



The only Broadcast Satellite Operator as Successor to the World's First Broadcast Satellite Service



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1. Introduction

The world's first direct broadcasting satellite (BS) service in the 12 GHz band was started in May, 1984 by NHK (Japan Broadcasting Corporation). This BS service to households was made reality after eighteen years of research and with the cooperation of many organizations.

B-SAT was established in April 1993 to provide a successor to the BS-3 services, which provided programs with high reliability from NHK, WOWOW and HDTV promotion organizations, and to procure new satellites. B-SAT procured the BSAT-1 and BSAT-2 satellites (launched in 1997 and 1998 respectively), BSAT-2a and 2c (launched in 2001 and 2003 respectively) and BSAT-3a, 3b, and 3c (launched in 2007, 2010 and 2011 respectively). B-SAT contributed to the initiation of digital BS in 2000 and the termination of analogue BS in 2011. B-SAT now makes full use of the 12 BSS Plan channels, with 34.5 MHz of bandwidth. As of February 2015, the 28 broadcasters are providing 39 programs (28 HDTV, 8 SDTV, 2 Data, 1 Audio) through BSAT-3a, 3b, and 3c (Figure 1). NHK enjoys over 18 million subscribers as of August 2014.

Figure 1: BS programs through B-SAT satellites (As of February 2015)

1 ch (11.72748GHz) BS Asahi (24)	3 ch (11.76584GHz) BS-TBS (24) BS Japan (24)	5 ch (11.80420GHz) WOWOW (24) WOWOW (24)	7 ch (11.84256GHz) Star Channel (13) Animax (16) Disney (6)
9 ch (11.88092GHz) BS 11 (18) Star Channel (15) TwoTV (15)	11 ch (11.91928GHz) FOX (16) Sky Perfect (16) OUJ (16)	13 ch (11.95764GHz) BS Nippon (24) BS Fuji (24)	15 ch (11.99600GHz) NHK (23) Dopa (2) Dopa WNI (1.5)
17 ch (12.03436GHz) Dopa 7 SD Channels (48)	19 ch (12.07272GHz) GREEN (16) J-SPORTS (16)	21 ch (12.11108GHz) MAGICA TV (16) Fishing Vision (16)	23 ch (12.14944GHz) Nippon Eiga (16) Dlife (16)

2. BS services with high reliability

B-SAT makes every effort to maintain reliable BS services, with measures including: (1) Three satellites for 12 channels, (2) Two satellite control centers at Kawaguchi and Kimitsu, (3) Two uplink stations at Shibuya and Shobu (A third back-up station will be built at Kimitsu in 2015 (Figure 2)), (4) Transportable back-up stations on vehicles (Figure 3), and (5) Receivers for monitoring at eight locations in Japan (Figure 4).

Figure 2: Third back-up station

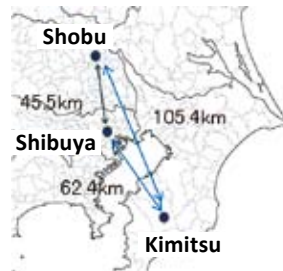


Figure 3: Transportable back-up station



3. Toward new BS services

The Ministry of Internal Affairs and Communications of Japan announced in September 2014 that 4K UHD TV regular service will start in 2015, 8K UHD TV test broadcasting will start in 2016 and 8K UHD TV regular broadcasting will start in 2018. The new BS technical standard has been developed, including features such as 16APSK modulation, which accommodates a high bit rate for UHD TV. B-SAT will maintain its contribution to realizing BS UHD TV services in the future by implementing new satellites, utilizing new bandwidth with high performance, and facilitating new earth stations.

Figure 4: Receivers for monitoring at eight locations in Japan

