

**THE INTERNATIONAL FREQUENCY COORDINATION BETWEEN  
THE MULTI-FUNCTIONAL TRANSPORT SATELLITE (MTSAT) AND  
OTHER METEOROLOGICAL SATELLITE NETWORKS IN UHF  
BAND, S-BAND AND USB**

**Summary and purpose of document**

The purpose of this document is to report to CGMS members the status of the international frequency coordination between the Multi-functional Transport Satellite (MTSAT) and other satellite networks on the frequency bands of UHF, S-band and USB which are used for the communication subsystem of MTSAT.

**Action required:**

CGMS members are requested to notify the Telecommunications Administration, which supervises each meteorological satellite operator, that there is no unacceptable interference between the MTSAT and other meteorological satellite networks.

# **THE INTERNATIONAL FREQUENCY COORDINATION BETWEEN THE MULTI-FUNCTIONAL TRANSPORT SATELLITE (MTSAT) AND OTHER METEOROLOGICAL SATELLITE NETWORKS IN UHF BAND, S-BAND AND USB**

## **1 INTRODUCTION**

The Multi-functional Transport Satellite (MTSAT) will use six frequency bands. Frequency bands of UHF, S and USB are used for the communication subsystem which takes over the Geostationary Meteorological Satellite 5 (GMS-5), and frequency bands of L, Ka and Ku are used for the aeronautical payload.

## **2. THE FREQUENCY BANDS FOR THE BUS AND FOR THE METEOROLOGICAL MISSION IN MTSAT**

Radio frequencies for MTSAT are shown in Attachment 1 and frequency arrangements for MTSAT and GMS-5 are shown in Attachment 2. New frequency allocations for MTSAT are summarized as follows:

- i) A new frequency for IMAGER (1677.0 MHz) will be allocated replacing the frequency for VISSR (1681.6 MHz).
- ii) Bandwidth of several relay signals will be narrowed than those of GMS-5.
- iii) USB down link and up link frequencies are added in the network between MTSAT and CDA station (at Hatoyama).

## **3. CURRENT STATUS OF THE FREQUENCY COORDINATION BETWEEN MTSAT AND OTHER METEOROLOGICAL SATELLITE NETWORKS**

In 1995, JMA submitted the documents for the advance publication (ApS4) and those for the coordination (ApS3) of information on MTSAT-135E (on the nominal orbital longitude of 135.0 degrees East), MTSAT-140E (140 degrees East) and MTSAT-145E (145 degrees East) to the International Telecommunication Union (ITU) through the Ministry of Posts and Telecommunications (MPT), which is the Telecommunications Administration of Japan, in accordance with ITU Radio Regulations (RR). ITU published these information in 1997 when the international frequency coordination between MTSAT and other satellite networks started.

The filing numbers of MTSAT for ITU procedure are as follows.

MTSAT-135E(135° E) :	AR11/C/2777	published 1997-08-05
MTSAT-140E(140° E) :	AR11/C/2778	published 1997-08-05
MTSAT-145E(145° E) :	AR11/C/2779	published 1997-08-05

JMA is in charge of frequency coordination of UHF, S-band and USB of MTSAT, while Japan Civil Aviation Bureau (JCAB) is in charge of coordination of other frequency bands.

JMA, as the MTSAT operator, attended coordination meetings with India, the Russian Federation, Indonesia and the Republic of Korea and one of the delegates of Japanese Telecommunications Administration and a satellite operator. JMA explained in the meetings that there

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would be no problems between the MTSAT and other satellite networks in the bands of UHF, S-band and USB because the frequency bands for MTSAT are the same as GMS-4/-5.

The coordination with India, Indonesia and the Republic of Korea were successfully completed, and the coordination with the Russian Federation (GOMS-2M) is not completed yet. And the coordination between Japan and Telecommunications Administrations, which administer GOES, METEOSAT or FY-2, are not done yet.

When JMA asked to take the necessary procedure for a notification for the operation of MTSAT-140E to ITU, MPT requested JMA to complete the coordination with other meteorological satellite operators in accordance with ITU Radio Regulations before MTSAT becomes operational.

Therefore, it is necessary for JMA and MPT to successfully complete the coordination with the USA (NOAA: GOES), France (EUMETSAT: METEOSAT), China (CMA: FY-2) and Russia (SRC PLANETA: GOMS).

#### **4. THE COORDINATION WITH CGMS MEMBERS**

JMA has received no comments on the coordinating matters between the MTSAT and other meteorological satellites. CGMS members are requested to send comments and/or information on this matter, to the following contact person on the frequency coordination matter at JMA, if there are any problems.

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#### **5. REQUEST FOR ASSISTANCE FOR THE FREQUENCY COORDINATION BETWEEN TELECOMMUNICATIONS ADMINISTRATION OF JAPAN AND OTHER ADMINISTRATIONS**

MPT requested JMA to take the following actions to complete the coordination between the Telecommunication Administrations of Japan and other Administrations by the end of this year;

to request all satellite operators to send a letter to Telecommunications Administration, with a copy to JMA, which states that as a result of discussion between JMA and CGMS members, the member is convinced that there would be no unacceptable interference between the MTSAT-135E (AR11/C/2777; published 1997-08-05), MTSAT-140E (AR11/C/2778; published 1997-08-05), MTSAT-145E (AR11/C/2779; published 1997-08-05) and the meteorological satellite (NOAA, METEOSAT, FY-2 or GOMS) networks in the UHF, S-band and USB.

These letters will be used to complete the coordination between MTSAT and each of meteorological satellite networks.

## Attachment 1

**Table-3 Radio Frequency for MTSAT (TT/C & Meteorological Mission)**

	Radio Frequency	
	Down Link (bandwidth)	Up Link (bandwidth)
▪ DCPI-1	468.875 MHz ( 6 kHz)	
-2	468.883 MHz ( 6 kHz)	
-3	468.924 MHz ( 6 kHz)	
▪ IMAGER	1677.0 MHz (10 MHz)	
▪ TRRR-1	1684.0 MHz ( 1 MHz)	
▪ HiRID	1687.1 MHz ( 6 MHz)	
▪ TRRR-2	1688.2 MHz ( 1 MHz)	
▪ TRRR-3	1690.2 MHz ( 1 MHz)	
▪ WEFAX/LRIT (WEFAX) (LRIT)	1691.0 MHz (260 kHz) (1.2 Hz)	
▪ TLM	1694.0 MHz (400 kHz)	
▪ DCPR (International)  (Regional)	1694.3-1694.4 MHz (100 kHz / 33 ch) 1694.4-1694.7 MHz (300 kHz / 100 ch)	
▪ USB TLM/RNG	2280.721MHz(1.1 MHz)	
▪ DCPR (International)  (Regional)		402.0-402.1 MHz (100 kHz / 33 ch) 402.1-402.2 MHz (300 kHz / 100 ch)
▪ TRRR-1		2026.0 MHz ( 1 MHz)
▪ HiRID		2029.1 MHz ( 2 MHz)
▪ TRRR-2		2030.2 MHz ( 1 MHz)
▪ TRRR-3		2032.2 MHz ( 1 MHz)
▪ WEFAX/LRIT (WEFAX) (LRIT)		2033.0 MHz (260 kHz) (0.4 MHz)
▪ CMD		2034.2 MHz (100 kHz)
▪ DCPI-1		2034.925 MHz ( 6 kHz)
-2		2034.933 MHz ( 6 kHz)
-3		2034.974 MHz ( 6 kHz)
▪ USB CMD/RNG		2100.164MHz (550 kHz)

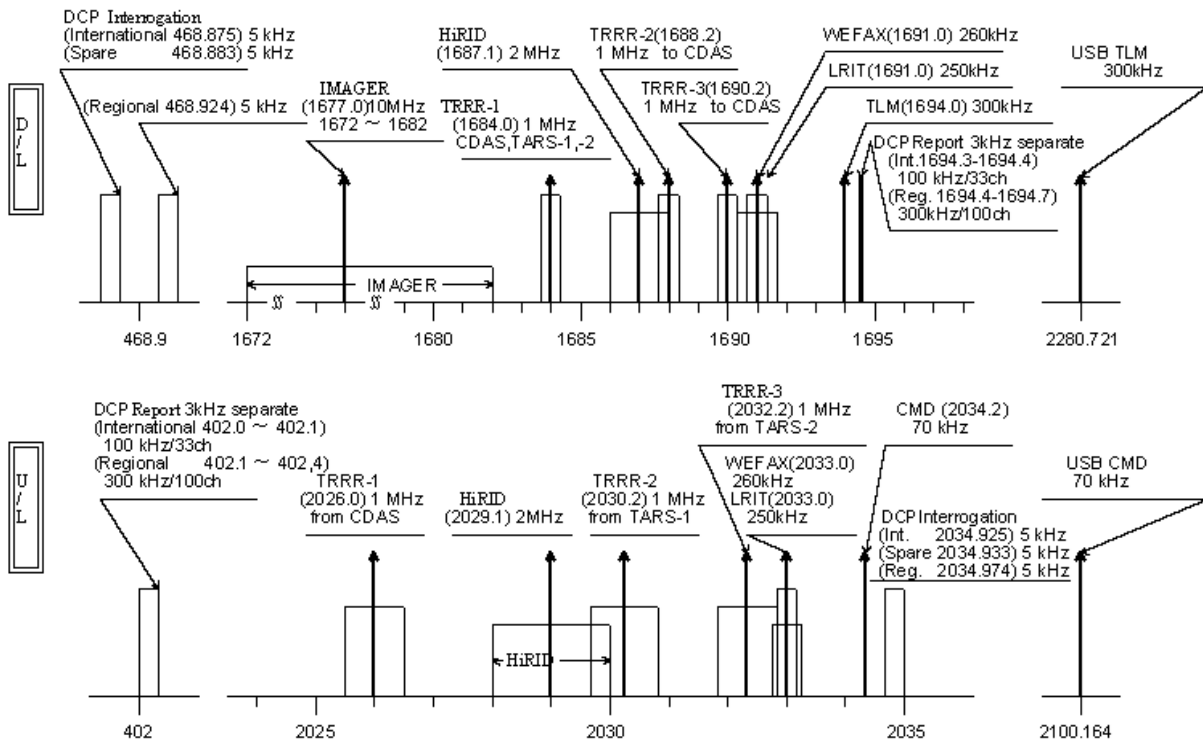


Figure 1 FREQUENCY ARRANGEMENT FOR MTSAT

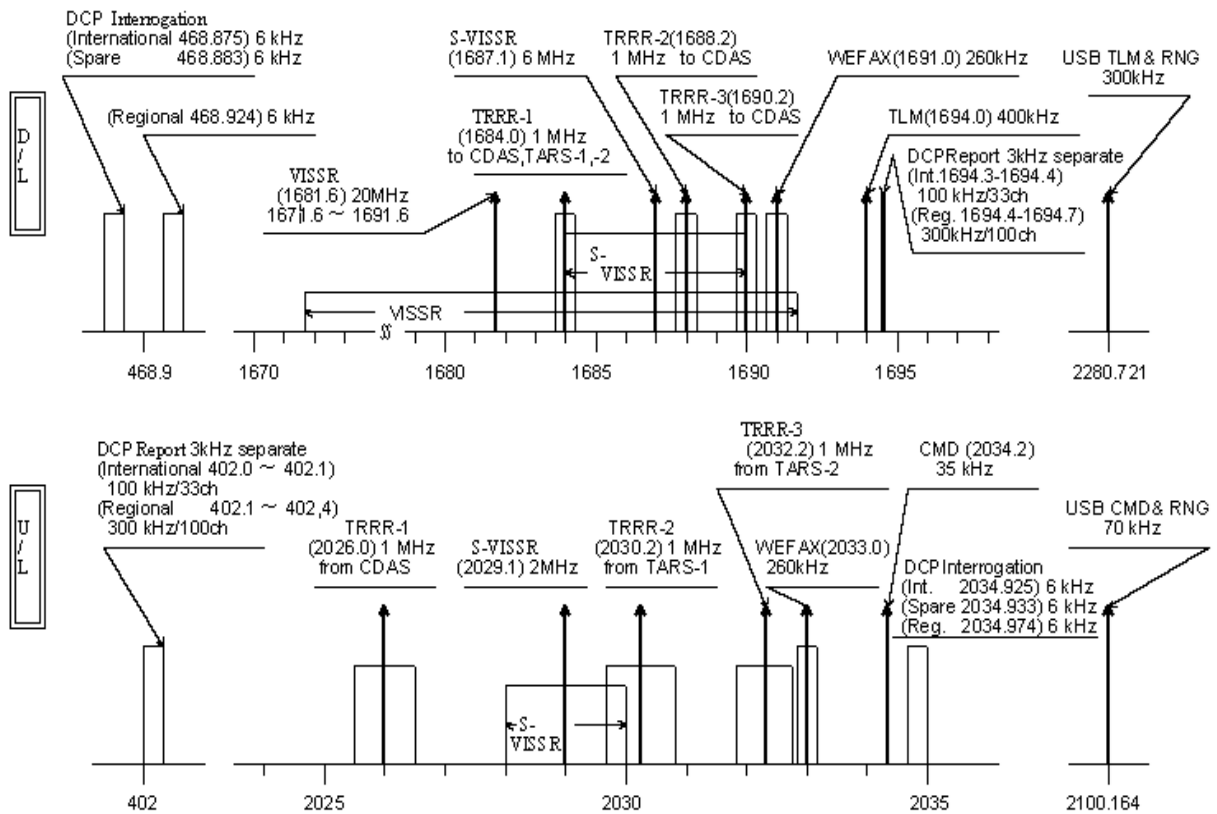


Figure 2 FREQUENCY ARRANGEMENT FOR GMS-5