FORMOSAT-5 Mission

Mission Overview

SpaceX's Falcon 9 rocket will deliver FORMOSAT-5, an Earth observation satellite for Taiwan's National Space Organization (NSPO), to a low-Earth orbit (LEO). SpaceX is targeting launch of FORMOSAT-5 from Space Launch Complex 4 East (SLC-4E) at Vandenberg Air Force Base in California.

The 42-minute launch window opens on Thursday, August 24 at 11:51 a.m. PDT, or 18:51 UTC. The satellite will be deployed approximately 11 minutes after launch.

A backup launch window opens on Friday, August 25 at 11:51 a.m. PDT, or 18:51 UTC.

Following stage separation, Falcon 9's first stage will attempt to land on the "Just Read the Instructions" droneship that will be stationed in the Pacific Ocean.

Official SpaceX FORMOSAT-5 mission patch

Payload

FORMOSAT-5 will operate in a sun synchronous orbit at an altitude of 720-km with a 98.28 degree inclination angle. As with the FORMOSAT-2 satellite, the primary payload on FORMOSAT-5 is an optical Remote Sensing Instrument (RSI), which provides 2-meter resolution panchromatic (black & white) and 4-meter resolution multi-spectral (color) images. FORMOSAT-5 also hosts a secondary scientific payload, an Advanced Ionospheric Probe (AIP), developed by Taiwan's National Central University.

FORMOSAT-5 is the first space program that Taiwan's National Space Organization (NSPO) has taken full responsibility for the design, development and system integration of. The program's mission is to promote space science experiments and research, to enhance Taiwan's self-reliant space technology capabilities, and to continue to serve the users of FORMOSAT-2's global imagery services. NSPO developed the key components of the remote sensing instrument and spacecraft bus through the integration of resources from domestic partners.

Mission Timeline (all times approximate)

COUNTDOWN

Hour/Min/Sec	Events
- 01:08:00	Launch Conductor takes launch readiness poll
- 01:00:00	RP-1 (rocket grade kerosene) loading underway
- 00:35:00	LOX (liquid oxygen) loading underway
- 00:07:00	Falcon 9 begins engine chill prior to launch
- 00:01:00	Flight computer commanded to begin final prelaunch checks
- 00:01:00	Propellant tank pressurization to flight pressure begins
- 00:00:45	SpaceX Launch Director verifies go for launch
- 00:00:03	Engine controller commands engine ignition sequence to start
- 00:00:00	Falcon 9 liftoff

LAUNCH, LANDING AND SATELLITE DEPLOYMENT

Hour/Min/Sec	Events
00:01:09	Max Q (moment of peak mechanical stress on the rocket)
00:02:28	1st stage main engine cutoff (MECO)
00:02:32	1st and 2nd stages separate
00:02:39	2nd stage engine starts
00:02:53	Fairing deployment
00:08:45	1st stage entry burn begins
00:09:17	2nd stage engine cutoff (SECO)
00:10:47	1st stage landing
00:11:18	FORMOSAT-5 satellite deployment

Launch Facility

Space Launch Complex 4 East at Vandenberg Air Force Base, California

SpaceX's Space Launch Complex 4 East at Vandenberg Air Force Base has a long history dating back to the early 1960s. Originally an Atlas launch pad activated in 1962, SLC-4E was in active use until its last Titan IV launch in 2005. SpaceX's groundbreaking was in July 2011, and the pad was completed just 17 months later in November 2012. SpaceX took advantage of some existing pad infrastructure, but implemented extensive modifications and reconstruction of the launch complex. Part of the renovation included tearing down a 30+ story mobile service tower and a 20+ story umbilical tower. 97 percent of these units were recycled.

SLC-4E consists of a concrete launch pad/apron and a flame exhaust duct. Surrounding the pad are fuel storage tanks and an integration hangar. Before launch, Falcon 9's stages, fairing and the mission payload are housed inside the hangar. A crane/lift system moves Falcon 9 into a transporter erector system and the fairing and its payload are mated to the rocket. The vehicle is rolled from the hangar to the launch pad shortly before launch to minimize exposure to the elements.

Resources

SPACEX CONTACT | John Taylor, Director of Communications, 310-363-6703, media@spacex.com.
PHOTOS | High-resolution photos will be posted at flickr.com/spacex.
WEBCAST | Launch webcast will go live about 10 minutes before liftoff at spacex.com/webcast.