9	12.9	16.2	32.1
Baden N 48.0, E 16.2	Az	147.0	159.8	164.0	170.2	176.0	180.3	184.3	188.3	195.2	202.6	207.6	234.5
	El	29.5	32.9	33.7	34.4	34.8	34.9	34.8	34.5	33.8	32.4	31.2	19.4
	Sk	-21.4	-6.4	-3.6	0.5	4.3	0.2	2.9	5.6	10.1	14.9	18.0	33.0
Bludenz N 47.2, E 9.8	Az	139.4	151.5	155.6	161.6	167.3	171.6	175.6	179.7	186.8	194.6	199.8	228.6
	El	27.4	31.8	32.8	34.1	35.0	35.4	35.7	35.8	35.5	34.7	33.9	23.5
	Sk	-26.3	-11.9	-9.3	-5.4	-1.6	-5.7	-3.0	-0.2	4.6	9.8	13.3	30.7
Bregenz N 47.5, E 9.7	Az	139.4	151.5	155.6	161.6	167.2	171.5	175.5	179.6	186.6	194.4	199.6	228.4
	El	27.1	31.4	32.5	33.8	34.6	35.1	35.3	35.4	35.2	34.4	33.6	23.3
	Sk	-26.1	-11.8	-9.2	-5.3	-1.6	-5.7	-3.0	-0.3	4.5	9.7	13.1	30.3
Dornbirn N 47.4, E 9.8	Az	139.5	151.6	155.7	161.7	167.3	171.6	175.7	179.7	186.8	194.5	199.7	228.5
	El	27.2	31.6	32.6	33.9	34.8	35.2	35.4	35.5	35.3	34.5	33.6	23.4
	Sk	-26.1	-11.8	-9.2	-5.3	-1.5	-5.7	-2.9	-0.2	4.6	9.8	13.2	30.5
Eisenstadt N 47.5, E 16.5	Az	147.1	160.0	164.3	170.5	176.3	180.7	184.7	188.8	195.7	203.2	208.1	235.0
	El	30.1	33.5	34.2	35.0	35.4	35.4	35.3	35.1	34.2	32.8	31.5	19.5
	Sk	-21.5	-6.3	-3.5	0.6	4.5	0.5	3.2	5.9	10.5	15.4	18.6	33.6
Graz N 47.1, E 15.4	Az	145.6	158.5	162.8	169.0	174.8	179.2	183.3	187.4	194.3	201.9	206.9	234.2
	El	30.0	33.6	34.4	35.3	35.7	35.9	35.8	35.6	34.9	33.5	32.3	20.4
	Sk	-22.6	-7.5	-4.6	-0.5	3.5	-0.6	2.2	5.0	9.7	14.7	18.0	33.5
Kapfenberg N 47.4, E 15.3	Az	145.7	158.5	162.7	168.9	174.7	179.1	183.1	187.2	194.1	201.7	206.7	233.9
	El	29.7	33.3	34.1	34.9	35.4	35.5	35.5	35.3	34.6	33.3	32.0	20.3
	Sk	-22.5	-7.4	-4.6	-0.5	3.4	-0.6	2.1	4.9	9.5	14.5	17.7	33.2
Klagenfurt N 46.4, E 14.2	Az	143.9	156.7	161.0	167.3	173.1	177.5	181.7	185.8	192.9	200.6	205.7	233.3
	El	30.1	34.0	34.9	35.8	36.4	36.6	36.6	36.5	35.8	34.6	33.4	21.5
	Sk	-24.0	-8.8	-6.0	-1.8	2.3	-1.7	1.1	4.0	8.8	14.0	17.4	33.6
Krems N 48.4, E 15.6	Az	146.4	159.2	163.4	169.5	175.2	179.5	183.5	187.5	194.3	201.7	206.7	233.8
	El	28.9	32.3	33.1	33.9	34.3	34.4	34.4	34.2	33.5	32.2	31.0	19.5
	Sk	-21.5	-6.7	-4.0	0.0	3.8	-0.4	2.3	5.0	9.5	14.2	17.4	32.4
Kufstein N 47.6, E 12.2	Az	142.2	154.6	158.8	164.9	170.6	174.9	178.9	183.0	190.0	197.6	202.7	230.8
	El	28.2	32.2	33.1	34.2	34.9	35.2	35.3	35.3	34.8	33.8	32.8	21.9
	Sk	-24.4	-9.8	-7.1	-3.1	0.7	-3.5	-0.7	2.0	6.7	11.8	15.1	31.5
Linz N 48.3, E 14.3	Az	144.9	157.5	161.7	167.8	173.5	177.7	181.7	185.8	192.6	200.1	205.1	232.6
	El	28.4	32.1	32.9	33.8	34.3	34.5	34.5	34.4	33.8	32.6	31.5	20.3
	Sk	-22.5	-7.8	-5.1	-1.1	2.7	-1.5	1.2	3.8	8.4	13.2	16.4	31.9
Loeben N 47.4, E 15.1	Az	145.4	158.2	162.5	168.7	174.4	178.8	182.9	186.9	193.9	201.4	206.4	233.7
	El	29.6	33.2	34.0	34.9	35.4	35.5	35.5	35.3	34.6	33.3	32.1	20.4
	Sk	-22.6	-7.6	-4.8	-0.7	3.2	-0.8	1.9	4.7	9.3	14.3	17.5	33.1
Saalfelden N 47.4, E 12.9	Az	142.9	155.4	159.6	165.7	171.5	175.8	179.9	183.9	190.9	198.6	203.7	231.6
	El	28.6	32.6	33.5	34.6	35.2	35.4	35.5	35.5	35.0	33.9	32.8	21.6
	Sk	-24.1	-9.4	-6.6	-2.6	1.2	-2.9	-0.1	2.7	7.4	12.5	15.8	32.0
Salzburg N 47.8, E 13.1	Az	143.3	155.8	160.0	166.1	171.8	176.1	180.1	184.2	191.1	198.7	203.8	231.6
	El	28.4	32.3	33.2	34.2	34.8	35.0	35.1	35.0	34.5	33.4	32.3	21.3
	Sk	-23.7	-9.0	-6.3	-2.3	1.5	-2.6	0.1	2.8	7.5	12.5	15.7	31.8
Sankt Pölten N 48.2, E 15.6	Az	146.3	159.1	163.3	169.5	175.2	179.5	183.5	187.5	194.4	201.8	206.8	233.9
	El	29.1	32.5	33.3	34.1	34.5	34.7	34.6	34.4	33.7	32.4	31.2	19.6
	Sk	-21.7	-6.8	-4.0	0.0	3.8	-0.4	2.3	5.0	9.5	14.3	17.5	32.6
Steyr N 48.1, E 14.4	Az	144.9	157.5	161.7	167.9	173.6	177.9	181.9	185.9	192.8	200.3	205.3	232.8
	El	28.7	32.3	33.2	34.1	34.6	34.7	34.7	34.6	34.0	32.8	31.6	20.4
	Sk	-22.6	-7.8	-5.1	-1.1	2.7	-1.4	1.3	3.9	8.5	13.4	16.6	32.1
Stockerau N 48.3, E 16.3	Az	147.2	160.0	164.2	170.4	176.1	180.4	184.4	188.4	195.2	202.6	207.6	234.5
	El	29.2	32.6	33.4	34.1	34.5	34.5	34.5	34.2	33.4	32.1	30.8	19.2
	Sk	-21.1	-6.2	-3.4	0.6	4.4	0.3	2.9	5.6	10.1	14.8	17.9	32.8
Tauern N 47.3, E 12.7	Az	142.6	155.2	159.3	165.5	171.2	175.5	179.6	183.7	190.7	198.4	203.5	231.5
	El	28.6	32.6	33.6	34.6	35.3	35.5	35.6	35.6	35.1	34.0	33.0	21.8
	Sk	-24.3	-9.6	-6.9	-2.8	1.0	-3.0	-0.3	2.5	7.2	12.3	15.7	32.0
Villach N 46.6, E 13.9	Az	143.7	156.4	160.7	166.9	172.7	177.1	181.2	185.4	192.4	200.1	205.2	233.0
	El	29.8	33.7	34.6	35.6	36.2	36.4	36.4	36.3	35.7	34.4	33.3	21.6
	Sk	-24.0	-9.0	-6.2	-2.0	2.0	-2.0	0.9	3.7	8.5	13.7	17.0	33.3
Wels N 48.2, E 14.0	Az	144.5	157.1	161.3	167.4	173.0	177.3	181.3	185.4	192.3	199.8	204.8	232.3
	El	28.4	32.1	33.0	33.9	34.4	34.6	34.6	34.5	33.9	32.8	31.7	20.5
	Sk	-22.8	-8.1	-5.4	-1.4	2.4	-1.8	0.9	3.6	8.1	13.0	16.2	31.8
Wien N 48.2, E 16.4	Az	147.3	160.1	164.4	170.5	176.3	180.5	184.6	188.6	195.4	202.8	207.7	234.6
	El	29.4	32.8	33.5	34.2	34.6	34.7	34.6	34.3	33.5	32.1	30.9	19.2
	Sk	-21.1	-6.1	-3.4	0.7	4.5	0.4	3.0	5.7	10.2	15.0	18.1	32.9
Wolfsberg N 46.8, E 14.9	Az	144.9	157.8	162.0	168.3	174.1	178.5	182.6	186.7	193.7	201.3	206.4	233.8
	El	30.0	33.8	34.6	35.5	36.0	36.2	36.2	36.0	35.3	34.0	32.8	20.9
	Sk	-23.2	-8.0	-5.2	-1.0	3.0	-1.0	1.8	4.6	9.4	14.4	17.7	33.5

Belgium

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat	ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 9	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W	Hispasat
		42.0° East	31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	9.0° East	4.8° East	0.8° West	5.0° West	30.0° West
Antwerpen N 51.2, E 4.4	Az	135.3	146.7	150.5	156.0	161.3	165.2	169.0	174.1	179.5	186.9	192.0	221.3
	El	21.7	26.1	27.3	28.7	29.7	30.4	30.8	31.2	31.4	31.2	30.7	23.1
	Sk	-26.1	-13.1	-11.0	-7.7	-4.6	-9.2	-6.9	-3.7	-0.3	4.3	7.5	24.4
Arlon N 49.7, E 5.8	Az	136.2	147.8	151.6	157.3	162.7	166.7	170.6	175.8	181.3	188.9	194.0	223.4
	El	23.5	28.0	29.1	30.6	31.6	32.2	32.6	32.9	33.0	32.6	32.1	23.7
	Sk	-26.6	-13.2	-10.9	-7.5	-4.1	-8.5	-6.1	-2.7	0.9	5.7	9.0	26.4
Bastogne N 50.0, E 5.7	Az	136.2	147.8	151.6	157.3	162.6	166.7	170.5	175.7	181.2	188.7	193.9	223.2
	El	23.2	27.7	28.8	30.2	31.3	31.9	32.3	32.6	32.7	32.3	31.8	23.5
	Sk	-26.4	-13.1	-10.8	-7.4	-4.1	-8.5	-6.1	-2.8	0.8	5.6	8.9	26.1
Bergen N 50.5, E 4.0	Az	134.6	146.0	149.8	155.4	160.6	164.6	168.4	173.5	179.0	186.5	191.6	221.2
	El	22.0	26.6	27.8	29.3	30.4	31.0	31.5	32.0	32.1	32.0	31.5	23.9
	Sk	-26.9	-13.8	-11.7	-8.4	-5.2	-9.7	-7.4	-4.1	-0.7	4.1	7.4	24.8
Brügge N 51.2, E 3.2	Az	134.1	145.4	149.1	154.6	159.8	163.8	167.5	172.6	178.0	185.4	190.5	220.0
	El	21.1	25.7	26.9	28.3	29.5	30.2	30.7	31.1	31.4	31.3	30.9	23.7
	Sk	-26.7	-13.9	-11.8	-8.6	-5.5	-10.1	-7.8	-4.7	-1.3	3.4	6.5	23.8
Brüssel N 50.8, E 4.4	Az	135.2	146.6	150.4	155.9	161.2	165.2	169.0	174.1	179.5	187.0	192.1	221.5
	El	22.0	26.5	27.6	29.1	30.2	30.8	31.3	31.7	31.8	31.6	31.1	23.5
	Sk	-26.5	-13.4	-11.2	-7.9	-4.8	-9.3	-7.0	-3.7	-0.3	4.4	7.6	24.7
Charleroi N 50.4, E 4.5	Az	135.1	146.5	150.3	155.9	161.2	165.2	169.0	174.2	179.6	187.1	192.3	221.7
	El	22.3	26.9	28.0	29.5	30.6	31.2	31.7	32.1	32.3	32.0	31.6	23.7
	Sk	-26.7	-13.6	-11.4	-8.1	-4.9	-9.4	-7.0	-3.7	-0.3	4.5	7.8	25.1
Eupen N 50.6, E 6.0	Az	136.8	148.3	152.2	157.8	163.1	167.2	171.0	176.1	181.6	189.0	194.1	223.2
	El	22.9	27.2	28.3	29.7	30.7	31.3	31.7	32.0	32.0	31.7	31.1	22.9
	Sk	-25.8	-12.5	-10.2	-6.9	-3.6	-8.1	-5.7	-2.5	1.0	5.7	8.9	25.8
Gent N 51.0, E 3.7	Az	134.5	145.9	149.6	155.1	160.4	164.3	168.1	173.2	178.6	186.0	191.1	220.6
	El	21.5	26.0	27.2	28.7	29.8	30.5	30.9	31.4	31.6	31.4	31.0	23.6
	Sk	-26.7	-13.7	-11.6	-8.3	-5.2	-9.8	-7.5	-4.3	-0.9	3.8	7.0	24.2
Hasselt N 50.9, E 5.3	Az	136.2	147.6	151.4	157.0	162.3	166.3	170.1	175.2	180.6	188.1	193.2	222.4
	El	22.3	26.7	27.8	29.2	30.2	30.8	31.3	31.6	31.7	31.4	30.9	23.0
	Sk	-25.9	-12.7	-10.6	-7.2	-4.1	-8.6	-6.2	-3.0	0.4	5.1	8.3	25.2
Kortrijk N 50.8, E 3.3	Az	134.1	145.3	149.1	154.6	159.8	163.8	167.6	172.7	178.1	185.5	190.7	220.3
	El	21.5	26.0	27.3	28.8	29.9	30.6	31.1	31.6	31.8	31.7	31.3	23.9
	Sk	-27.0	-14.1	-12.0	-8.7	-5.6	-10.2	-7.8	-4.6	-1.2	3.5	6.7	24.1
Leuven N 50.9, E 4.7	Az	135.5	146.9	150.7	156.3	161.6	165.6	169.4	174.5	179.9	187.3	192.4	221.7
	El	22.1	26.5	27.6	29.1	30.1	30.7	31.2	31.6	31.7	31.5	31.0	23.2
	Sk	-26.2	-13.1	-11.0	-7.7	-4.5	-9.1	-6.7	-3.5	-0.1	4.6	7.8	24.8
Lüttich N 50.6, E 5.6	Az	136.4	147.9	151.7	157.3	162.6	166.6	170.5	175.6	181.0	188.5	193.6	222.8
	El	22.7	27.1	28.2	29.6	30.6	31.2	31.6	31.9	32.0	31.7	31.2	23.1
	Sk	-26.0	-12.7	-10.5	-7.2	-3.9	-8.4	-6.0	-2.8	0.7	5.4	8.6	25.6
Malmedy N 50.4, E 6.0	Az	136.7	148.2	152.1	157.8	163.1	167.1	171.0	176.1	181.6	189.1	194.2	223.3
	El	23.0	27.4	28.5	29.9	30.9	31.5	31.9	32.2	32.2	31.9	31.3	23.0
	Sk	-25.9	-12.6	-10.4	-7.0	-3.7	-8.2	-5.8	-2.5	1.0	5.8	9.0	25.9
Mecheln N 51.0, E 4.5	Az	135.4	146.8	150.5	156.1	161.4	165.3	169.1	174.2	179.6	187.1	192.2	221.5
	El	21.9	26.3	27.5	28.9	30.0	30.6	31.1	31.4	31.6	31.4	30.9	23.3
	Sk	-26.2	-13.2	-11.0	-7.8	-4.6	-9.2	-6.8	-3.6	-0.2	4.4	7.6	24.6
Namur N 50.5, E 4.9	Az	135.6	147.0	150.8	156.4	161.7	165.7	169.6	174.7	180.1	187.6	192.7	222.1
	El	22.5	26.9	28.1	29.5	30.6	31.2	31.6	32.0	32.1	31.9	31.4	23.5
	Sk	-26.4	-13.3	-11.1	-7.7	-4.5	-9.0	-6.6	-3.4	0.1	4.8	8.1	25.3
Eende N 51.2, E 2.9	Az	133.8	145.0	148.8	154.3	159.4	163.4	167.1	172.2	177.6	185.0	190.1	219.7
	El	21.0	25.5	26.7	28.3	29.4	30.1	30.6	31.1	31.4	31.3	30.9	23.8
	Sk	-26.9	-14.1	-12.0	-8.8	-5.7	-10.3	-8.0	-4.9	-1.5	3.1	6.3	23.6

Denmark

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		ASTRA 5 31.5° East	ASTRA 2 28.2° East	ASTRA 3 23.5° East	ASTRA 1 19.2° East	Eutelsat 16 16.0° East	Eutelsat Hotbird 13 13.0° East	Eutelsat 10 10.0° East	Eutelsat 9 9.0° East	Eutelsat 7 7.0° East	SES 5 / ASTRA 4 4.8° East	Thor / Intelsat 10 02 0.8° West	Eutelsat 5W 5.0° West
Alborg N 57.1, E 9.9	Az	154.8	158.5	163.9	169.0	172.8	176.3	179.9	181.1	183.5	186.1	192.9	197.6
	El	22.3	23.0	23.9	24.5	24.8	25.0	25.0	25.0	25.0	24.9	24.3	23.7
	Sk	-6.4	-4.5	-1.7	1.0	-3.9	-2.0	-0.1	0.6	1.9	3.3	7.0	9.4
Arhus N 56.2, E 10.2	Az	154.9	158.6	164.1	169.2	173.0	176.6	180.2	181.4	183.9	186.5	193.4	198.1
	El	23.2	24.0	24.9	25.5	25.8	25.9	26.0	26.0	25.9	25.8	25.2	24.6
	Sk	-6.7	-4.7	-1.8	1.0	-3.9	-1.9	0.1	0.8	2.1	3.6	7.4	10.0
Esbjerg N 55.5, E 8.5	Az	152.8	156.5	162.0	167.1	170.9	174.5	178.2	179.4	181.8	184.5	191.5	196.2
	El	23.5	24.3	25.3	26.0	26.4	26.6	26.7	26.7	26.7	26.7	26.2	25.6
	Sk	-8.0	-6.0	-3.1	-0.3	-5.1	-3.1	-1.0	-0.3	1.0	2.5	6.5	9.1
Helsingor N 56.1, E 12.6	Az	157.6	161.4	166.9	172.1	175.9	179.5	183.1	184.3	186.7	189.4	196.3	200.9
	El	23.9	24.6	25.4	25.8	26.0	26.1	26.1	26.0	25.9	25.7	24.9	24.2
	Sk	-5.3	-3.2	-0.2	2.6	-2.3	-0.3	1.8	2.4	3.8	5.2	9.0	11.5
Horsens N 57.1, E 10.1	Az	155.0	158.7	164.2	169.2	173.0	176.6	180.1	181.3	183.7	186.3	193.2	197.8
	El	22.3	23.1	24.0	24.5	24.8	25.0	25.0	25.0	25.0	24.9	24.3	23.7
	Sk	-6.3	-4.4	-1.5	1.2	-3.8	-1.9	0.1	0.7	2.0	3.4	7.1	9.6
Kobenhavn (Kopenhagen) N 55.7, E 12.6	Az	157.5	161.3	166.9	172.0	175.9	179.5	183.2	184.4	186.8	189.4	196.3	201.0
	El	24.3	25.0	25.8	26.2	26.5	26.5	26.5	26.4	26.3	26.1	25.4	24.6
	Sk	-5.5	-3.4	-0.4	2.5	-2.3	-0.3	1.8	2.5	3.8	5.3	9.1	11.7
Kolding N 55.5, E 9.5	Az	153.9	157.7	163.2	168.3	172.1	175.8	179.4	180.6	183.0	185.7	192.7	197.4
	El	23.7	24.5	25.5	26.1	26.5	26.7	26.7	26.7	26.7	26.6	26.0	25.4
	Sk	-7.4	-5.4	-2.4	0.4	-4.5	-2.4	-0.3	0.3	1.7	3.2	7.1	9.8
Odense N 55.4, E 10.4	Az	154.9	158.7	164.2	169.4	173.2	176.8	180.5	181.7	184.1	186.8	193.8	198.5
	El	24.1	24.8	25.8	26.4	26.6	26.8	26.8	26.8	26.8	26.6	26.0	25.3
	Sk	-7.0	-4.9	-1.9	1.0	-3.9	-1.8	0.3	1.0	2.3	3.9	7.8	10.4
Randers N 56.5, E 10.1	Az	154.8	158.6	164.1	169.1	172.9	176.5	180.1	181.3	183.7	186.4	193.2	197.9
	El	22.9	23.7	24.6	25.2	25.5	25.6	25.7	25.7	25.6	25.5	24.9	24.3
	Sk	-6.6	-4.6	-1.7	1.0	-3.9	-1.9	0.1	0.7	2.1	3.5	7.3	9.8
Roskilde N 55.7, E 12.1	Az	156.9	160.7	166.3	171.4	175.3	178.9	182.5	183.8	186.2	188.8	195.7	200.4
	El	24.2	24.9	25.7	26.2	26.4	26.5	26.5	26.5	26.4	26.2	25.4	24.7
	Sk	-5.8	-3.7	-0.7	2.2	-2.7	-0.6	1.4	2.1	3.5	5.0	8.8	11.3
Vejle N 55.7, E 9.6	Az	154.1	157.8	163.3	168.4	172.3	175.9	179.5	180.7	183.2	185.8	192.8	197.5
	El	23.6	24.4	25.3	25.9	26.3	26.5	26.5	26.5	26.5	26.4	25.8	25.2
	Sk	-7.3	-5.3	-2.3	0.5	-4.4	-2.3	-0.3	0.4	1.8	3.3	7.2	9.8

Finland

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		ASTRA 5 31.5° East	ASTRA 2 28.2° East	ASTRA 3 23.5° East	ASTRA 1 19.2° East	Eutelsat 16 16.0° East	Eutelsat Hotbird 13 13.0° East	Eutelsat 10 10.0° East	Eutelsat 9 9.0° East	Eutelsat 7 7.0° East	SES 5 / ASTRA 4 4.8° East	Thor / Intelsat 10 02 0.8° West	Eutelsat 5W 5.0° West
Espoo N 60.2, E 24.7	Az	172.2	176.0	181.4	186.3	190.0	193.4	196.8	198.0	200.2	202.6	209.0	213.3
	El	21.5	21.7	21.7	21.6	21.3	21.0	20.6	20.4	20.1	19.7	18.4	17.3
	Sk	3.1	5.0	7.7	10.1	5.0	6.6	8.3	8.8	9.9	11.0	14.0	15.8
Helsinki N 60.1, E 25.0	Az	172.5	176.3	181.7	186.7	190.4	193.8	197.2	198.3	200.6	203.0	209.4	213.7
	El	21.6	21.8	21.8	21.7	21.4	21.1	20.7	20.5	20.1	19.7	18.4	17.3
	Sk	3.3	5.2	7.9	10.3	5.1	6.8	8.5	9.0	10.1	11.2	14.2	16.0
Jyväskylä N 62.3, E 25.8	Az	173.6	177.3	182.6	187.5	191.0	194.4	197.7	198.8	201.0	203.4	209.7	214.0
	El	19.4	19.5	19.5	19.3	19.0	18.7	18.3	18.2	17.8	17.4	16.2	15.1
	Sk	4.0	5.7	8.2	10.5	5.1	6.6	8.1	8.6	9.6	10.7	13.3	15.1
Kotka N 60.4, E 26.9	Az	174.7	178.5	183.9	188.8	192.5	195.9	199.3	200.4	202.6	205.0	211.3	215.6
	El	21.4	21.5	21.5	21.2	20.9	20.5	20.0	19.9	19.5	19.0	17.6	16.5
	Sk	4.4	6.3	8.9	11.4	6.1	7.8	9.4	9.9	10.9	12.1	14.9	16.7
Kuopio N 62.9, E 27.7	Az	175.7	179.4	184.7	189.5	193.1	196.4	199.7	200.8	203.0	205.4	211.6	215.8
	El	18.8	18.9	18.8	18.5	18.2	17.9	17.4	17.3	16.9	16.5	15.2	14.1
	Sk	5.1	6.7	9.2	11.3	5.9	7.4	8.8	9.3	10.3	11.3	13.8	15.5
Lahti N 61.0, E 25.7	Az	173.4	177.1	182.5	187.4	191.1	194.5	197.8	198.9	201.2	203.6	209.9	214.2
	El	20.7	20.8	20.9	20.7	20.4	20.1	19.6	19.5	19.1	18.7	17.4	16.3
	Sk	3.8	5.6	8.2	10.6	5.3	7.0	8.5	9.1	10.1	11.2	14.0	15.8
Oulu N 65.0, E 25.4	Az	173.3	176.9	182.1	186.8	190.4	193.6	196.9	198.0	200.2	202.5	208.7	212.9
	El	16.5	16.6	16.7	16.5	16.3	16.0	15.7	15.5	15.3	14.9	13.8	12.9
	Sk	4.2	5.7	7.9	9.9	4.4	5.7	7.1	7.5	8.4	9.3	11.7	13.3
Pori N 61.5, E 21.8	Az	169.0	172.7	178.1	183.0	186.6	190.0	193.4	194.5	196.7	199.2	205.6	209.9
	El	19.9	20.1	20.3	20.3	20.2	20.0	19.7	19.5	19.3	18.9	17.8	16.9
	Sk	1.8	3.5	6.1	8.4	3.1	4.8	6.3	6.9	7.9	9.0	11.9	13.8
Tampere N 61.5, E 23.8	Az	171.3	175.0	180.3	185.2	188.9	192.3	195.6	196.7	199.0	201.4	207.7	212.0
	El	20.1	20.3	20.4	20.2	20.0	19.8	19.4	19.3	19.0	18.6	17.4	16.4
	Sk	2.8	4.6	7.2	9.5	4.2	5.8	7.4	7.9	8.9	10.0	12.8	14.7
Turku N 60.5, E 22.3	Az	169.5	173.2	178.6	183.6	187.2	190.7	194.1	195.2	197.5	199.9	206.3	210.7
	El	21.0	21.2	21.4	21.4	21.2	21.0	20.6	20.5	20.2	19.8	18.7	17.7
	Sk	1.8	3.7	6.3	8.8	3.6	5.2	6.9	7.4	8.5	9.7	12.6	14.6
Vantaa N 60.3, E 25.0	Az	172.5	176.3	181.7	186.7	190.3	193.8	197.1	198.3	200.5	203.0	209.3	213.6
	El	21.4	21.6	21.6	21.4	21.2	20.9	20.4	20.3	19.9	19.5	18.2	17.1
	Sk	3.3	5.2	7.9	10.3	5.1	6.8	8.4	8.9	10.0	11.1	14.0	15.9

France

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat	ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 9	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W	Hispasat
		42.0° East	31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	9.0° East	4.8° East	0.8° West	5.0° West	30.0° West
Amiens N 49.9, E 2.3	Az	132.7	143.9	147.6	153.1	158.3	162.3	166.1	171.3	176.7	184.3	189.5	219.6
	El	21.6	26.4	27.7	29.3	30.6	31.3	31.9	32.4	32.7	32.7	32.4	25.1
	Sk	-28.3	-15.3	-13.2	-9.9	-6.8	-11.3	-8.9	-5.6	-2.1	2.8	6.1	24.2
Angers N 47.5, W 0.6	Az	128.7	139.6	143.3	148.8	154.0	158.0	161.8	167.1	172.7	180.5	186.0	217.4
	El	21.7	27.2	28.7	30.6	32.1	33.1	33.8	34.6	35.2	35.4	35.3	28.4
	Sk	-31.8	-19.0	-16.8	-13.5	-10.2	-14.7	-12.2	-8.7	-4.9	0.4	4.0	24.2
Belfort N 47.6, E 6.8	Az	136.3	148.1	152.1	157.9	163.4	167.6	171.6	177.0	182.7	190.5	195.8	225.4
	El	25.6	30.3	31.5	32.9	34.0	34.6	35.0	35.3	35.3	34.8	34.1	24.8
	Sk	-27.8	-13.9	-11.4	-7.7	-4.1	-8.3	-5.6	-2.0	1.8	7.1	10.6	28.7
Bordeaux N 44.8, W 0.6	Az	127.5	138.3	142.0	147.6	152.9	157.1	161.1	166.5	172.4	180.6	186.2	218.7
	El	23.5	29.4	31.0	33.1	34.7	35.8	36.6	37.5	38.1	38.4	38.2	30.7
	Sk	-34.3	-21.2	-18.9	-15.4	-11.8	-16.1	-13.3	-9.5	-5.4	0.4	4.4	26.3
Boulogne N 47.2, W 1.8	Az	127.4	138.2	141.8	147.2	152.4	156.4	160.2	165.4	171.0	178.9	184.4	216.2
	El	21.3	26.9	28.4	30.4	32.0	33.0	33.9	34.7	35.4	35.7	35.7	29.2
	Sk	-32.7	-20.0	-17.8	-14.6	-11.4	-15.8	-13.3	-9.8	-6.1	-0.7	3.0	23.6
Brest N 48.4, W 4.5	Az	125.4	135.8	139.4	144.6	149.6	153.4	157.1	162.2	167.7	175.3	180.7	212.5
	El	19.0	24.6	26.2	28.2	29.9	31.0	31.9	32.9	33.7	34.3	34.4	29.2
	Sk	-32.8	-20.6	-18.6	-15.6	-12.6	-17.3	-15.0	-11.7	-8.2	-3.1	0.4	20.9
Charleville-Mezieres N 49.7, E 4.7	Az	135.0	146.5	150.3	156.0	161.3	165.3	169.2	174.4	179.9	187.5	192.6	222.2
	El	23.0	27.6	28.8	30.3	31.4	32.0	32.5	32.9	33.0	32.8	32.3	24.2
	Sk	-27.2	-13.9	-11.7	-8.3	-5.0	-9.4	-7.0	-3.6	-0.1	4.8	8.1	25.8
Colmar N 48.1, E 7.3	Az	137.1	148.9	152.8	158.7	164.2	168.4	172.4	177.7	183.4	191.1	196.3	225.7
	El	25.5	30.0	31.2	32.6	33.6	34.1	34.5	34.7	34.7	34.2	33.5	24.2
	Sk	-27.1	-13.2	-10.8	-7.1	-3.5	-7.7	-5.1	-1.5	2.2	7.4	10.8	28.5
Le Havre N 49.5, E 0.1	Az	130.3	141.2	144.9	150.4	155.5	159.5	163.2	168.4	173.8	181.5	186.7	217.3
	El	20.8	25.8	27.2	29.0	30.4	31.2	31.9	32.6	33.1	33.2	33.0	26.4
	Sk	-29.7	-17.0	-14.9	-11.7	-8.6	-13.2	-10.8	-7.5	-4.0	0.9	4.3	23.2
Lyon N 45.8, E 4.8	Az	133.4	145.0	148.9	154.7	160.3	164.6	168.6	174.2	180.0	188.1	193.6	224.1
	El	25.9	31.1	32.4	34.1	35.4	36.1	36.7	37.1	37.3	37.0	36.4	27.2
	Sk	-30.5	-16.6	-14.1	-10.3	-6.6	-10.7	-7.9	-4.1	0.0	5.6	9.4	29.0
Marseille N 43.3, E 5.4	Az	132.7	144.5	148.5	154.5	160.3	164.7	169.0	174.8	180.9	189.3	195.0	226.0
	El	28.1	33.6	35.0	36.8	38.1	38.9	39.5	39.9	40.1	39.6	39.0	28.8
	Sk	-32.3	-18.0	-15.4	-11.3	-7.2	-11.1	-8.0	-3.8	0.6	6.8	10.8	31.6
Metz N 49.1, E 6.2	Az	136.3	148.0	151.9	157.6	163.0	167.1	171.0	176.3	181.9	189.5	194.7	224.1
	El	24.1	28.7	29.8	31.3	32.3	32.9	33.3	33.6	33.7	33.2	32.6	24.0
	Sk	-26.9	-13.3	-11.0	-7.5	-4.0	-8.4	-5.9	-2.4	1.2	6.2	9.6	27.1
Montpellier N 43.6, E 3.9	Az	131.3	142.8	146.8	152.7	158.4	162.7	166.9	172.6	178.7	187.1	192.8	224.3
	El	27.0	32.6	34.1	36.0	37.4	38.3	38.9	39.5	39.7	39.5	38.9	29.4
	Sk	-32.9	-18.9	-16.4	-12.4	-8.5	-12.4	-9.4	-5.3	-0.9	5.1	9.2	30.4
Mulhouse N 47.7, E 7.3	Az	136.9	148.7	152.7	158.6	164.1	168.3	172.3	177.7	183.4	191.2	196.4	225.9
	El	25.8	30.4	31.6	33.0	34.0	34.6	34.9	35.2	35.2	34.6	33.9	24.5
	Sk	-27.4	-13.5	-11.0	-7.2	-3.6	-7.8	-5.2	-1.6	2.3	7.5	11.0	28.9
Nantes N 47.2, W 1.6	Az	127.6	138.4	142.0	147.4	152.6	156.6	160.5	165.7	171.3	179.2	184.6	216.4
	El	21.4	26.9	28.5	30.5	32.1	33.1	33.9	34.8	35.4	35.7	35.7	29.1
	Sk	-32.6	-19.8	-17.7	-14.5	-11.2	-15.6	-13.1	-9.7	-5.9	-0.6	3.1	23.8
Orleans N 47.9, E 1.9	Az	131.4	142.6	146.3	151.9	157.2	161.3	165.2	170.5	176.1	183.9	189.3	220.0
	El	22.8	28.0	29.4	31.1	32.5	33.3	33.9	34.6	34.9	34.9	34.6	26.9
	Sk	-30.2	-17.1	-14.8	-11.4	-8.0	-12.4	-9.9	-6.4	-2.6	2.6	6.2	25.5
Paris N 48.9, E 2.3	Az	132.2	143.4	147.2	152.8	158.0	162.1	165.9	171.1	176.7	184.4	189.7	220.0
	El	22.3	27.3	28.6	30.3	31.6	32.4	32.9	33.5	33.8	33.8	33.4	25.9
	Sk	-29.1	-16.1	-13.9	-10.5	-7.2	-11.7	-9.2	-5.8	-2.2	2.9	6.3	25.0
Reims N 49.3, E 4.0	Az	134.1	145.5	149.3	155.0	160.3	164.3	168.2	173.4	178.9	186.6	191.8	221.7
	El	22.9	27.6	28.9	30.4	31.6	32.3	32.8	33.2	33.4	33.2	32.8	24.8
	Sk	-27.9	-14.7	-12.4	-9.0	-5.7	-10.1	-7.7	-4.3	-0.7	4.3	7.7	25.7
Rennes N 48.1, W 1.7	Az	127.9	138.7	142.3	147.7	152.8	156.8	160.6	165.8	171.3	179.1	184.4	215.9
	El	20.7	26.2	27.7	29.6	31.2	32.2	33.0	33.8	34.4	34.8	34.7	28.4
	Sk	-31.8	-19.2	-17.1	-13.9	-10.8	-15.3	-12.8	-9.5	-5.8	-0.6	3.0	23.0
Rouen N 49.5, E 1.1	Az	131.3	142.4	146.1	151.5	156.7	160.7	164.5	169.7	175.1	182.8	188.0	218.4
	El	21.3	26.3	27.6	29.3	30.6	31.5	32.1	32.7	33.1	33.2	32.9	26.0
	Sk	-29.2	-16.4	-14.3	-11.0	-7.9	-12.4	-10.0	-6.7	-3.2	1.8	5.2	23.8
St-Étienne N 45.4, E 4.4	Az	132.8	144.3	148.2	154.1	159.6	163.9	168.0	173.6	179.4	187.6	193.1	223.9
	El	26.0	31.3	32.7	34.4	35.7	36.5	37.0	37.5	37.7	37.5	36.9	27.7
	Sk	-31.0	-17.2	-14.7	-10.9	-7.1	-11.2	-8.4	-4.5	-0.4	5.3	9.2	29.1
Straßburg N 48.6, E 7.8	Az	137.8	149.7	153.6	159.5	165.0	169.1	173.1	178.4	184.0	191.7	196.9	226.0
	El	25.3	29.7	30.8	32.2	33.1	33.7	34.0	34.2	34.1	33.6	32.9	23.5
	Sk	-26.4	-12.5	-10.1	-6.4	-2.9	-7.2	-4.6	-1.1	2.6	7.7	11.1	28.4
Toulouse N 43.6, E 1.5	Az	128.9	140.1	143.9	149.6	155.2	159.4	163.6	169.2	175.2	183.6	189.4	221.6
	El	25.6	31.4	33.0	35.1	36.7	37.6	38.4	39.2	39.6	39.7	39.3	30.7
	Sk	-34.3	-20.7	-18.3	-14.5	-10.7	-14.7	-11.8	-7.8	-3.5	2.6	6.8	28.8
Tours N 47.4, E 0.7	Az	130.0	141.0	144.7	150.3	155.6	159.6	163.5	168.8	174.4	182.3	187.7	218.9
	El	22.5	27.9	29.3	31.2	32.6	33.5	34.2	34.9	35.4	35.5	35.2	27.9
	Sk	-31.3	-18.2	-16.0	-12.6	-9.3	-13.6	-11.1	-7.6	-3.8	1.6	5.2	25.2

Germany

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat 42.0° East	ASTRA 5 31.5° East	ASTRA 2 28.2° East	ASTRA 3 23.5° East	ASTRA 1 19.2° East	Eutelsat 16 16.0° East	Eutelsat Hotbird 13 13.0° East	Eutelsat 9 9.0° East	SES 5 / ASTRA 4 4.8° East	Thor / Intelsat 10 02 0.8° West	Eutelsat 5W 5.0° West	Hispasat 30.0° West
Bamberg N 49.9, E 10.9	Az	141.7	153.8	157.8	163.7	169.2	173.4	177.3	182.5	188.0	195.4	200.4	228.6
	El	25.6	29.5	30.5	31.5	32.3	32.6	32.8	32.8	32.5	31.7	30.8	21.0
	Sk	-23.5	-9.5	-7.1	-3.4	0.1	-4.3	-1.8	1.6	5.1	9.9	13.0	28.9
Berlin N 52.5, E 13.4	Az	145.5	157.6	161.6	167.4	172.7	176.7	180.5	185.5	190.8	197.9	202.8	230.0
	El	24.4	27.7	28.4	29.2	29.7	29.9	30.0	29.8	29.4	28.5	27.6	18.0
	Sk	-20.2	-6.4	-4.1	-0.7	2.6	-2.0	0.3	3.4	6.6	10.8	13.6	27.8
Bonn N 50.7, E 7.1	Az	138.0	149.6	153.5	159.2	164.5	168.6	172.4	177.6	183.0	190.4	195.5	224.3
	El	23.3	27.5	28.6	29.9	30.8	31.3	31.7	31.9	31.9	31.4	30.8	22.3
	Sk	-25.1	-11.7	-9.4	-6.0	-2.7	-7.2	-4.8	-1.6	1.9	6.6	9.7	26.3
Bremen N 53.1, E 8.8	Az	140.7	152.4	156.2	161.8	167.1	171.0	174.8	179.8	185.0	192.2	197.1	225.2
	El	22.1	25.8	26.7	27.8	28.6	29.0	29.2	29.3	29.2	28.7	28.0	19.7
	Sk	-22.4	-9.2	-7.0	-3.8	-0.7	-5.4	-3.2	-0.2	3.0	7.3	10.2	25.2
Dortmund N 51.5, E 7.5	Az	138.7	150.4	154.2	159.9	165.2	169.2	173.0	178.1	183.5	190.8	195.8	224.4
	El	22.9	26.9	27.9	29.2	30.0	30.5	30.8	31.0	31.0	30.5	29.9	21.5
	Sk	-24.3	-10.9	-8.7	-5.4	-2.2	-6.7	-4.4	-1.2	2.2	6.7	9.8	25.8
Dresden N 51.1, E 13.7	Az	145.3	157.6	161.6	167.5	173.0	177.1	180.9	186.0	191.4	198.6	203.5	230.8
	El	25.7	29.1	29.9	30.8	31.3	31.5	31.5	31.3	30.9	29.9	28.9	18.8
	Sk	-20.9	-6.9	-4.4	-0.8	2.6	-1.9	0.6	3.8	7.1	11.6	14.5	29.1
Duisburg N 51.4, E 6.8	Az	137.9	149.5	153.4	159.0	164.3	168.3	172.1	177.2	182.6	189.9	195.0	223.8
	El	22.6	26.8	27.8	29.1	30.0	30.5	30.9	31.1	31.1	30.7	30.1	21.9
	Sk	-24.7	-11.5	-9.2	-5.9	-2.7	-7.3	-4.9	-1.8	1.6	6.2	9.3	25.6
Düsseldorf N 51.2, E 6.8	Az	137.9	149.5	153.3	159.0	164.3	168.3	172.1	177.2	182.6	190.0	195.0	223.8
	El	22.8	27.0	28.0	29.3	30.2	30.7	31.1	31.3	31.4	30.9	30.3	22.1
	Sk	-24.9	-11.6	-9.4	-6.0	-2.8	-7.3	-5.0	-1.8	1.6	6.2	9.3	25.7
Erfurt N 51.0, E 11.0	Az	142.3	154.3	158.3	164.1	169.5	173.6	177.4	182.6	188.0	195.3	200.3	228.2
	El	24.8	28.5	29.4	30.4	31.1	31.4	31.6	31.6	31.3	30.5	29.7	20.2
	Sk	-22.6	-8.8	-6.5	-2.9	0.4	-4.0	-1.6	1.6	5.0	9.6	12.6	28.0
Essen N 51.5, E 7.0	Az	138.2	149.8	153.6	159.3	164.6	168.6	172.4	177.5	182.8	190.2	195.2	223.9
	El	22.6	26.7	27.8	29.1	30.0	30.5	30.8	31.0	31.0	30.6	30.0	21.7
	Sk	-24.5	-11.3	-9.1	-5.7	-2.5	-7.1	-4.8	-1.6	1.8	6.3	9.4	25.6
Frankfurt am Main N 50.1, E 8.7	Az	139.4	151.3	155.2	161.0	166.4	170.5	174.4	179.6	185.1	192.6	197.6	226.2
	El	24.5	28.6	29.7	30.9	31.7	32.2	32.4	32.6	32.5	31.8	31.1	22.0
	Sk	-24.7	-11.0	-8.6	-5.1	-1.7	-6.1	-3.6	-0.3	3.3	8.0	11.2	27.6
Hamburg N 53.6, E 10.0	Az	142.2	153.9	157.8	163.4	168.6	172.6	176.3	181.2	186.5	193.6	198.4	226.2
	El	22.2	25.7	26.5	27.5	28.2	28.5	28.7	28.8	28.6	28.0	27.2	18.8
	Sk	-21.3	-8.1	-6.0	-2.8	0.3	-4.4	-2.2	0.7	3.8	8.0	10.8	25.4
Hannover N 52.4, E 9.7	Az	141.4	153.2	157.1	162.8	168.1	172.1	175.8	180.9	186.2	193.4	198.3	226.3
	El	23.0	26.7	27.7	28.7	29.4	29.8	30.0	30.1	29.9	29.3	28.5	19.8
	Sk	-22.4	-9.0	-6.7	-3.4	-0.2	-4.8	-2.5	0.5	3.8	8.1	11.1	26.2
Kiel N 54.3, E 10.1	Az	142.5	154.2	158.1	163.7	168.8	172.8	176.4	181.4	186.5	193.6	198.4	226.0
	El	21.6	25.0	25.9	26.8	27.5	27.8	28.0	28.0	27.8	27.2	26.5	18.3
	Sk	-20.8	-7.7	-5.6	-2.5	0.5	-4.2	-2.1	0.8	3.8	7.9	10.6	24.8
Köln N 51.0, E 7.0	Az	138.0	149.6	153.5	159.1	164.5	168.5	172.3	177.4	182.8	190.3	195.3	224.1
	El	23.0	27.2	28.3	29.6	30.5	31.0	31.3	31.6	31.6	31.1	30.5	22.1
	Sk	-24.9	-11.6	-9.3	-6.0	-2.7	-7.2	-4.8	-1.6	1.8	6.4	9.6	26.0
Leipzig N 51.3, E 12.4	Az	144.0	156.1	160.1	165.9	171.3	175.4	179.2	184.4	189.7	197.0	201.9	229.5
	El	25.1	28.6	29.4	30.4	30.9	31.2	31.3	31.2	30.8	29.9	29.0	19.3
	Sk	-21.6	-7.7	-5.3	-1.8	1.6	-2.9	-0.5	2.7	6.1	10.5	13.5	28.4
Lüneburg N 53.3, E 10.4	Az	142.5	154.3	158.2	163.8	169.1	173.0	176.8	181.8	187.0	194.1	199.0	226.7
	El	22.6	26.1	26.9	27.9	28.6	28.9	29.1	29.1	28.9	28.2	27.5	18.8
	Sk	-21.3	-8.0	-5.8	-2.6	0.5	-4.2	-1.9	1.0	4.2	8.4	11.2	25.8
Magdeburg N 52.1, E 11.6	Az	143.4	155.4	159.3	165.1	170.4	174.4	178.2	183.3	188.6	195.8	200.7	228.4
	El	24.1	27.6	28.4	29.4	30.0	30.3	30.4	30.4	30.1	29.3	28.4	19.1
	Sk	-21.5	-7.8	-5.5	-2.1	1.1	-3.4	-1.1	2.0	5.3	9.6	12.5	27.3
Mainz N 50.0, E 8.3	Az	139.0	150.8	154.7	160.5	165.9	170.0	173.9	179.1	184.6	192.1	197.2	225.9
	El	24.4	28.6	29.6	30.9	31.8	32.2	32.5	32.7	32.6	32.0	31.3	22.3
	Sk	-25.0	-11.3	-8.9	-5.4	-2.0	-6.4	-3.9	-0.6	2.9	7.7	10.9	27.5
Mannheim N 49.5, E 8.5	Az	139.0	150.8	154.8	160.6	166.1	170.2	174.1	179.3	184.9	192.4	197.5	226.3
	El	24.9	29.1	30.2	31.4	32.3	32.8	33.1	33.2	33.1	32.5	31.8	22.5
	Sk	-25.2	-11.5	-9.1	-5.5	-2.0	-6.4	-3.8	-0.4	3.2	8.0	11.3	28.0
München N 48.1, E 11.6	Az	141.8	154.1	158.2	164.2	169.8	174.1	178.1	183.5	189.1	196.7	201.8	230.0
	El	27.5	31.5	32.5	33.6	34.3	34.6	34.7	34.7	34.4	33.4	32.5	21.9
	Sk	-24.4	-10.0	-7.4	-3.5	0.2	-3.9	-1.3	2.3	6.1	11.1	14.4	30.8
Passau N 48.6, E 13.5	Az	144.1	156.6	160.7	166.8	172.4	176.7	180.7	186.0	191.5	199.0	204.0	231.7
	El	27.9	31.6	32.4	33.4	33.9	34.2	34.2	34.0	33.6	32.5	31.4	20.5
	Sk	-22.8	-8.2	-5.6	-1.7	2.0	-2.2	0.4	4.0	7.6	12.5	15.6	31.3
Stuttgart N 48.8, E 9.2	Az	139.4	151.4	155.4	161.3	166.8	171.0	175.0	180.3	185.8	193.5	198.6	227.3
	El	25.8	30.0	31.1	32.3	33.2	33.6	33.9	34.0	33.8	33.1	32.3	22.7
	Sk	-25.4	-11.4	-8.9	-5.2	-1.6	-5.9	-3.3	0.2	3.8	8.8	12.1	29.0
Wuppertal N 51.3, E 7.2	Az	138.3	150.0	153.8	159.5	164.8	168.8	172.6	177.7	183.1	190.5	195.5	224.2
	El	22.9	27.0	28.0	29.3	30.2	30.7	31.0	31.3	31.2	30.8	30.2	21.8
	Sk	-24.6	-11.3	-9.0	-5.7	-2.5	-7.0	-4.6	-1.4	1.9	6.5	9.6	25.8

Great Britain

		E=East Longitude		W=West Longitude		N= North Latitude		S= South Latitude		Az=Azimuth		El=Elevation		Sk=Skew	
		Türksat	ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 9	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W	Hispasat		
		42.0° East	31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	9.0° East	4.8° East	0.8° West	5.0° West	30.0° West		
Aberdeen N 57.1, W 2.1	Az	130.9	141.7	145.2	150.3	155.1	158.7	162.2	166.9	171.8	178.5	183.5	212.2		
	El	14.5	18.7	19.8	21.2	22.4	23.1	23.7	24.3	24.7	25.0	25.0	20.5		
	Sk	-24.2	-12.2	-10.6	-8.1	-5.7	-11.4	-9.6	-7.1	3.1	-0.8	1.9	16.8		
Belfast N 54.6, W 5.9	Az	126.4	136.8	140.3	145.4	150.1	153.8	157.2	161.9	167.0	173.8	178.9	208.8		
	El	14.4	19.2	20.5	22.3	23.7	24.6	25.4	26.2	27.0	27.5	27.7	24.0		
	Sk	-27.8	-15.9	-14.2	-11.7	-9.3	-14.9	-13.0	-10.4	0.0	-3.6	-0.6	16.2		
Birmingham N 52.5, W 1.8	Az	129.6	140.4	144.0	149.2	154.2	158.0	161.6	166.5	171.7	178.7	184.0	214.1		
	El	17.8	22.6	23.9	25.6	26.9	27.7	28.4	29.1	29.7	30.0	29.9	24.5		
	Sk	-28.0	-15.3	-13.5	-10.7	-7.9	-13.2	-11.1	-8.2	2.5	-0.8	2.5	19.9		
Bradford N 53.8, W 1.8	Az	130.1	140.9	144.4	149.6	154.6	158.3	161.9	166.7	171.8	178.8	184.0	213.6		
	El	16.9	21.5	22.7	24.4	25.6	26.4	27.1	27.8	28.3	28.6	28.5	23.4		
	Sk	-26.9	-14.4	-12.6	-9.9	-7.2	-12.6	-10.6	-7.8	2.7	-0.7	2.3	19.1		
Bristol N 51.5, W 2.6	Az	128.4	139.1	142.7	148.0	152.9	156.7	160.4	165.3	170.6	177.7	183.1	213.5		
	El	18.0	23.0	24.4	26.2	27.6	28.5	29.3	30.1	30.6	31.0	31.0	25.7		
	Sk	-29.2	-16.5	-14.7	-11.8	-9.0	-14.2	-12.1	-9.1	1.7	-1.4	1.9	20.1		
Cardiff N 51.5, W 3.2	Az	127.9	138.5	142.1	147.3	152.3	156.1	159.7	164.6	169.9	177.0	182.4	212.9		
	El	17.8	22.8	24.2	26.0	27.5	28.4	29.2	30.0	30.6	31.0	31.1	25.9		
	Sk	-29.4	-16.9	-15.0	-12.2	-9.4	-14.6	-12.5	-9.5	1.2	-1.9	1.5	19.8		
Dover N 51.1, E 1.3	Az	132.1	143.2	146.9	152.3	157.5	161.4	165.1	170.1	175.5	182.7	188.1	217.0		
	El	20.3	25.0	26.3	27.9	29.1	29.9	30.5	31.0	31.4	31.5	31.2	24.5		
	Sk	-27.8	-14.6	-12.6	-9.5	-6.4	-11.6	-9.3	-6.2	4.7	1.7	5.1	22.7		
Edinburgh N 56.0, W 3.2	Az	129.5	140.1	143.6	148.8	153.6	157.2	160.7	165.4	170.4	177.1	182.2	211.4		
	El	14.8	19.2	20.4	21.9	23.1	23.9	24.6	25.3	25.8	26.2	26.2	21.9		
	Sk	-25.6	-13.5	-11.9	-9.4	-6.9	-12.5	-10.7	-8.1	2.1	-1.6	1.2	16.9		
Glasgow N 55.9, W 4.2	Az	128.5	139.1	142.5	147.6	152.4	156.0	159.5	164.2	169.2	175.9	181.0	210.3		
	El	14.4	18.9	20.1	21.7	23.0	23.8	24.5	25.2	25.8	26.2	26.3	22.3		
	Sk	-26.0	-14.1	-12.4	-10.0	-7.6	-13.2	-11.3	-8.8	1.5	-2.3	0.5	16.4		
Greenwich N 51.48, E 0.0	Az	131.0	141.9	145.6	150.9	156.0	159.9	163.6	168.6	173.9	181.0	186.4	216.4		
	El	19.4	24.1	25.4	27.1	28.4	29.2	29.8	30.5	30.9	31.1	30.9	24.7		
	Sk	-28.0	-15.1	-13.1	-10.1	-7.2	-12.4	-10.2	-7.1	3.7	0.6	4.0	21.7		
Iverness N 57.5, W 4.2	Az	129.0	139.6	143.0	148.1	152.8	156.4	159.9	164.5	169.4	176.0	181.0	209.8		
	El	13.4	17.6	18.7	20.3	21.5	22.2	22.9	23.6	24.1	24.5	24.6	20.8		
	Sk	-24.7	-12.9	-11.4	-9.0	-6.7	-12.4	-10.7	-8.3	1.8	-2.2	0.5	15.5		
Kingston upon hull N 53.75, W 0.3	Az	131.5	142.4	146.0	151.3	156.3	160.0	163.6	168.5	173.7	180.6	185.8	215.2		
	El	17.6	22.1	23.3	24.9	26.1	26.8	27.4	28.0	28.4	28.6	28.5	22.9		
	Sk	-26.3	-13.6	-11.8	-9.0	-6.3	-11.7	-9.6	-6.8	3.8	0.3	3.4	20.0		
Leeds N 53.8, W 1.6	Az	130.3	141.1	144.6	149.9	154.8	158.5	162.1	166.9	172.1	179.0	184.2	213.8		
	El	17.0	21.6	22.8	24.4	25.7	26.5	27.1	27.8	28.3	28.6	28.5	23.3		
	Sk	-26.8	-14.3	-12.5	-9.8	-7.1	-12.5	-10.5	-7.7	2.8	-0.6	2.5	19.2		
Liverpool N 53.4, W 2.9	Az	128.9	139.5	143.1	148.3	153.2	156.9	160.5	165.3	170.4	177.4	182.6	212.5		
	El	16.7	21.4	22.7	24.4	25.7	26.6	27.3	28.0	28.6	29.0	29.0	24.1		
	Sk	-27.7	-15.3	-13.5	-10.8	-8.1	-13.5	-11.5	-8.7	1.8	-1.6	1.6	18.7		
London N 51.5, W 0.2	Az	130.8	141.7	145.4	150.7	155.8	159.6	163.3	168.3	173.6	180.8	186.1	216.2		
	El	19.3	24.0	25.3	27.0	28.3	29.1	29.8	30.4	30.9	31.1	30.9	24.8		
	Sk	-28.1	-15.2	-13.2	-10.2	-7.3	-12.5	-10.3	-7.3	3.5	0.5	3.8	21.6		
Manchester N 53.5, W 2.3	Az	129.5	140.2	143.8	149.0	153.9	157.6	161.2	166.0	171.2	178.1	183.4	213.2		
	El	16.9	21.5	22.8	24.5	25.8	26.6	27.3	28.0	28.5	28.9	28.8	23.8		
	Sk	-27.3	-14.9	-13.1	-10.4	-7.7	-13.1	-11.1	-8.3	2.3	-1.1	2.0	19.0		
Newcastle upon Tyne N 55.0, W 1.6	Az	130.7	141.5	145.0	150.2	155.1	158.8	162.4	167.1	172.2	179.0	184.2	213.4		
	El	16.2	20.6	21.8	23.3	24.5	25.3	25.9	26.5	27.0	27.3	27.2	22.3		
	Sk	-25.8	-13.4	-11.7	-9.0	-6.5	-12.0	-10.0	-7.3	3.0	-0.6	2.4	18.4		
Norwich N 52.6, E 1.3	Az	132.7	143.8	147.4	152.8	157.9	161.7	165.4	170.3	175.6	182.6	187.9	217.4		
	El	19.2	23.7	24.9	26.4	27.6	28.3	28.9	29.4	29.8	29.8	29.6	23.3		
	Sk	-26.5	-13.5	-11.6	-8.6	-5.7	-11.0	-8.8	-5.9	4.8	1.6	4.8	21.7		
Nottingham N 52.9, W 1.3	Az	130.2	141.1	144.7	149.9	154.9	158.7	162.3	167.2	172.4	179.4	184.6	214.5		
	El	17.8	22.4	23.7	25.3	26.6	27.5	28.1	28.8	29.3	29.5	29.4	24.0		
	Sk	-27.4	-14.8	-12.9	-10.1	-7.3	-12.7	-10.6	-7.7	2.9	-0.4	2.8	20.0		
Portsmouth N 50.8, W 1.1	Az	129.6	140.5	144.1	149.4	154.5	158.4	162.0	167.1	172.4	179.6	185.0	215.5		
	El	19.3	24.2	25.6	27.4	28.7	29.6	30.3	31.0	31.6	31.8	31.7	25.8		
	Sk	-29.1	-16.2	-14.3	-11.3	-8.3	-13.5	-11.2	-8.1	2.7	-0.2	3.2	21.5		
Sheffield N 53.4, W 1.5	Az	130.2	141.0	144.6	149.9	154.8	158.6	162.1	167.0	172.2	179.1	184.4	214.1		
	El	17.3	21.9	23.2	24.8	26.1	26.9	27.6	28.2	28.7	29.0	28.9	23.6		
	Sk	-27.1	-14.5	-12.7	-9.9	-7.2	-12.6	-10.5	-7.7	2.8	-0.5	2.6	19.5		
Southampton N 50.9, W 1.4	Az	129.4	140.2	143.8	149.1	154.2	158.0	161.7	166.7	172.0	179.2	184.6	215.1		
	El	19.1	24.0	25.4	27.2	28.6	29.4	30.1	30.9	31.4	31.7	31.6	25.8		
	Sk	-29.2	-16.3	-14.4	-11.4	-8.5	-13.7	-11.4	-8.4	2.5	-0.5	2.9	21.3		
Swansea N 51.6, W 4.0	Az	127.1	137.7	141.2	146.4	151.3	155.1	158.7	163.6	168.8	175.9	181.3	211.9		
	El	17.3	22.3	23.8	25.6	27.1	28.0	28.8	29.7	30.4	30.9	30.9	26.1		
	Sk	-29.7	-17.2	-15.4	-12.6	-9.8	-15.2	-13.1	-10.1	0.6	-2.5	0.8	19.2		
Wolverhampton N 52.6, W 2.2	Az	129.3	140.0	143.6	148.8	153.7	157.5	161.1	166.0	171.2	178.2	183.5	213.6		
	El	17.5	22.3	23.6	25.3	26.7	27.5	28.2	29.0	29.5	29.9	29.8	24.6		
	Sk	-28.1	-15.5	-13.7	-10.8	-8.1	-13.4	-11.3	-8.5	2.2	-1.1	2.1	19.6		
York N 53.95, W 1.1	Az	130.9	141.7	145.3	150.5	155.4	159.2	162.8	167.6	172.7	179.7	184.8	214.4		
	El	17.2	21.7	22.9	24.4	25.7	26.5	27.1	27.7	28.2	28.4	28.3	23.0		
	Sk	-26.4	-13.9	-12.1	-9.3	-6.7	-12.1	-10.0	-7.3	3.2	-0.2	2.9	19.4		

Italy

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat 42.0° East	ASTRA 5 31.5° East	ASTRA 2 28.2° East	ASTRA 3 23.5° East	ASTRA 1 19.2° East	Eutelsat 16 16.0° East	Eutelsat Hotbird 13 13.0° East	Eutelsat 9 9.0° East	SES 5 / ASTRA 4 4.8° East	Thor / Intelsat 10 02 0.8° West	Eutelsat 5W 5.0° West	Hispasat 30.0° West
Ancona N 43.6, E 13.5	Az	141.8	154.8	159.2	165.7	171.8	176.4	180.7	186.5	192.5	200.6	205.9	234.0
	El	32.2	36.6	37.6	38.7	39.4	39.7	39.7	39.5	39.0	37.6	36.4	23.7
	Sk	-26.6	-11.0	-7.9	-3.3	1.1	-2.6	0.5	4.7	9.0	14.7	18.4	35.9
Asciano N 43.2, E 11.5	Az	139.3	152.0	156.3	162.8	168.8	173.4	177.8	183.7	189.7	197.9	203.4	232.3
	El	31.5	36.2	37.4	38.7	39.6	40.0	40.1	40.1	39.7	38.6	37.4	25.2
	Sk	-28.4	-13.0	-10.0	-5.5	-1.1	-4.8	-1.6	2.7	7.1	13.0	16.8	35.2
Bari N 41.1, E 16.9	Az	144.5	158.4	163.1	170.0	176.5	181.4	185.9	191.9	198.1	206.2	211.5	238.4
	El	36.0	40.2	41.1	42.0	42.4	42.5	42.3	41.8	40.9	39.1	37.5	23.0
	Sk	-25.9	-9.1	-5.7	-0.5	4.4	1.0	4.5	9.0	13.5	19.4	23.2	39.9
Bologna N 44.5, E 11.3	Az	139.7	152.3	156.6	162.9	168.8	173.3	177.6	183.3	189.2	197.3	202.7	231.4
	El	30.3	34.9	36.0	37.3	38.1	38.5	38.7	38.7	38.3	37.3	36.2	24.5
	Sk	-27.5	-12.4	-9.5	-5.1	-1.0	-4.8	-1.7	2.3	6.6	12.2	15.9	33.9
Bolzano (Bozen) N 46.5, E 11.3	Az	140.7	153.1	157.3	163.4	169.2	173.5	177.7	183.2	188.9	196.7	202.0	230.5
	El	28.7	33.0	34.0	35.2	36.0	36.3	36.5	36.5	36.1	35.2	34.2	23.1
	Sk	-25.9	-11.1	-8.4	-4.3	-0.4	-4.5	-1.6	2.2	6.1	11.4	14.9	32.1
Cagliari N 39.3, E 9.1	Az	134.4	147.0	151.3	157.9	164.3	169.2	173.9	180.2	186.8	195.7	201.6	232.1
	El	33.3	38.9	40.4	42.1	43.3	43.9	44.3	44.5	44.3	43.3	42.2	29.3
	Sk	-33.6	-18.0	-14.8	-9.9	-5.1	-8.4	-4.8	0.1	5.2	12.1	16.6	37.6
Catania N 37.5, E 15.1	Az	140.2	154.2	159.1	166.4	173.3	178.5	183.5	190.0	196.6	205.4	211.0	238.8
	El	38.2	43.2	44.4	45.6	46.3	46.5	46.5	46.1	45.2	43.4	41.7	26.3
	Sk	-30.5	-13.2	-9.5	-3.8	1.7	-1.2	2.7	7.9	13.1	19.9	24.1	42.7
Catanzaro N 38.9, E 16.6	Az	142.9	157.0	161.9	169.1	175.9	181.0	185.7	192.0	198.4	206.8	212.2	239.3
	El	37.8	42.4	43.4	44.4	44.9	45.0	44.8	44.3	43.3	41.4	39.7	24.4
	Sk	-28.0	-10.7	-7.0	-1.5	3.8	0.7	4.5	9.3	14.2	20.5	24.5	42.0
Ferrara N 44.8, E 11.6	Az	140.2	152.8	157.1	163.4	169.3	173.8	178.0	183.7	189.6	197.6	202.9	231.6
	El	30.2	34.7	35.8	37.0	37.8	38.2	38.4	38.3	37.9	36.9	35.8	24.1
	Sk	-27.0	-11.9	-9.1	-4.7	-0.6	-4.4	-1.4	2.6	6.8	12.4	16.1	33.8
Firenze (Florenz) N 43.8, E 11.3	Az	139.4	152.0	156.3	162.7	168.7	173.2	177.5	183.3	189.4	197.5	202.9	231.8
	El	30.9	35.6	36.7	38.0	38.9	39.3	39.5	39.4	39.1	38.0	36.9	25.0
	Sk	-28.0	-12.8	-9.9	-5.4	-1.2	-4.9	-1.8	2.4	6.7	12.5	16.3	34.5
Genova (Genoa) N 44.4, E 8.9	Az	137.0	149.3	153.4	159.6	165.4	169.9	174.2	179.9	185.9	194.0	199.5	229.1
	El	29.2	34.1	35.3	36.8	37.8	38.3	38.7	38.8	38.7	37.9	37.0	26.0
	Sk	-29.2	-14.4	-11.7	-7.4	-3.4	-7.2	-4.2	-0.1	4.2	10.0	13.8	32.7
Lecce N 40.3, E 18.2	Az	145.7	159.9	164.8	171.8	178.5	183.4	188.0	194.1	200.2	208.3	213.5	240.0
	El	37.3	41.4	42.3	43.1	43.4	43.3	43.1	42.4	41.4	39.4	37.6	22.5
	Sk	-25.5	-8.2	-4.6	0.8	5.8	2.6	6.1	10.7	15.3	21.2	24.9	41.3
Milano (Mailand) N 45.5, E 9.2	Az	137.9	150.1	154.2	160.3	166.1	170.5	174.7	180.3	186.2	194.2	199.5	228.8
	El	28.5	33.2	34.3	35.7	36.7	37.2	37.5	37.6	37.4	36.7	35.8	25.0
	Sk	-28.0	-13.5	-10.7	-6.6	-2.7	-6.6	-3.7	0.2	4.3	9.9	13.6	31.8
Napoli (Neapel) N 40.8, E 14.3	Az	141.2	154.7	159.3	166.1	172.5	177.4	182.0	188.1	194.4	202.7	208.2	236.2
	El	35.0	39.6	40.7	41.9	42.6	42.8	42.8	42.5	41.8	40.3	38.8	24.9
	Sk	-28.3	-11.9	-8.6	-3.5	1.4	-2.0	1.5	6.1	10.8	17.0	21.0	39.0
Padova N 45.3, E 11.6	Az	140.5	153.0	157.3	163.5	169.4	173.8	178.0	183.7	189.5	197.5	202.8	231.3
	El	29.8	34.2	35.3	36.5	37.3	37.7	37.8	37.8	37.4	36.4	35.3	23.8
	Sk	-26.6	-11.6	-8.8	-4.5	-0.5	-4.3	-1.4	2.6	6.7	12.2	15.8	33.3
Palermo N 38.1, E 13.4	Az	138.5	152.1	156.8	163.9	170.7	175.8	180.7	187.1	193.8	202.6	208.3	236.9
	El	36.7	42.0	43.2	44.6	45.4	45.8	45.9	45.6	44.9	43.3	41.8	27.1
	Sk	-31.4	-14.6	-11.0	-5.6	-0.3	-3.3	0.5	5.6	10.8	17.6	21.9	41.2
Pescara N 42.5, E 14.2	Az	142.0	155.3	159.7	166.4	172.6	177.3	181.8	187.7	193.8	201.9	207.3	235.2
	El	33.5	37.9	38.9	40.0	40.7	40.9	40.9	40.7	40.0	38.6	37.2	24.0
	Sk	-27.0	-11.0	-7.8	-3.0	1.6	-2.0	1.3	5.7	10.1	16.0	19.7	37.3
Pisa N 43.7, E 10.4	Az	138.3	150.8	155.1	161.4	167.4	171.9	176.2	182.0	188.1	196.3	201.7	230.9
	El	30.5	35.3	36.5	37.9	38.8	39.3	39.5	39.6	39.3	38.3	37.3	25.6
	Sk	-28.7	-13.6	-10.7	-6.3	-2.1	-5.8	-2.7	1.5	5.8	11.7	15.5	34.2
Roma (Rom) N 41.9, E 12.5	Az	139.7	152.7	157.2	163.8	170.0	174.8	179.3	185.2	191.5	199.8	205.3	233.9
	El	33.1	37.9	39.0	40.3	41.1	41.5	41.6	41.5	41.0	39.7	38.4	25.4
	Sk	-28.8	-12.9	-9.8	-5.0	-0.4	-3.9	-0.6	3.9	8.5	14.6	18.5	37.0
Torino (Turin) N 45.1, E 7.7	Az	136.1	148.1	152.2	158.2	164.0	168.4	172.5	178.2	184.1	192.2	197.7	227.5
	El	28.0	32.9	34.2	35.7	36.8	37.4	37.8	38.0	38.0	37.3	36.5	26.2
	Sk	-29.3	-14.9	-12.2	-8.2	-4.2	-8.2	-5.3	-1.3	2.9	8.6	12.4	31.4
Trento (Trient) N 46.1, E 11.1	Az	140.3	152.7	156.9	163.0	168.8	173.2	177.4	182.9	188.7	196.6	201.8	230.4
	El	28.9	33.3	34.3	35.6	36.4	36.7	36.9	36.9	36.6	35.6	34.6	23.5
	Sk	-26.3	-11.5	-8.8	-4.7	-0.7	-4.7	-1.8	2.0	6.0	11.4	14.9	32.3
Trieste N 45.6, E 13.7	Az	143.0	155.8	160.1	166.4	172.3	176.8	181.0	186.6	192.4	200.2	205.4	233.2
	El	30.5	34.6	35.6	36.6	37.2	37.5	37.5	37.3	36.8	35.5	34.3	22.3
	Sk	-24.9	-9.7	-6.8	-2.5	1.6	-2.3	0.7	4.6	8.6	14.0	17.4	34.1
Venezia (Venedig) N 45.4, E 12.3	Az	141.3	153.9	158.2	164.5	170.4	174.8	179.0	184.6	190.5	198.4	203.6	232.0
	El	30.1	34.4	35.4	36.6	37.3	37.6	37.7	37.6	37.2	36.1	35.0	23.3
	Sk	-26.0	-11.0	-8.1	-3.8	0.2	-3.6	-0.7	3.3	7.3	12.8	16.3	33.6
Verona N 45.3, E 11.0	Az	139.8	152.3	156.5	162.7	168.5	173.0	177.2	182.8	188.7	196.7	202.0	230.7
	El	29.5	34.0	35.1	36.4	37.2	37.6	37.8	37.8	37.5	36.5	35.5	24.1
	Sk	-27.0	-12.1	-9.3	-5.1	-1.0	-4.9	-2.0	2.0	6.1	11.6	15.3	33.0

Luxembourg

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 10	Eutelsat 9	Eutelsat 7	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W
		31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	10.0° East	9.0° East	7.0° East	4.8° East	0.8° West	5.0° West
Differdange N 49.5, E 5.9	Az	147.8	151.7	157.4	162.7	166.8	170.7	174.6	175.9	178.6	181.5	189.0	194.2
	El	28.2	29.4	30.8	31.8	32.4	32.8	33.1	33.2	33.2	33.2	32.9	32.3
	Sk	-13.3	-11.0	-7.5	-4.1	-8.5	-6.0	-3.5	-2.6	-0.9	0.9	5.9	9.2
Dudelange N 49.5, E 6.1	Az	148.0	151.9	157.6	163.0	167.1	171.0	174.9	176.2	178.8	181.7	189.3	194.5
	El	28.3	29.4	30.8	31.9	32.4	32.9	33.1	33.2	33.2	33.2	32.8	32.2
	Sk	-13.1	-10.8	-7.3	-4.0	-8.4	-5.9	-3.3	-2.5	-0.8	1.1	6.0	9.3
Esch N 49.5, E 6.0	Az	147.9	151.8	157.5	162.9	166.9	170.8	174.8	176.1	178.7	181.6	189.2	194.3
	El	28.2	29.4	30.8	31.8	32.4	32.8	33.1	33.2	33.2	33.2	32.8	32.3
	Sk	-13.2	-10.9	-7.4	-4.0	-8.4	-5.9	-3.4	-2.6	-0.9	1.0	5.9	9.3
Ettelbruck N 49.8, E 6.1	Az	148.1	152.0	157.7	163.1	167.1	171.0	174.9	176.2	178.8	181.7	189.3	194.4
	El	28.0	29.1	30.5	31.5	32.1	32.5	32.8	32.8	32.9	32.9	32.5	31.9
	Sk	-12.9	-10.6	-7.2	-3.8	-8.3	-5.8	-3.3	-2.5	-0.8	1.1	6.0	9.2
Luxembourg N 49.6, E 6.2	Az	148.2	152.1	157.8	163.1	167.2	171.1	175.0	176.3	179.0	181.8	189.4	194.6
	El	28.2	29.4	30.8	31.8	32.4	32.8	33.0	33.1	33.1	33.1	32.7	32.1
	Sk	-13.0	-10.7	-7.2	-3.8	-8.2	-5.8	-3.2	-2.4	-0.7	1.2	6.1	9.4
Petange N 49.6, E 5.9	Az	147.8	151.7	157.4	162.8	166.8	170.7	174.6	175.9	178.6	181.4	189.0	194.2
	El	28.1	29.3	30.7	31.7	32.3	32.7	33.0	33.0	33.1	33.1	32.7	32.2
	Sk	-13.2	-10.9	-7.4	-4.1	-8.5	-6.0	-3.5	-2.6	-0.9	0.9	5.8	9.1
Remich N 49.6, E 6.4	Az	148.4	152.3	158.0	163.4	167.5	171.4	175.3	176.6	179.2	182.1	189.7	194.8
	El	28.3	29.4	30.8	31.8	32.4	32.8	33.0	33.1	33.1	33.1	32.7	32.1
	Sk	-12.9	-10.5	-7.1	-3.7	-8.1	-5.6	-3.1	-2.2	-0.5	1.4	6.3	9.6

Netherlands

		E=East Longitude	W=West Longitude	N= North Latitude	S= South Latitude	Az=Azimuth	El=Elevation	Sk=Skew					
		ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 10	Eutelsat 9	Eutelsat 7	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W
		31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	10.0° East	9.0° East	7.0° East	4.8° East	0.8° West	5.0° West
Alkmar N 52.7, E 4.7	Az	147.6	151.3	156.8	162.0	165.9	169.6	173.4	174.6	177.1	179.9	187.2	192.1
	El	24.9	25.9	27.3	28.3	28.8	29.3	29.6	29.6	29.7	29.8	29.5	29.1
	Sk	-12.0	-9.9	-6.8	-3.8	-8.5	-6.3	-4.0	-3.3	-1.8	-0.1	4.3	7.3
Amelo N 52.3, E 6.7	Az	149.7	153.5	159.1	164.4	168.3	172.1	175.8	177.1	179.6	182.4	189.7	194.7
	El	25.9	26.9	28.2	29.1	29.6	29.9	30.1	30.2	30.2	30.2	29.8	29.2
	Sk	-11.0	-8.8	-5.6	-2.5	-7.1	-4.9	-2.6	-1.8	-0.2	1.5	5.9	8.9
Amsterdam N 52.4, E 4.9	Az	147.7	151.5	157.0	162.2	166.1	169.8	173.6	174.8	177.4	180.1	187.4	192.4
	El	25.2	26.3	27.6	28.6	29.2	29.6	29.9	30.0	30.1	30.1	29.8	29.4
	Sk	-12.0	-9.9	-6.8	-3.8	-8.4	-6.2	-3.9	-3.2	-1.6	0.1	4.5	7.5
Apeldoorn N 52.2, E 6.0	Az	148.9	152.7	158.3	163.5	167.4	171.2	174.9	176.2	178.7	181.5	188.8	193.8
	El	25.8	26.8	28.1	29.0	29.6	29.9	30.2	30.2	30.3	30.3	29.9	29.4
	Sk	-11.5	-9.3	-6.1	-3.0	-7.7	-5.4	-3.1	-2.3	-0.8	0.9	5.4	8.4
Arnhem N 52.0, E 5.9	Az	148.7	152.5	158.1	163.3	167.3	171.0	174.8	176.1	178.6	181.4	188.7	193.7
	El	25.9	27.0	28.3	29.2	29.8	30.1	30.4	30.4	30.5	30.5	30.2	29.6
	Sk	-11.7	-9.5	-6.3	-3.2	-7.8	-5.5	-3.2	-2.4	-0.9	0.9	5.4	8.4
Breda N 51.6, E 4.7	Az	147.2	151.0	156.5	161.7	165.7	169.5	173.3	174.5	177.1	179.9	187.3	192.3
	El	25.9	27.0	28.4	29.4	30.0	30.4	30.7	30.8	30.9	31.0	30.7	30.2
	Sk	-12.7	-10.5	-7.3	-4.2	-8.8	-6.5	-4.2	-3.4	-1.8	-0.1	4.5	7.6
Den Haag N 52.1, E 4.3	Az	146.9	150.7	156.2	161.4	165.3	169.0	172.8	174.1	176.6	179.4	186.7	191.7
	El	25.3	26.4	27.8	28.8	29.4	29.9	30.2	30.2	30.4	30.4	30.2	29.8
	Sk	-12.6	-10.5	-7.4	-4.3	-9.0	-6.7	-4.4	-3.7	-2.1	-0.4	4.1	7.2
Eindhoven N 51.4, E 5.5	Az	148.0	151.8	157.4	162.7	166.7	170.4	174.3	175.5	178.1	180.9	188.3	193.3
	El	26.3	27.4	28.8	29.8	30.3	30.7	31.0	31.1	31.2	31.2	30.8	30.3
	Sk	-12.3	-10.1	-6.9	-3.7	-8.3	-6.0	-3.6	-2.8	-1.2	0.6	5.2	8.3
Emmen N 52.8, E 6.9	Az	150.1	153.9	159.5	164.7	168.6	172.4	176.1	177.4	179.9	182.6	189.9	194.8
	El	25.5	26.5	27.7	28.6	29.1	29.4	29.6	29.6	29.7	29.6	29.2	28.6
	Sk	-10.5	-8.4	-5.2	-2.2	-6.9	-4.6	-2.4	-1.6	-0.1	1.6	6.0	8.9
Enschede N 52.2, E 6.9	Az	149.9	153.7	159.3	164.6	168.5	172.3	176.1	177.3	179.9	182.7	190.0	194.9
	El	26.1	27.1	28.3	29.2	29.7	30.0	30.2	30.3	30.3	30.3	29.8	29.3
	Sk	-10.9	-8.7	-5.5	-2.4	-7.0	-4.7	-2.4	-1.6	-0.1	1.6	6.1	9.1
Groningen N 53.2, E 6.6	Az	149.9	153.7	159.2	164.4	168.3	172.0	175.8	177.0	179.5	182.3	189.5	194.4
	El	25.0	26.0	27.2	28.1	28.6	28.9	29.1	29.2	29.2	29.2	28.8	28.3
	Sk	-10.5	-8.4	-5.3	-2.3	-7.0	-4.8	-2.5	-1.8	-0.3	1.4	5.7	8.6
Harlem N 52.4, E 4.6	Az	147.4	151.1	156.6	161.8	165.7	169.4	173.2	174.5	177.0	179.8	187.1	192.1
	El	25.1	26.2	27.6	28.6	29.1	29.6	29.9	29.9	30.0	30.1	29.9	29.4
	Sk	-12.2	-10.1	-7.0	-4.0	-8.7	-6.4	-4.2	-3.4	-1.9	-0.2	4.3	7.3
Hoogeveen N 52.7, E 6.5	Az	149.6	153.4	159.0	164.2	168.1	171.9	175.6	176.9	179.4	182.1	189.4	194.4
	El	25.5	26.5	27.7	28.6	29.1	29.5	29.7	29.7	29.8	29.7	29.4	28.8
	Sk	-10.9	-8.7	-5.6	-2.5	-7.2	-4.9	-2.7	-1.9	-0.4	1.3	5.7	8.6
Leeuwarden N 53.2, E 5.8	Az	149.0	152.8	158.3	163.4	167.3	171.0	174.8	176.0	178.5	181.3	188.5	193.4
	El	24.8	25.8	27.1	28.0	28.5	28.9	29.1	29.1	29.2	29.2	28.9	28.4
	Sk	-11.0	-8.9	-5.8	-2.8	-7.6	-5.4	-3.1	-2.4	-0.9	0.8	5.1	8.0
Maastricht N 50.8, E 5.7	Az	148.0	151.9	157.5	162.8	166.8	170.6	174.5	175.7	178.3	181.2	188.6	193.7
	El	26.9	28.1	29.4	30.4	31.0	31.4	31.7	31.7	31.8	31.8	31.5	30.9
	Sk	-12.5	-10.3	-7.0	-3.8	-8.3	-5.9	-3.5	-2.7	-1.1	0.7	5.4	8.6
Nijmegen N 51.8, E 5.9	Az	148.6	152.4	158.0	163.3	167.2	171.0	174.8	176.1	178.6	181.4	188.8	193.8
	El	26.1	27.2	28.5	29.4	30.0	30.4	30.6	30.7	30.7	30.7	30.4	29.9
	Sk	-11.8	-9.6	-6.4	-3.3	-7.9	-5.6	-3.2	-2.4	-0.9	0.9	5.4	8.5
Roermond N 51.2, E 6.0	Az	148.5	152.4	158.0	163.3	167.3	171.1	174.9	176.2	178.7	181.5	189.0	194.0
	El	26.7	27.8	29.1	30.1	30.6	31.0	31.3	31.3	31.4	31.4	31.0	30.5
	Sk	-12.1	-9.9	-6.6	-3.4	-8.0	-5.6	-3.2	-2.4	-0.8	1.0	5.6	8.7
Rotterdam N 51.9, E 4.5	Az	147.1	150.9	156.4	161.6	165.5	169.3	173.0	174.3	176.8	179.6	187.0	192.0
	El	25.5	26.6	28.0	29.0	29.7	30.1	30.4	30.5	30.6	30.6	30.4	30.0
	Sk	-12.6	-10.5	-7.3	-4.3	-8.9	-6.6	-4.3	-3.5	-2.0	-0.2	4.3	7.4
Tilburg N 51.6, E 5.1	Az	147.7	151.4	157.0	162.2	166.2	170.0	173.8	175.0	177.6	180.4	187.8	192.8
	El	26.0	27.1	28.5	29.5	30.1	30.5	30.8	30.8	30.9	30.9	30.7	30.2
	Sk	-12.4	-10.3	-7.1	-3.9	-8.5	-6.2	-3.9	-3.1	-1.5	0.2	4.8	7.9
Utrecht N 52.1, E 5.1	Az	147.8	151.6	157.1	162.3	166.3	170.0	173.8	175.1	177.6	180.4	187.7	192.7
	El	25.5	26.6	28.0	29.0	29.5	30.0	30.2	30.3	30.4	30.4	30.1	29.7
	Sk	-12.1	-10.0	-6.8	-3.7	-8.4	-6.1	-3.8	-3.0	-1.5	0.2	4.7	7.8
Venlo N 51.3, E 6.2	Az	148.8	152.6	158.2	163.5	167.5	171.3	175.1	176.4	179.0	181.8	189.2	194.2
	El	26.7	27.7	29.1	30.0	30.6	30.9	31.2	31.2	31.3	31.3	30.9	30.3
	Sk	-11.9	-9.7	-6.4	-3.2	-7.8	-5.4	-3.0	-2.2	-0.6	1.1	5.7	8.8
Warden N 53.1, E 5.8	Az	149.0	152.7	158.2	163.4	167.3	171.0	174.8	176.0	178.5	181.3	188.5	193.4
	El	24.9	25.9	27.2	28.1	28.6	29.0	29.2	29.3	29.3	29.3	29.0	28.5
	Sk	-11.0	-9.0	-5.9	-2.9	-7.6	-5.4	-3.2	-2.4	-0.9	0.8	5.1	8.0

Norway

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutels at 16	Eutelsat Hotbird 13	Eutelsat 10	Eutelsat 9	Eutelsat 7	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W
		31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	10.0° East	9.0° East	7.0° East	4.8° East	0.8° West	5.0° West
Alesund N 62.5, E 6.2	Az	152.0	155.5	160.7	165.4	169.0	172.3	175.7	176.8	179.1	181.6	187.9	192.6
	El	16.3	17.0	17.9	18.5	18.8	19.1	19.2	19.3	19.3	19.3	19.1	18.7
	Sk	-5.0	-3.5	-1.3	0.8	-5.1	-3.5	-2.0	-1.5	-0.4	8.2	3.6	5.8
Arendal N 58.5, E 8.8	Az	153.9	157.6	162.9	167.9	171.6	175.1	178.6	179.8	182.1	184.7	191.2	196.1
	El	20.7	21.4	22.3	22.9	23.2	23.4	23.5	23.5	23.5	23.4	23.0	22.5
	Sk	-5.8	-4.0	-1.3	1.2	-4.4	-2.6	-0.7	-0.1	1.1	10.0	5.8	8.3
Askey N 60.5, E 5.2	Az	150.4	154.0	159.2	164.0	167.6	171.1	174.5	175.6	177.9	180.5	186.9	191.7
	El	17.9	18.7	19.7	20.4	20.8	21.1	21.3	21.3	21.4	21.4	21.2	20.9
	Sk	-6.6	-5.0	-2.6	-0.3	-6.1	-4.4	-2.7	-2.2	-1.0	7.7	3.4	5.7
Bærum N 59.9, E 10.5	Az	156.1	159.8	165.1	170.0	173.7	177.1	180.6	181.7	184.0	186.6	193.0	197.8
	El	19.7	20.4	21.1	21.6	21.9	22.0	22.0	22.0	22.0	21.9	21.4	20.8
	Sk	-4.2	-2.5	0.1	2.5	-3.2	-1.5	0.3	0.9	2.0	10.8	6.5	8.8
Bergen N 60.4, E 5.3	Az	150.5	154.1	159.3	164.1	167.7	171.2	174.6	175.8	178.1	180.6	187.0	191.8
	El	18.0	18.8	19.8	20.5	20.9	21.2	21.4	21.4	21.5	21.5	21.3	21.0
	Sk	-6.6	-5.0	-2.6	-0.3	-6.0	-4.4	-2.7	-2.1	-1.0	7.8	3.5	5.8
Drammen N 59.7, E 10.2	Az	155.7	159.4	164.7	169.6	173.3	176.8	180.2	181.4	183.7	186.3	192.7	197.5
	El	19.9	20.5	21.3	21.8	22.1	22.2	22.3	22.2	22.2	22.1	21.6	21.0
	Sk	-4.5	-2.7	-0.2	2.3	-3.4	-1.6	0.1	0.7	1.9	10.7	6.4	8.7
Førde N 61.4, E 5.9	Az	151.4	155.0	160.1	164.9	168.5	171.9	175.3	176.5	178.8	181.3	187.6	192.4
	El	17.3	18.0	18.9	19.6	19.9	20.2	20.4	20.4	20.5	20.5	20.2	19.9
	Sk	-5.8	-4.2	-1.9	0.4	-5.5	-3.9	-2.2	-1.7	-0.6	8.1	3.6	5.9
Fredrikstad N 59.2, E 11.0	Az	156.5	160.2	165.5	170.5	174.2	177.7	181.2	182.3	184.7	187.2	193.7	198.5
	El	20.5	21.2	21.9	22.4	22.6	22.8	22.8	22.8	22.7	22.6	22.0	21.4
	Sk	-4.3	-2.5	0.2	2.6	-3.0	-1.2	0.6	1.2	2.4	11.2	7.0	9.3
Gjøvik N 60.8, E 10.7	Az	156.5	160.1	165.4	170.3	173.9	177.4	180.8	182.0	184.2	186.8	193.1	197.9
	El	18.9	19.5	20.3	20.7	20.9	21.1	21.1	21.1	21.0	20.9	20.4	19.8
	Sk	-3.7	-2.0	0.4	2.8	-3.0	-1.3	0.4	1.0	2.1	10.8	6.4	8.6
Halden N 59.1, E 11.5	Az	157.0	160.7	166.1	171.1	174.8	178.3	181.8	182.9	185.2	187.8	194.3	199.1
	El	20.7	21.4	22.1	22.6	22.8	22.9	22.9	22.9	22.8	22.6	22.1	21.4
	Sk	-4.1	-2.3	0.4	2.9	-2.7	-0.9	0.9	1.5	2.7	11.5	7.3	9.7
Hamar N 60.8, E 11.1	Az	156.9	160.6	165.9	170.7	174.4	177.8	181.3	182.4	184.7	187.2	193.6	198.3
	El	19.0	19.6	20.3	20.8	21.0	21.1	21.1	21.1	21.0	20.9	20.4	19.8
	Sk	-3.5	-1.8	0.7	3.0	-2.7	-1.1	0.6	1.2	2.3	11.0	6.6	8.8
Haugesund N 59.4, E 5.3	Az	150.2	153.9	159.1	164.0	167.6	171.1	174.5	175.7	178.0	180.6	187.1	191.9
	El	19.0	19.8	20.8	21.5	22.0	22.3	22.5	22.5	22.6	22.6	22.4	22.0
	Sk	-7.1	-5.5	-3.0	-0.6	-6.3	-4.5	-2.8	-2.2	-1.0	7.8	3.6	6.0
Kristiansand N 58.1, E 8.0	Az	152.9	156.6	161.9	166.9	170.6	174.1	177.6	178.8	181.2	183.8	190.3	195.2
	El	20.9	21.7	22.6	23.2	23.6	23.8	23.9	24.0	24.0	23.9	23.5	23.0
	Sk	-6.4	-4.6	-1.9	0.6	-5.0	-3.1	-1.2	-0.6	0.6	9.5	5.4	8.0
Larvik N 59.1, E 10.0	Az	155.3	159.0	164.4	169.3	173.0	176.5	180.0	181.2	183.5	186.1	192.5	197.3
	El	20.4	21.1	21.9	22.4	22.7	22.8	22.9	22.9	22.8	22.7	22.3	21.7
	Sk	-4.9	-3.1	-0.5	2.0	-3.6	-1.8	0.0	0.6	1.8	10.6	6.4	8.8
Moss N 59.5, E 10.7	Az	156.2	159.9	165.2	170.2	173.9	177.3	180.8	182.0	184.3	186.8	193.3	198.1
	El	20.2	20.8	21.6	22.1	22.3	22.4	22.5	22.5	22.4	22.3	21.8	21.1
	Sk	-4.3	-2.5	0.1	2.5	-3.1	-1.4	0.4	1.0	2.2	11.0	6.7	9.1
Oslo N 60.0, E 10.8	Az	156.4	160.1	165.4	170.3	174.0	177.5	180.9	182.1	184.4	186.9	193.3	198.1
	El	19.7	20.3	21.1	21.6	21.8	21.9	21.9	21.9	21.9	21.7	21.2	20.6
	Sk	-4.0	-2.3	0.3	2.7	-3.0	-1.3	0.5	1.0	2.2	11.0	6.6	8.9
Porsgrunn/Skien N 59.1, E 9.7	Az	155.0	158.7	164.0	169.0	172.7	176.2	179.7	180.8	183.2	185.7	192.2	197.0
	El	20.3	21.0	21.8	22.4	22.7	22.8	22.9	22.9	22.9	22.8	22.3	21.7
	Sk	-5.0	-3.3	-0.6	1.9	-3.8	-2.0	-0.2	0.4	1.6	10.4	6.2	8.6
Ringsaker N 61.0, E 10.8	Az	156.6	160.3	165.6	170.4	174.1	177.5	180.9	182.1	184.3	186.9	193.2	197.9
	El	18.7	19.4	20.1	20.5	20.7	20.9	20.9	20.9	20.8	20.7	20.2	19.6
	Sk	-3.6	-1.9	0.6	2.9	-2.9	-1.2	0.4	1.0	2.1	10.8	6.4	8.6
Sandefjord N 59.1, E 10.2	Az	155.6	159.3	164.6	169.5	173.3	176.7	180.2	181.4	183.7	186.3	192.8	197.6
	El	20.4	21.1	21.9	22.4	22.7	22.9	22.9	22.9	22.8	22.7	22.2	21.6
	Sk	-4.8	-3.0	-0.3	2.2	-3.5	-1.7	0.1	0.7	1.9	10.7	6.5	8.9
Skien N 59.2, E 9.6	Az	154.9	158.6	163.9	168.9	172.6	176.0	179.5	180.7	183.0	185.6	192.1	196.9
	El	20.2	20.9	21.7	22.3	22.6	22.7	22.8	22.8	22.8	22.7	22.2	21.6
	Sk	-5.0	-3.3	-0.7	1.8	-3.8	-2.0	-0.2	0.4	1.6	10.4	6.1	8.6
Stavanger N 59.0, E 5.7	Az	150.6	154.2	159.5	164.4	168.0	171.5	175.0	176.2	178.5	181.1	187.6	192.4
	El	19.4	20.3	21.3	22.0	22.4	22.7	22.9	22.9	23.0	23.0	22.8	22.4
	Sk	-7.2	-5.5	-2.9	-0.5	-6.1	-4.4	-2.6	-2.0	-0.8	8.0	3.9	6.4
Stjørdal N 63.5, E 11.2	Az	157.5	161.1	166.3	171.1	174.6	178.0	181.3	182.5	184.7	187.1	193.4	198.0
	El	16.4	16.9	17.6	18.0	18.1	18.2	18.2	18.2	18.2	18.1	17.6	17.1
	Sk	-2.3	-0.8	1.4	3.5	-2.4	-0.9	0.6	1.1	2.1	10.7	5.9	7.9
Tønsberg N 59.3, E 10.4	Az	155.8	159.5	164.9	169.8	173.5	177.0	180.5	181.6	184.0	186.5	193.0	197.8
	El	20.3	21.0	21.7	22.3	22.5	22.6	22.7	22.7	22.6	22.5	22.0	21.4
	Sk	-4.6	-2.8	-0.2	2.3	-3.3	-1.5	0.2	0.8	2.0	10.8	6.6	9.0
Trondheim N 63.4, E 10.4	Az	156.7	160.3	165.4	170.2	173.7	177.1	180.5	181.6	183.8	186.3	192.5	197.1
	El	16.4	16.9	17.6	18.0	18.2	18.3	18.3	18.3	18.3	18.2	17.8	17.3
	Sk	-2.7	-1.2	1.0	3.1	-2.8	-1.3	0.2	0.7	1.7	10.3	5.6	7.6

Spain

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat	ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 9	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W	Hispasat
		42.0° East	31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	9.0° East	4.8° East	0.8° West	5.0° West	30.0° West
Albacete N 39.0, W 1.8	Az	123.3	133.8	137.5	143.1	148.6	153.0	157.2	163.1	169.6	178.7	185.1	220.4
	El	26.3	33.2	35.2	37.8	39.8	41.2	42.3	43.5	44.3	44.8	44.7	36.2
	Sk	-40.5	-27.1	-24.7	-20.8	-16.0	-20.7	-17.5	-13.0	-8.1	-1.0	3.9	30.3
Alicante N 38.4, W 0.5	Az	124.1	134.8	138.6	144.4	150.0	154.5	158.9	164.9	171.5	180.8	187.2	222.3
	El	27.6	34.5	36.4	39.0	41.0	42.3	43.3	44.4	45.2	45.5	45.3	36.0
	Sk	-40.4	-26.8	-24.2	-20.2	-16.0	-19.7	-16.4	-11.8	-6.7	0.6	5.7	31.9
Almeria N 36.9, W 2.5	Az	121.4	131.7	135.3	140.9	146.5	150.9	155.2	161.3	168.0	177.5	184.2	220.9
	El	27.0	34.4	36.5	39.2	41.5	43.0	44.2	45.5	46.5	47.2	47.1	38.4
	Sk	-43.0	-29.7	-27.2	-23.3	-19.2	-22.9	-19.6	-14.9	-9.6	-2.0	3.3	31.6
Barcelona N 41.4, E 2.2	Az	128.4	139.7	143.6	149.5	155.2	159.6	163.9	169.8	176.1	184.8	190.8	223.6
	El	27.5	33.6	35.3	37.4	39.1	40.1	40.9	41.7	42.1	42.1	41.6	32.0
	Sk	-36.0	-22.0	-19.4	-15.4	-11.4	-15.1	-12.0	-7.7	-3.0	3.6	8.1	31.2
Bilbao N 43.5, W 2.9	Az	124.5	135.1	138.7	144.1	149.4	153.5	157.4	162.9	168.9	177.2	183.1	216.7
	El	23.0	29.3	31.1	33.4	35.3	36.5	37.5	38.6	39.5	40.0	40.0	33.1
	Sk	-36.8	-23.9	-21.7	-18.3	-14.8	-19.0	-16.2	-12.3	-8.1	-2.0	2.2	25.8
Cartagena N 37.6, W 1.0	Az	123.2	133.8	137.5	143.2	148.9	153.4	157.8	163.9	170.6	180.0	186.5	222.3
	El	27.7	34.8	36.8	39.4	41.5	42.9	44.0	45.2	46.0	46.4	46.2	36.9
	Sk	-41.5	-27.9	-25.4	-21.3	-17.2	-20.8	-17.4	-12.7	-7.5	0.0	5.2	32.2
Cordoba N 37.8, W 4.8	Az	119.9	129.8	133.3	138.7	144.0	148.2	152.4	158.2	164.6	173.8	180.3	217.5
	El	24.9	32.2	34.3	37.2	39.5	41.1	42.4	43.9	45.0	46.0	46.2	38.9
	Sk	-43.2	-30.4	-28.1	-24.4	-20.7	-24.6	-21.5	-17.1	-12.1	-4.9	0.3	28.8
Gijón N 43.5, W 5.7	Az	122.1	132.2	135.7	140.9	146.0	150.0	153.8	159.1	164.9	173.2	179.0	213.3
	El	21.1	27.6	29.5	31.9	33.9	35.3	36.4	37.7	38.7	39.6	39.8	34.2
	Sk	-37.9	-25.5	-23.4	-20.2	-16.9	-21.3	-18.7	-15.0	-10.9	-4.9	-0.7	23.4
Granada N 37.2, W 3.6	Az	120.6	130.7	134.3	139.8	145.2	149.5	153.8	159.7	166.3	175.7	182.3	219.4
	El	26.1	33.4	35.5	38.4	40.7	42.2	43.5	44.9	46.0	46.8	46.8	38.7
	Sk	-43.3	-30.2	-27.8	-24.0	-20.1	-23.8	-20.6	-16.0	-10.9	-3.4	1.8	30.4
Hospitalet de Llobregat N 41.4, E 2.1	Az	128.3	139.6	143.5	149.4	155.1	159.5	163.8	169.6	175.9	184.7	190.7	223.5
	El	27.4	33.6	35.3	37.4	39.1	40.1	40.9	41.6	42.1	42.1	41.6	32.1
	Sk	-36.0	-22.1	-19.5	-15.5	-11.4	-15.2	-12.1	-7.8	-3.1	3.5	8.0	31.1
Ibiza N 38.9, E 1.4	Az	126.2	137.3	141.2	147.1	152.9	157.5	161.9	168.0	174.6	183.8	190.1	224.2
	El	28.6	35.2	37.1	39.4	41.3	42.5	43.4	44.3	44.8	44.9	44.5	34.5
	Sk	-38.9	-24.9	-22.2	-18.0	-13.8	-17.4	-14.0	-9.3	-4.2	3.0	7.9	32.9
Las Palmas N 28.1, W 15.4	Az	106.8	113.8	116.3	120.3	124.3	127.7	131.1	136.1	142.0	151.4	158.7	208.9
	El	20.2	29.5	32.4	36.4	39.9	42.4	44.7	47.6	50.3	53.5	55.2	53.4
	Sk	-57.6	-46.8	-45.3	-42.6	-39.8	-44.3	-41.7	-37.7	-32.9	-25.0	-18.7	25.3
Madrid N 40.4, W 3.7	Az	122.3	132.6	136.2	141.6	146.9	151.1	155.2	160.8	167.0	175.8	182.0	217.3
	El	24.2	31.0	33.0	35.6	37.7	39.1	40.2	41.5	42.5	43.2	43.3	36.0
	Sk	-40.1	-27.1	-24.8	-21.2	-17.6	-21.6	-18.7	-14.5	-9.9	-3.2	1.5	27.5
Malaga N 36.7, W 4.4	Az	119.6	129.5	133.1	138.5	143.8	148.1	152.3	158.3	164.8	174.3	181.0	218.7
	El	25.7	33.2	35.4	38.3	40.7	42.3	43.6	45.1	46.3	47.3	47.4	39.6
	Sk	-44.2	-31.2	-28.9	-25.1	-21.2	-25.1	-21.9	-17.3	-12.1	-4.6	0.8	30.1
Palma de Mallorca N 39.6, E 2.7	Az	127.9	139.2	143.2	149.2	155.1	159.7	164.1	170.2	176.7	185.8	192.0	225.2
	El	29.0	35.4	37.1	39.4	41.1	42.1	42.9	43.7	44.1	44.0	43.5	33.1
	Sk	-37.4	-23.2	-20.5	-16.2	-12.0	-15.5	-12.2	-7.6	-2.5	4.5	9.2	33.2
Salamanca N 41.0, W 5.7	Az	120.8	130.8	134.3	139.6	144.7	148.8	152.7	158.2	164.2	172.9	178.9	214.5
	El	22.5	29.4	31.4	34.0	36.2	37.7	38.9	40.3	41.4	42.4	42.6	36.5
	Sk	-40.4	-27.8	-25.7	-22.3	-18.8	-23.0	-20.3	-16.3	-11.8	-5.4	-0.8	25.3
Santa Cruz de la Palma N 28.7, W 17.8	Az	105.6	112.4	114.9	118.7	122.5	125.7	128.9	133.6	139.1	147.8	154.7	204.2
	El	17.9	27.2	30.0	34.0	37.6	40.2	42.5	45.4	48.3	51.7	53.7	53.9
	Sk	-57.7	-47.2	-45.7	-43.3	-40.7	-45.5	-43.1	-39.5	-35.1	-27.8	-22.0	21.1
Santa Cruz de Tenerife N 28.5, W 16.3	Az	106.4	113.4	115.9	119.8	123.8	127.1	130.4	135.3	141.0	150.2	157.3	207.1
	El	19.3	28.5	31.4	35.4	38.9	41.5	43.8	46.7	49.4	52.7	54.5	53.5
	Sk	-57.5	-46.8	-45.2	-42.7	-39.9	-44.5	-42.0	-38.2	-33.6	-25.9	-19.8	23.6
Santander N 43.5, W 3.9	Az	123.7	134.1	137.7	143.0	148.2	152.3	156.2	161.6	167.5	175.8	181.6	215.4
	El	22.3	28.6	30.4	32.8	34.7	36.0	37.0	38.2	39.1	39.7	39.8	33.4
	Sk	-37.1	-24.4	-22.3	-18.9	-15.5	-19.7	-17.0	-13.2	-9.1	-3.1	1.2	24.9
Sevilla N 37.4, W 6.0	Az	118.7	128.4	131.8	137.0	142.2	146.4	150.5	156.2	162.6	171.8	178.4	216.2
	El	24.2	31.7	33.9	36.8	39.2	40.9	42.3	43.9	45.2	46.3	46.6	39.9
	Sk	-44.2	-31.5	-29.3	-25.8	-22.1	-26.1	-23.1	-18.7	-13.8	-6.5	-1.3	28.0
Valencia N 39.3, W 0.7	Az	124.5	135.2	138.9	144.6	150.3	154.7	159.0	164.9	171.4	180.5	186.8	221.5
	El	26.9	33.7	35.6	38.1	40.0	41.3	42.3	43.4	44.2	44.5	44.3	35.4
	Sk	-39.6	-26.1	-23.6	-19.6	-15.6	-19.4	-16.1	-11.6	-6.7	0.4	5.2	30.9
Valladolid N 41.6, W 4.7	Az	122.0	132.2	135.7	141.1	146.3	150.4	154.3	159.8	165.9	174.4	180.5	215.5
	El	22.8	29.6	31.5	34.0	36.1	37.5	38.7	39.9	41.0	41.8	41.9	35.5
	Sk	-39.3	-26.6	-24.5	-21.0	-17.5	-21.7	-18.9	-14.9	-10.5	-4.2	0.3	25.7
Vigo N 42.2, W 8.7	Az	118.8	128.5	131.8	136.9	141.8	145.6	149.4	154.6	160.3	168.6	174.5	210.1
	El	19.8	26.7	28.7	31.4	33.7	35.2	36.5	38.1	39.4	40.6	41.1	36.7
	Sk	-40.5	-28.4	-26.5	-23.4	-20.3	-24.7	-22.2	-18.5	-14.4	-8.4	-4.1	21.8
Zaragoza N 41.6, W 1.0	Az	125.5	136.2	139.9	145.5	151.0	155.3	159.4	165.1	171.3	180.0	186.0	219.9
	El	25.3	31.7	33.5	35.8	37.7	38.9	39.9	40.9	41.6	41.9	41.8	33.6
	Sk	-37.5	-24.2	-21.8	-18.0	-14.3	-18.2	-15.2	-11.1	-6.5	0.0	4.5	28.6

Sweden

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		ASTRA 5	ASTRA 2	ASTRA 3	ASTRA 1	Eutelsat 16	Eutelsat Hotbird 13	Eutelsat 10	Eutelsat 9	Eutelsat 7	SES 5 / ASTRA 4	Thor / Intelsat 10 02	Eutelsat 5W
		31.5° East	28.2° East	23.5° East	19.2° East	16.0° East	13.0° East	10.0° East	9.0° East	7.0° East	4.8° East	0.8° West	5.0° West
Arvidsjaur N 65.6, E 19.1	Az	166.4	170.0	175.2	179.9	183.4	186.7	190.0	191.1	193.3	195.6	201.9	206.2
	El	15.4	15.7	16.0	16.0	16.0	15.9	15.7	15.6	15.4	15.2	14.4	13.7
	Sk	1.4	2.9	5.0	7.0	1.4	2.8	4.1	4.6	5.4	6.4	8.9	10.5
Borås N 57.7, E 12.9	Az	158.3	162.1	167.5	172.6	176.3	179.9	183.4	184.6	187.0	189.6	196.3	200.9
	El	22.4	23.0	23.7	24.2	24.3	24.4	24.3	24.3	24.2	24.0	23.3	22.5
	Sk	-4.4	-2.5	0.4	3.0	-2.0	-0.1	1.8	2.5	3.7	5.1	8.6	11.0
Borlänge N 60.5, E 15.4	Az	161.7	165.4	170.7	175.6	179.3	182.8	186.2	187.3	189.6	192.1	198.7	203.1
	El	20.1	20.6	21.1	21.3	21.4	21.4	21.3	21.2	21.0	20.8	20.0	19.3
	Sk	-1.9	-0.1	2.4	4.9	-0.3	1.4	3.1	3.6	4.7	5.9	9.1	11.2
Falkenberg N 56.9, E 12.5	Az	157.7	161.5	166.9	172.0	175.8	179.4	183.0	184.2	186.6	189.2	196.0	200.6
	El	23.1	23.8	24.5	25.0	25.2	25.2	25.2	25.2	25.1	24.9	24.1	23.4
	Sk	-5.0	-3.0	-0.1	2.7	-2.3	-0.3	1.6	2.3	3.6	5.0	8.7	11.1
Gävle N 60.7, E 17.1	Az	163.6	167.3	172.7	177.6	181.3	184.7	188.1	189.3	191.5	194.0	200.6	205.0
	El	20.1	20.6	21.0	21.2	21.2	21.1	20.9	20.9	20.7	20.4	19.5	18.7
	Sk	-0.9	0.8	3.4	5.8	0.6	2.3	4.0	4.5	5.6	6.8	9.9	11.9
Göteborg N 57.8, E 12.0	Az	157.3	161.1	166.5	171.5	175.3	178.8	182.4	183.5	185.9	188.5	195.3	199.9
	El	22.1	22.8	23.5	24.0	24.2	24.3	24.3	24.2	24.1	24.0	23.3	22.6
	Sk	-4.9	-3.0	-0.2	2.5	-2.5	-0.6	1.3	1.9	3.1	4.5	8.1	10.4
Helsingborg N 56.1, E 12.8	Az	157.8	161.6	167.2	172.3	176.2	179.8	183.4	184.6	187.0	189.6	196.5	201.2
	El	23.9	24.6	25.4	25.8	26.0	26.1	26.0	26.0	25.9	25.7	24.9	24.1
	Sk	-5.2	-3.1	-0.1	2.7	-2.2	-0.1	1.9	2.6	3.9	5.3	9.1	11.6
Jönköping N 57.8, E 14.2	Az	159.8	163.6	169.1	174.1	177.9	181.4	185.0	186.1	188.5	191.1	197.8	202.4
	El	22.6	23.1	23.8	24.1	24.3	24.3	24.2	24.1	24.0	23.8	22.9	22.2
	Sk	-3.6	-1.7	1.2	3.9	-1.1	0.8	2.6	3.3	4.5	5.9	9.4	11.7
Kalmar N 56.7, E 16.3	Az	162.0	165.9	171.4	176.5	180.4	184.0	187.5	188.7	191.1	193.7	200.2	205.0
	El	24.1	24.6	25.1	25.4	25.5	25.4	25.2	25.1	24.9	24.7	23.7	22.8
	Sk	-2.3	-0.2	2.8	5.6	0.2	2.2	4.1	4.8	6.1	15.0	10.9	13.4
Karlstad N 59.4, E 13.5	Az	159.3	163.1	168.4	173.4	177.1	180.6	184.1	185.2	187.5	190.1	196.7	201.2
	El	20.8	21.4	22.0	22.4	22.5	22.6	22.5	22.5	22.3	22.2	21.4	20.7
	Sk	-3.4	-1.5	1.1	3.6	-1.5	0.3	2.1	2.7	3.8	5.1	8.4	10.6
Kristianstad N 56.0, E 14.2	Az	159.4	163.3	168.8	174.0	177.8	181.5	185.1	186.3	188.7	191.3	198.2	202.8
	El	24.4	25.0	25.7	26.0	26.2	26.2	26.1	26.0	25.9	25.6	24.8	23.9
	Sk	-4.3	-2.3	0.8	3.6	-1.2	0.8	2.8	3.5	4.8	6.3	10.0	12.5
Lidköping N 58.5, E 13.2	Az	158.8	162.6	168.0	173.0	176.7	180.2	183.8	184.9	187.3	189.8	196.5	201.1
	El	21.7	22.3	22.9	23.3	23.5	23.5	23.5	23.4	23.3	23.1	22.4	21.7
	Sk	-3.9	-2.0	0.8	3.3	-1.7	0.1	2.0	2.6	3.8	5.1	8.6	10.8
Linköping N 58.4, E 15.6	Az	161.5	165.3	170.8	175.8	179.5	183.1	186.6	187.7	190.1	192.6	199.3	203.8
	El	22.2	22.7	23.3	23.6	23.6	23.6	23.5	23.4	23.2	23.0	22.1	21.3
	Sk	-2.6	-0.6	2.2	4.8	-0.3	1.6	3.4	4.0	5.3	6.6	10.0	12.2
Malmö N 55.6, E 13.0	Az	157.9	161.8	167.3	172.5	176.4	180.0	183.6	184.8	187.3	189.9	196.8	201.5
	El	24.5	25.2	25.9	26.4	26.6	26.6	26.5	26.4	26.2	25.4	24.6	24.6
	Sk	-5.3	-3.2	-0.1	2.8	-2.1	0.0	2.1	2.7	4.1	5.6	9.4	12.0
Norrköping N 58.6, E 16.2	Az	162.2	166.0	171.5	176.5	180.2	183.8	187.3	188.4	190.7	193.3	199.9	204.4
	El	22.1	22.6	23.1	23.4	23.4	23.4	23.2	23.1	22.9	22.7	21.8	20.9
	Sk	-2.2	-0.2	2.6	5.2	0.1	2.0	3.8	4.4	5.6	6.9	10.2	12.5
Stockholm N 59.3, E 18.1	Az	164.5	168.3	173.7	178.7	182.4	185.9	189.4	190.6	192.9	195.4	201.9	206.4
	El	21.7	22.1	22.5	22.7	22.7	22.5	22.3	22.2	22.0	21.7	20.7	19.8
	Sk	-0.8	1.1	3.8	6.4	1.3	3.0	4.8	5.4	6.5	7.8	11.0	13.1
Sundsväl N 62.4, E 17.2	Az	164.0	167.6	172.9	177.7	181.4	184.7	188.1	189.2	191.5	193.9	200.4	204.7
	El	18.4	18.8	19.2	19.4	19.4	19.3	19.2	19.1	18.9	18.7	17.8	17.1
	Sk	-0.4	1.3	3.7	6.0	0.6	2.2	3.8	4.3	5.3	6.4	9.3	11.2
Umeå N 63.8, E 21.2	Az	168.6	172.2	177.4	182.2	185.8	189.1	192.4	193.6	195.8	198.2	204.5	208.7
	El	17.5	17.7	17.9	17.9	17.8	17.6	17.4	17.3	17.0	16.7	15.8	14.9
	Sk	2.0	3.6	5.9	8.0	2.6	4.0	5.5	5.9	6.9	7.9	10.5	12.3
Uppsala N 59.9, E 17.6	Az	164.0	167.8	173.2	178.2	181.9	185.3	188.8	189.9	192.2	194.7	201.3	205.7
	El	21.0	21.4	21.9	22.0	22.0	21.9	21.7	21.6	21.4	21.2	20.2	19.4
	Sk	-0.9	0.9	3.6	6.1	0.9	2.7	4.4	5.0	6.1	7.3	10.5	12.6
Visby (Gotland) N 57.6, E 18.3	Az	164.5	168.3	173.9	178.9	182.7	186.3	189.8	191.0	193.3	195.9	202.5	207.0
	El	23.5	23.9	24.3	24.5	24.5	24.3	24.1	24.0	23.7	23.4	22.3	21.4
	Sk	-1.3	0.8	3.7	6.4	1.5	3.4	5.2	5.9	7.1	8.4	11.9	14.1
Västervik N 57.7, E 16.6	Az	162.5	166.4	171.9	176.9	180.7	184.3	187.8	189.0	191.3	193.9	200.6	205.1
	El	23.1	23.6	24.1	24.3	24.4	24.3	24.1	24.0	23.8	23.6	22.6	21.7
	Sk	-2.2	-0.2	2.7	5.4	0.4	2.3	4.2	4.8	6.0	7.4	10.8	13.1
Växjö N 56.9, E 14.6	Az	160.1	163.9	169.4	174.5	178.3	181.9	185.5	186.7	189.1	191.7	198.4	203.0
	El	23.5	24.1	24.8	25.1	25.2	25.2	25.1	25.0	24.9	24.7	23.8	23.0
	Sk	-3.7	-1.7	1.2	4.0	-0.9	1.0	3.0	3.6	4.9	6.3	9.9	12.3
Örebro N 59.3, E 15.1	Az	161.1	164.9	170.3	175.2	179.0	182.4	185.9	187.1	189.4	191.9	198.6	203.1
	El	21.2	21.7	22.3	22.6	22.7	22.7	22.5	22.5	22.3	22.1	21.3	20.5
	Sk	-2.5	-0.7	2.0	4.6	-0.5	1.3	3.0	3.6	4.8	6.1	9.4	11.5
Östersund N 63.6, E 14.7	Az	161.4	165.0	170.2	175.0	178.6	181.9	185.2	186.4	188.6	191.0	197.4	201.8
	El	16.9	17.3	17.8	18.0	18.1	18.1	18.0	18.0	17.9	17.7	17.0	16.4
	Sk	-1.2	0.4	2.7	4.8	-0.7	0.8	2.3	2.8	3.8	4.9	7.7	9.5

Switzerland

E=East Longitude W=West Longitude N= North Latitude S= South Latitude Az=Azimuth El=Elevation Sk=Skew

		Türksat 42.0° East	ASTRA 5 31.5° East	ASTRA 2 28.2° East	ASTRA 3 23.5° East	ASTRA 1 19.2° East	Eutelsat 16 16.0° East	Eutelsat Hotbird 13 13.0° East	Eutelsat 9 9.0° East	SES 5 / ASTRA 4 4.8° East	Thor / Intelsat 10 02 0.8° West	Eutelsat 5W 5.0° West	Hispasat 30.0° West
Basel N 47.6, E 7.6	Az	137.2	149.0	153.0	158.9	164.5	168.7	172.7	178.1	183.8	191.6	196.8	226.2
	El	26.0	30.6	31.8	33.2	34.2	34.7	35.1	35.29	35.2	34.7	33.9	24.4
	Sk	-27.3	-13.3	-10.8	-7.0	-3.4	-7.6	-4.9	-1.28	2.6	7.8	11.3	29.1
Bern N 47.0, E 7.4	Az	136.7	148.6	152.6	158.5	164.1	168.3	172.4	177.81	183.6	191.4	196.7	226.3
	El	26.4	31.1	32.3	33.7	34.7	35.3	35.7	35.94	35.9	35.3	34.6	24.9
	Sk	-27.9	-13.9	-11.3	-7.5	-3.8	-7.9	-5.2	-1.49	2.4	7.8	11.3	29.5
Biel N 46.5, E 8.2	Az	137.3	149.3	153.4	159.3	165.0	169.3	173.4	178.9	184.7	192.6	197.9	227.3
	El	27.2	31.8	33.0	34.4	35.4	36.0	36.3	36.51	36.4	35.8	35.0	24.9
	Sk	-27.8	-13.6	-11.0	-7.1	-3.3	-7.3	-4.5	-0.76	3.2	8.6	12.2	30.4
Genf N 46.2, E 6.2	Az	135.0	146.8	150.8	156.7	162.3	166.5	170.6	176.12	181.9	189.9	195.3	225.4
	El	26.4	31.3	32.6	34.2	35.3	36.0	36.4	36.78	36.8	36.4	35.7	26.2
	Sk	-29.3	-15.3	-12.8	-8.9	-5.2	-9.3	-6.5	-2.68	1.3	6.9	10.6	29.5
Köniz N 46.9, E 7.4	Az	136.6	148.5	152.5	158.4	164.0	168.3	172.4	177.81	183.6	191.4	196.8	226.3
	El	26.4	31.2	32.4	33.8	34.9	35.4	35.8	36.05	36.0	35.5	34.7	25.0
	Sk	-28.0	-13.9	-11.4	-7.6	-3.8	-8.0	-5.2	-1.5	2.4	7.8	11.4	29.6
Lausanne N 46.5, E 6.7	Az	135.7	147.5	151.5	157.4	163.0	167.3	171.4	176.83	182.6	190.6	195.9	225.8
	El	26.4	31.2	32.5	34.0	35.1	35.7	36.2	36.47	36.5	36.0	35.3	25.7
	Sk	-28.7	-14.7	-12.2	-8.3	-4.6	-8.7	-6.0	-2.18	1.8	7.3	10.9	29.6
Locarno N 46.2, E 8.8	Az	137.8	149.9	154.0	160.0	165.7	170.1	174.2	179.72	185.5	193.5	198.8	228.1
	El	27.7	32.3	33.5	34.9	35.9	36.4	36.7	36.85	36.7	36.0	35.1	24.8
	Sk	-27.7	-13.3	-10.7	-6.7	-2.8	-6.9	-4.0	-0.19	3.8	9.3	12.9	31.0
Luzern N 47.0, E 7.9	Az	137.2	149.2	153.2	159.1	164.7	169.0	173.0	178.5	184.2	191.8	197.4	226.8
	El	26.6	31.3	32.4	33.8	34.8	35.4	35.7	36.0	35.9	35.3	34.5	24.7
	Sk	-27.6	-13.0	-10.4	-6.6	-2.9	-7.5	-4.7	-1.0	10.4	8.0	11.8	29.8
Sankt Gallen N 47.4, E 9.4	Az	139.0	151.1	155.2	161.2	166.8	171.1	175.1	180.54	186.2	194.0	199.2	228.1
	El	27.0	31.4	32.5	33.8	34.7	35.2	35.4	35.53	35.3	34.6	33.7	23.6
	Sk	-26.4	-12.1	-9.5	-5.6	-1.9	-6.0	-3.3	0.37	4.2	9.4	12.9	30.3
Thun N 46.8, E 7.6	Az	136.8	148.7	152.7	158.7	164.3	168.6	172.6	178.08	183.8	191.7	197.1	226.6
	El	26.6	31.3	32.5	34.0	35.0	35.6	35.9	36.17	36.1	35.5	34.8	25.0
	Sk	-28.0	-13.8	-11.3	-7.4	-3.7	-7.8	-5.1	-1.31	2.6	8.0	11.6	29.8
Winterthur N 47.5, E 8.8	Az	138.4	150.4	154.5	160.4	166.0	170.3	174.3	179.73	185.4	193.2	198.4	227.5
	El	26.7	31.1	32.2	33.6	34.5	35.0	35.3	35.42	35.3	34.6	33.8	23.8
	Sk	-26.7	-12.5	-9.9	-6.1	-2.4	-6.6	-3.8	-0.18	3.7	8.9	12.3	29.9
Zürich N 47.4, E 8.6	Az	138.2	150.2	154.2	160.1	165.7	170.0	174.0	179.46	185.2	192.9	198.2	227.3
	El	26.6	31.1	32.3	33.6	34.6	35.1	35.4	35.53	35.4	34.7	33.9	24.0
	Sk	-26.9	-12.7	-10.1	-6.3	-2.6	-6.8	-4.0	-0.37	3.5	8.7	12.2	29.8