IXBT is Thales Alenia Space Spain’s X-Band version of its Tracking, Telemetry and Command (TT&C) transponder product suite (ISBT), with a flawless track record of more than 330 units delivered to our customers of the various product generations for all types of space missions and applications: Earth observation, telecommunication, navigation, orbital infrastructure, space vehicles, science & exploration.

### Flexible and configurable frequency
### Coherent mode and ranging functions
### Payload data transmission
### Spread Spectrum TT&C function available
### Large in-flight configurability
### Integrated X-Band SSPA

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## COMPETITIVE ADVANTAGES

/// Product version of the ISBT with large flight heritage and zero failures in 30 years
/// Cost optimized solution
/// High power integrated SSPA with commandable power >15W, also available with low level interface
/// Extremely flexible product with large in-flight configurability
/// Optional decryption / encryption with authentication capability: AES GCM/CCM, FIPS certified
/// Several integrated encoding / decoding options: Reed Solomon, CV (K=7, R=½), LDPC, BCH
/// Compatible with most of the main satellite platforms: available in 22..50V and 70..100V versions
/// CAN BUS interface available in the standard product
/// Compatible with all type of orbits: LEO, MEO, GEO, Near Earth
GENERAL
/// Transceiver mass: 3 kg
/// Transceiver size: <228 x 170 x 194 mm³
/// Primary bus voltage: 21-51V and 70-100V
/// Redundant TM & TC data interfaces
/// TM/TC housekeeping interface options:
  /// CAN BUS
  /// Pulse high level command
  /// Serial interface

RECEIVER
/// X-Band and S-Band (X/X and S/X combinations)
/// Uplink modulations (including residual and suppressed carrier modes):
  /// PM with internal subcarrier generation
  /// PM – SPL (Bi-Phase)
  /// High bit rate TC (suppressed carrier BPSK)
  /// Spread spectrum
/// Input dynamic range: <-145 to >-50 dBm

RANGING MODES
/// Coherent and non-coherent modes
/// ESA/NASA two tone and ESA MPTS (typical 450 kHz) alone or simultaneous with TM
/// Regenerative code ranging

TRANSMITTER
/// X-Band and S-Band (X/X and S/X combinations)
/// Coherent mode available
/// Commandable RF output power: up to 15W
/// Downlink modulation modes (bit rate up to 10Mbps):
  /// PM with internal subcarrier generation, PM-SP-L
  /// BPSK, QPSK, OQPSK
  /// GMSK
  /// Spread spectrum

OPTIONAL CONFIGURATIONS
/// X-Band Diplexer
/// Several decoding / encoding options: Reed Solomon, CV (K=7, R=½), LDPC, BCH…
/// AES GCM / AES CCM decryption / encryption: (NIST FIPS PUB 197) FIPS certified

EXPERIENCE
/// IXBT for NASA VIPER lunar mission
/// Over 400 ISBT units sold from various product generations for programs such as: Galileo, Sentinel 1-2-3-6, GEO-KOMPSAT-2, Cygnus, OCO, Swarm, Meteosat Third Generation, MetOp Second Generation, EDRS, Athena-Fidus, Sicral 2, PACE, WFIRST, NOVA-C, ATV, HTV, XMM, Cluster, IBEX, Integral…

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