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September 21, 2006

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Ms. Marlene H. Dortch
 Secretary
 Federal Communications Commission
 445 12th Street, S.W.
 Washington, D.C. 20554

Re: *Review of the Spectrum Sharing Plan among Non-Geostationary Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands, IB Docket No. 02-364*

Dear Ms. Dortch:

Globalstar, Inc. (“Globalstar”) submits this response to the recent *ex parte* submissions by Iridium in the above-referenced proceeding.^{1/} In its recent filings and visits with Commission staff, Iridium has mischaracterized statements made by Globalstar in unrelated pleadings. Iridium has not substantiated any need for access to more of Globalstar’s assigned spectrum.^{2/} If the Commission concludes, despite Iridium’s repeated failure to demonstrate that it needs access to more of Globalstar’s spectrum, that sharing of L-band MSS spectrum is required in the public interest, it should authorize both Globalstar and Iridium to use all of the L-band MSS spectrum that they are technically capable of using, subject to appropriate coordination arrangements.

As Globalstar has argued in the past, such coordinated use is not “sharing” in the traditional sense, since a CDMA carrier and a TDMA carrier cannot *share* spectrum, but rather must coordinate with each other on a channel-by-channel basis to avoid interference.^{3/}

^{1/} See Iridium *Ex Parte* Filing of August 2, 2006 (“*Iridium August 2nd Ex Parte*”); Iridium *Ex Parte* Filing of August 3, 2006 (“*Iridium August 3rd Ex Parte*”); Iridium *Ex Parte* Filing of August 10, 2006 (“*Iridium August 10th Ex Parte*”).

^{2/} See *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (U.S. 1983) (the agency must provide a rational connection between the record and its decision and the decision must not run counter to the evidence before it) (*citations omitted*); *AT&T Corp. v. FCC*, 113 F.3d 225, 229 (D.C. Cir. 1997). See also *Continental Air Lines, Inc. v. Civil Aeronautics Bd.*, 519 F.2d 944, 957 (D.C. Cir. 1975) (a decision contrary to the evidence in the record indicates an improper “‘results-oriented’ rationalization”)(*citations omitted*).

^{3/} See, e.g., Globalstar LLC, Petition for Reconsideration, IB Docket No. 02-364, ET Docket No. 00-258, at 5-6 (filed Sept. 8, 2004) (“*Globalstar September 8, 2004 Petition for Reconsideration*”) (“While Globalstar and Iridium certainly can *coordinate usage* of spectrum,

As has been true throughout this proceeding, Iridium continues to evade its obligation to show why it needs access to more of Globalstar's spectrum, or to rebut Globalstar's proof that it is not using that portion of Globalstar's spectrum to which it has had access since 2004. Iridium has provided no response for the record to Globalstar's technical submissions demonstrating (a) that Iridium is not significantly utilizing the spectrum to which it already has access, and (b) that its asserted need for additional spectrum is nonexistent, or at most highly sporadic.^{4/} Instead, the premise of Iridium's most recent filings appears to be that, because Globalstar has designed its system in a manner that enables it to make the most efficient and flexible use of its assigned spectrum, granting Iridium access to more of Globalstar's spectrum even though it does not need it is somehow justified. To the extent that Iridium argues that Globalstar will not be hurt but Iridium will be helped, Iridium is flat wrong. Iridium disregards the very real harm to Globalstar's 250,000 subscribers that would result if Globalstar's service quality were diminished by additional use of its spectrum by Iridium.

As the Commission has acknowledged, Globalstar — unlike Iridium — must accommodate a variety of other in-band and adjacent-band incumbent operations.^{5/} For this very reason, coupled with Iridium's inability to show that it needed more spectrum, the Commission two years ago rejected Iridium's request for access to more of Globalstar's spectrum.^{6/} Nothing has changed since then. As Globalstar repeatedly has shown, in order to provide reliable service to its aviation customers, who represent a significant and growing segment of its customer base,

the two systems cannot *share* the spectrum co-frequency, co-coverage in the same way that, for example, two systems using [CDMA] technology can share frequencies.”).

^{4/} See, e.g., *Globalstar September 8, 2004 Petition for Reconsideration* at 5 (showing that “actual usage on the Iridium system indicates that Iridium is currently using less than 5% of its available spectrum in the Continental United States” and “availability of more spectrum (CDMA Channels 8 and 9) in the Middle East did not increase Iridium's capacity”); Globalstar LLC, Reply to Opposition of Iridium Satellite LLC, IB Docket No. 02-364, ET Docket No. 00-258, Technical Appendix (filed Nov. 10, 2004) (providing data revealing that *no* Iridium carriers were found in the 1618.25-1621.35 MHz band that already is subject to sharing).

^{5/} See Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands, *Report and Order, Fourth Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd. 13356 at ¶¶ 48-49 (2004) (“*L-Band Sharing Order*”) (“[E]ncumbrances in the lower portion of the L- band [in which Globalstar's provides service], for protecting RAS, for example, restricts the CDMA MSS operators' ability to provide services in that spectrum, particularly aviation services.”).

^{6/} See *Id.* at ¶ 49 (“The spectrum within the L-band is not equally encumbered. If the Commission implemented ‘spectrum parity’ on a pure megahertz-per-party basis, it would ignore the significant encumbrances that exist in the lower portion of the L-band due to RAS operations in that band as well as GPS receivers in the adjacent band.”).

it must have unencumbered access to at least two separate channels above 1616 MHz.^{7/} And as Globalstar's technical showings make clear, any further encumbrances on Globalstar's ability to use these channels would cause unacceptable and damaging interference to Globalstar's aviation customers.^{8/} Globalstar also uses these aviation channels for voice and data services "especially during times of emergency when increased demand ...requires Globalstar to focus its capacity on an affected area."^{9/} As a result, any requirement that Globalstar grant Iridium access to additional portions of its spectrum would impair Globalstar's ability not only to serve its aviation customers, but also to provide reliable communications to its public safety and other customers during times of emergency. This fact – which underscores that Globalstar is using its spectrum as efficiently as possible – provides no support for giving Iridium access to spectrum that it does not need and will not use.^{10/}

Iridium is wrong in suggesting that Globalstar's carriage of emergency voice and data traffic on the channels designated for aviation use demonstrates that it would not be a problem if

^{7/} See, e.g., Globalstar *Ex Parte* Submission in IB Docket No. 02-364 (filed April 17, 2006) ("*Globalstar April 7th Ex Parte*") at 1-2.

^{8/} See, e.g., *Globalstar April 7th Ex Parte* at 2 (citing and attaching Letter from Frank R. Williams, Vice President, SAGEM Avionics, Inc., to Michael K. Powell, Chairman, Federal Communications Commission filed in IB Docket No. 02-364 at 2 (Sept. 7, 2004)). Iridium inaccurately states that Globalstar's aviation services "are not safety of life services nor FAA flight communications" because they are "focused on voice and data traffic from airplanes and helicopters, allowing for voice calls to the ground and Internet connections." See *Iridium August 3rd Ex Parte* at 2. As Globalstar has demonstrated, its aviation products serve a vital purpose for aircraft communication on a day-to-day basis and during times of emergency, particularly in rural and remote areas. Moreover, a growing number of public safety officials, including among others the Department of Homeland Security, the U.S. Civil Air Patrol, the U.S. Air Force, and the U.S. Forest Service rely on Globalstar's aviation services. See *Globalstar April 7th Ex Parte* at 2.

^{9/} *Id.*

^{10/} Globalstar reminds the Commission that Iridium has no ability at present to control the use of these channels locally or regionally. If the Commission authorizes Iridium to use the band 1616-1618.25 MHz in the U.S., which is the limit of the Commission's authority, it will effectively be preempting every other regulatory administration around the world. Such a step is inconsistent with the U.S. Government's obligation to respect national borders in its licensing decisions. In this regard, Globalstar notes that the German government recently has complained to the Commission about interference from Iridium's system into Germany's radio astronomy operations. See Letter from Markus Schreiber to Federal Communications Commission, International Bureau (dated June 22, 2006) (attached as Exhibit 1) (reporting unwanted emissions from Iridium into the radio astronomy band 1610.6-1613.8 on a daily basis in violation of International Radio Regulations 15.10 and 15.11).

Iridium were granted access to these channels.^{11/} As Globalstar's un rebutted technical showings make clear, when the channels are being used for aviation services, use of the channels by Iridium would result in interference that would significantly impair Globalstar's ability to provide reliable, uninterrupted service to its aviation customers. Similarly, when Globalstar temporarily reassigns those channels in order to meet emergency needs for additional critical voice and data services in a specific area, as was the case following Hurricane Katrina, any usage by Iridium of the channels risks causing unacceptable interference to Globalstar's public safety customers. The competing exigent customer needs that Globalstar must try to satisfy in such circumstances make it all the more important to avoid interference from another user of the spectrum. Globalstar's reassigning of specific channels to meet increased demand during times of emergency is something within Globalstar's control; in contrast, if Iridium were permitted to use additional portions of Globalstar's spectrum, Globalstar would have *no* control in the face of interference from Iridium's operations and would be unable to adjust the use of its spectrum to ensure that service to its customers would not be impaired.

If the Commission concludes nonetheless that granting Iridium access to more of Globalstar's L-band MSS spectrum is required in the public interest, then that policy should be applied evenhandedly. In order not to discriminate unjustly against Globalstar, the Commission should authorize Globalstar and Iridium to jointly use all of the L-band MSS spectrum in the U.S. that they are technically capable of using, subject to appropriate coordination arrangements. Under such an approach, Iridium and Globalstar each would be able to use those portions of the spectrum between 1616 and 1626.5 MHz that it is technically capable of using, subject to coordination with the other.^{12/} Globalstar should be allowed to use the spectrum to provide ATC as an integrated element of its MSS services.^{13/}

^{11/} See, e.g., *Iridium August 3rd Ex Parte* at 1.

^{12/} Under their initial FCC authorizations, Globalstar's satellites are capable of operating across the 1610-1626.5 MHz band, and Iridium's are capable of operating across the 1616-1626.5 MHz band.

^{13/} On June 20, 2006, Globalstar filed a Petition for Rulemaking in which it asked that the Commission revise its ATC rules to allow Globalstar to offer ATC on its full assigned spectrum. See Globalstar Petition for Expedited Rulemaking for Authorization to Provide Ancillary Terrestrial Component Services in its Entire Spectrum Allocation (filed June 20, 2006). To the extent the Commission requires that Globalstar and Iridium share spectrum in the 1616-1626.5 MHz band, there would be no reason to prohibit Globalstar from offering ATC services throughout those portions of the shared spectrum in which it may operate pursuant to any coordination agreement with Iridium (as well as in the 1610-1616 MHz band where Iridium is not operating). Such an approach is entirely consistent with the rules governing L-band MSS licensees' provision of ATC services. See Report and Order and Notice of Proposed Rulemaking, *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, 18 FCC Rcd. 1962, 1966 ¶ 4 (2003).

Such a reciprocal sharing regime would give Globalstar, with its far larger U.S. customer base, fair and equivalent access to the affected spectrum. This approach, which Globalstar itself proposed back in 2004,^{14/} is entirely consistent with Iridium's repeated assertions that Globalstar and Iridium can successfully share spectrum without causing harm to one another.^{15/} The Commission adopted an identical reciprocal sharing regime for CDMA MSS operations in the L-band, in which each MSS operator is licensed for the entire band but must coordinate with other users to determine which channels each operator may use.^{16/} Iridium and Globalstar would be required to coordinate regularly on the basis of, among other things, each satellite system's

^{14/} Reciprocal use of the L-band is not a new concept: Globalstar proposed such an approach early on, noting that, if the Commission concludes that "use of spectrum by more than one MSS licensee promotes 'spectral efficiency,' then the Commission should want to encourage that policy throughout the L-band." See Petition for Reconsideration of Globalstar LLC filed September 8, 2006, in IB Docket No. 02-364 at 7. Accordingly, as Globalstar discussed, if the Commission were to "grant Iridium shared access to the 1616-1618.25 MHz band, then the only equitable step consistent [with that policy] is to grant Globalstar shared access to the 1621.35-1626.5 MHz band." See Comments of Globalstar LLC filed September 8, 2006, in IB Docket No. 02-364 at 17. Such reciprocal sharing would promote several public policy objectives, including making it "easier for Globalstar and Iridium to coordinate sharing...because there would be more opportunities to locate users by frequency," and providing Globalstar with increased flexibility to place its aviation users in channels above 1616 MHz, helping to "resolve some of the difficulties from sharing that Globalstar has identified for its aviation products." See Reply Comments of Globalstar LLC filed September 23, 2006, in IB Docket No. 02-364 at 15-17. Despite the obvious benefits of this proposal, Iridium opposed it on the procedural ground that it impermissibly introduced new issues into the proceeding. See Opposition of Iridium Satellite, LLC to Petition for Reconsideration of Globalstar LLC, filed October 27, 2004 in IB Docket No. 02-364 at 6 (citing 47 C.F.R. § 1.106(c)). To the contrary, the proper scope of sharing in the MSS L-band is at issue in this proceeding, because Iridium has made it an issue; and the Commission would have authority to consider it in any event "in the public interest." 47 C.F.R. § 1.106(c)(2).

^{15/} See, e.g., Comments of Iridium Satellite, LLC, filed September 8, 2006, in IB Docket No. 02-364 at 17 ("The following detailed analysis of the technical characteristics of the respective systems of Iridium and Globalstar conclusively demonstrates that spectrum sharing is feasible.").

^{16/} See, e.g., Memorandum Opinion and Order and Second Order on Reconsideration, *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, 20 FCC Rcd. 4616, 4629 ¶ 38 (2005).

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actual usage and realistic projections of future usage. We attach a proposed set of principles to guide the formation of a coordination agreement to achieve that end.

Respectfully Submitted,



William T. Lake
Counsel to Globalstar, Inc.

Attachments

cc (via email): Chairman Kevin J. Martin
Commissioner Michael J. Copps
Commissioner Jonathan S. Adelstein
Commissioner Deborah Taylor Tate
Commissioner Robert J. McDowell
Fred Campbell
Emily Willeford
Bruce Gottlieb
Barry Ohlson
Aaron Goldberger
Angela Giancarlo
John Giusti
James Ball
Howard Griboff
Jennifer Gorny
Paul Locke

COORDINATION PRINCIPLES

Principles

In its Report and Order in *Review of the Spectrum Sharing Plan in the 1.6/2.4 GHz Bands*, IB Docket No. 02-364, the Commission said that it expected Globalstar and Iridium to develop a coordination agreement that would allow both to use the 3.1 MHz between 1618.25 and 1621.35 MHz (the “shared band”). Globalstar proposes a method of coordinating use of the entire Big LEO L-band in the United States.

If the Commission is going to allow Iridium to use all of the L-band that it is technically capable of using (1616-1626.5 MHz) irrespective of any need, and irrespective of the potential impact on Globalstar’s existing business and future plans, then fairness requires the Commission to allow Globalstar to use all of the L-band that it is capable of using (1610-1626.5 MHz) on the same terms.

In order for Globalstar and Iridium to avoid serious interference to each other with consequent damage to their existing customers, each one should have exclusive access to a minimal block of spectrum. In addition, access to spectrum that the other is currently using must be based on rational business considerations and should be reviewed at least annually.

Proposed Ground Rules for Coordination Agreement

- The assignment of spectrum should be proportionate to each system's minutes of use in the United States, taking available technology and existing system parameters into account.
- Ideally, both systems would have available sufficient bandwidth to serve all customers, but, if there is not sufficient bandwidth to do so, each system should share the burden of any shortfall, if technically feasible.
- The dividing line should be capable of movement within an agreed range in either direction, if technically feasible.
- The Agreement should avoid causing premature obsolescence of user terminals.
- The Agreement should not force either system to incur significant new research and development expenses.
- The Agreement should be implementable in stages over time to avoid disrupting existing customers and imposing excessive technical changes
- The Agreement should incorporate sufficient flexibility to allow the systems to accommodate unanticipated short-term demand without triggering full-scale changes to spectrum assignments.
- The Agreement should take into consideration Globalstar’s transition to second-generation system around 2010.^{1/}

^{1/} Iridium has not announced that it intends to build and launch a second-generation system.

Proposed Agreement

- Each system shall have exclusive access to some amount of primary spectrum unless the system becomes non-operational or the FCC issues an order otherwise.
- Each system shall have access to spectrum that is “shared,” that is, neither system has to protect the other from interference, but both cooperate to manage interference through coordination procedures.
- The exclusive and shared rights remain effective for at least one year from the date of the Agreement and shall be reviewed annually thereafter. If either system experiences harmful interference in the shared segment, then that system may invoke coordination procedures (to be agreed) in an attempt to resolve the interference.
- If the parties are unable to agree, then the dispute will be arbitrated by a third-party engineer or other professional not allied with either system.
- After any shift in spectrum assignments, the systems shall work cooperatively to determine whether there are levels of interference that need to be addressed. Otherwise, neither system will be required to make changes to its subscriber terminals.
- If Globalstar is operating an ATC service, then ATC usage shall be included in demonstrations of capacity, based on a formula to be agreed between the parties for how ATC calls are counted toward spectrum usage.

EXHIBIT 1



Federal Communication Commission
International Bureau
445 12th Street, SW
WASHINGTON, DC 20554
United States of America

Ihr Zeichen, Ihre Nachricht vom
Votre référence, votre lettre du
Your reference, your letter of

Mein Zeichen, meine Nachricht vom
Ma référence, ma lettre du
My reference, my letter of
511-10

+496158

Leeheim

940 210

22 June 2006

Report of irregularity or infraction

Interfering stations

- 1 Name: **Iridium**
- 2 Identification/Callsign: **HIBLEO-2**
- 3 Nationality: **USA**
- 4 Frequency measured: **1618.25-1621.35 MHz (as from 27 May 2006, H24)
1612.13 MHz (unwanted emission)**
- 5 Class of emission: **31K5Q7W (or V7D or V7E)**
- 6 Class of station and nature of service: **EG, EJ, EU,
CP, CR**
- 7 Location: **Iridium LEO orbits**

Station reporting the irregularity

- 8 Name: **Monitoring Earth Station Leeheim**
- 9 Identification: **Federal Network Agency**
- 10 Nationality: **German**
- 11 Location: **49 N 51, 08 E 24**

Bundesnetzagentur für
Elektrizität, Gas,
Telekommunikation, Post und
Eisenbahnen

Telefax Bonn
+49 228 14-88 72

E-Mail
poststelle@bnetza.de
Internet
<http://www.bundesnetzagentur.de>

Kontoverbindung
Adresse bancaire
Banking connection
Bundeskasse Trier
BBk Trier
BIC: MARKDEF1585

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Canisiusstr. 21
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Telefax Mainz
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Behördensitz/Siège/Seat
Bonn
Tulpenfeld 4
D-53113 Bonn
☎ +49 228 14-0

IBAN:
DE 44 585 000 00 00 585 010 03
DE 87 585 000 00 00 585 010 05
DE 33 585 000 00 00 585 010 07

Particulars of the irregularity

- 12 Name of the station in communication with the station committing the irregularity: **mobile earth stations in the Iridium satellite system**
- 13 Call sign of the station in communication with the station committing the irregularity: **not applicable**
- 14 Date and time: **daily, H24**
- 15 Nature of the irregularity: **the produced unwanted emissions of Iridium into the radio astronomy band 1610.6-1613.8 MHz cause harmful interference hence disobeying RR 15.10 and 15.11**
- 16 Information supporting the report: **(1) unwanted emission spectrum measured 01 March 2004, 0728 UTC, at 1612.13 MHz: $-210.5 \text{ dB(Wm}^{-2}\text{Hz}^{-1}) \pm 3\text{dB}$;
(2) spectrogram of occupied bandwidth exceeding the assigned frequency band in Germany as from 27 May 2006, H24**

Particulars of the interfered station

- 17 Name: **Radio Telescope Effelsberg**
- 18 Identification: **Max-Planck-Institute, Germany**
- 19 Frequency assigned: **1610.6-1613.8 MHz**
- 20 Frequency measured at the time of interference: **1610.6-1613.8 MHz**
- 21 Class of emission and bandwidth: **not applicable**
- 22 Receiving location: **50 N 32, 06 E 53**
- 23 Certificate:

I certify that the foregoing report represents, to the best of my knowledge, a complete and accurate account of what took place.

This report became necessary pursuant to 15.39 of the RR since the interference persists in spite of the action taken in accordance with 15.35 of the RR on 30 March 2006.

By direction of the President
Best regards

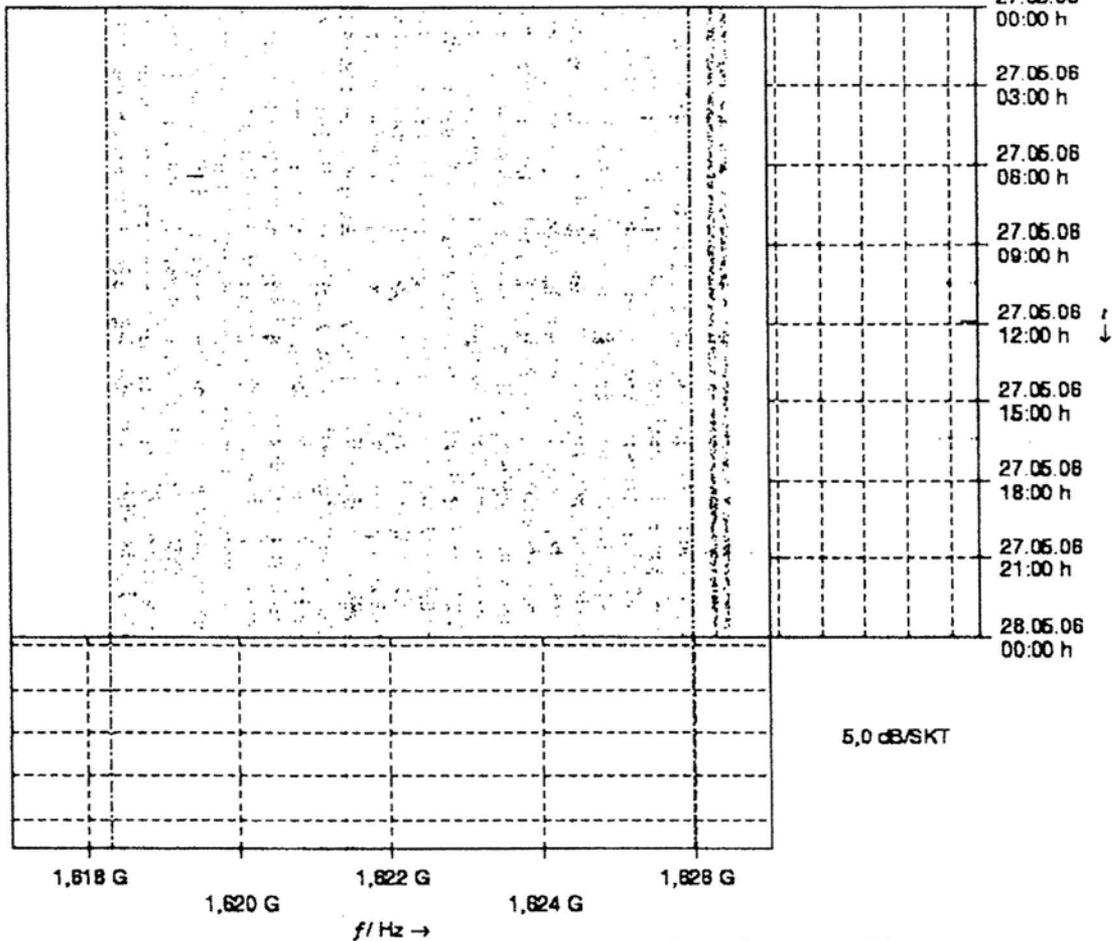
2 Attachments


Markus Schreiber

MONITORING EARTH STATION Leeheim, Germany

Omnidirectional spectrogram of Iridium useful emissions at the lower edge outside the frequency assignment in Germany; times in UTC, G = GHz, occupied band: 1618.25-1626.5 MHz, assigned band in Germany: 1621.35-1626.5 MHz.

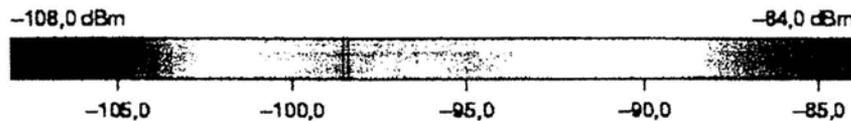
Leeheim, 27.05.2006, Maximalwertspektrum



	Pegel	Frequenz	Zeit	Anzahl	Totzeit
M1	-117,0 dBm	1,61833 GHz	00:00:00 h	47	230 ms
M2	-118,5 dBm	1,62600 GHz	00:00:00 h	47	230 ms
Δ	-0,5 dB	-7,6699 MHz	00:00:00 h		

----- M1 ----- Maximalwerte
 ----- M2 ··········· Mittelwerte

Messauftrag: 751
 Auftragsname: B2_26/06_Iridium_1
 Antenne (Pol.): HW 003 (I)
 Typ (Richtung): Kegel (Rund)
 Mittelfrequenz: 1,62 GHz
 Bandbreite (Linien): 10,000 MHz (5000)
 Auftragsbeginn: 26.05.2006
 Auftragsende: 29.05.2006
 Pegeloffset: 0,0 dB



Alle Zeitangaben in UTC.

Kommentar:

M1 Untergrenze "Sub-Band 8"; M2 Obergrenze "Sub-Band 30"

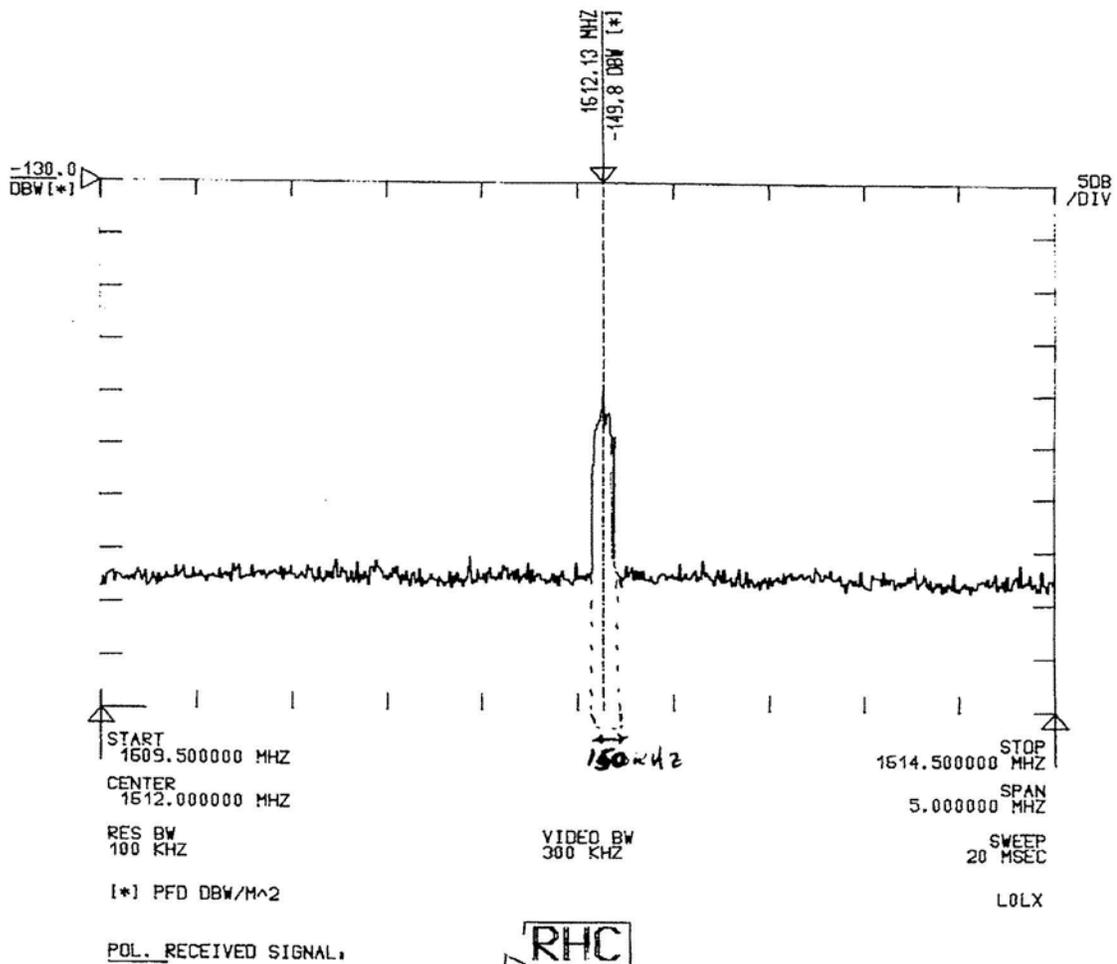
MONITORING EARTH STATION Leeheim, Germany

Iridium 66, orbital plane 1, revolution 30902

Spectrum of unwanted emissions in the band allocated to the radio astronomy service

[*] The p.f.d. value is subject to a correction factor related to the monitoring equipment set-up.

NAME/CALLSIGN OF STATION : IRIDIUM
ASSIGNED FREQUENCY :
DESIGNATION OF EMISSION :
ADDITIONAL INFORMATION : IRID.66 0724u E1 13
DATE/TIME OF MEASUREMENT : 040301 0728 UTC



$$PFD = 201.56 \text{ dBW/m}^2/\text{Hz}$$