

**Transcore, Inc.
FCC Form 442
Request for STA
0054-EX-ST-2007
And resubmitted under
0259-EX-ST-2007
And resubmitted under
0313-EX-ST-2007**

EXHIBIT TO STA APPLICATION

By this application, Transcore, ("TC IP Ltd."), respectfully requests special temporary authority ("STA"), beginning **June 18, 2007**, and continuing intermittently through **July 17, 2007**, to test a non-multilateration toll tag reader system under development for export and use in certain countries in the Middle East. The total testing period will not exceed twelve weeks, including this extension. The system will not be marketed for use in the United States.

The system and application is very similar to one in which the Commission recently granted an STA, as described in File No. 0192-EX-ST-2006. That application, which also related to system testing prior to export, involved a railroad car tag reading application in India.

The system, which is being developed and manufactured in Albuquerque, New Mexico, will upon successful development be exported to operate in the 865 - 875 MHz band. The system will separately transmit a carrier signal and a modulated signal to illuminate and write data to tags using modulated backscatter techniques. Transcore submits this Application for Special Temporary Authority, including the information in this Exhibit, in support of this request.

Purpose of Operation:

Transcore proposes to test the tag reader system using an overhead gantry in a parking lot, which is intended to simulate its deployment on a toll booth island. The tag will be mounted on a vehicle that will pass underneath the gantry. The reader will transmit a carrier to illuminate the tag as well as a modulated signal to write data to the tag. The signal that the tag reflects back to the reader will be approximately 40 dB below the power transmitted toward the tag by the reader. The tag is passive in the sense that it lacks a battery or other independent power source; it simply imposes modulation on the reflected carrier, but does not generate an intentionally radiated signal.

The reader is a special export version of the Transcore Encompass™ 5 or Transcore Encompass™ 6 Multi-Protocol reader. The antennas that Transcore will test are an Andrew antenna model DB872G45A-XY, and a modified version of the Transcore AA3152 Universal Toll Antenna, with its operational frequencies shifted to operate in the 865 - 875 MHz band. The technology being employed has been used for years in the United States in the non-multilateration sub-bands of the Location and Monitoring Service operating in the 902 - 928 MHz band. As such, much of the testing has been carried out based on data gathered from operation in the 902 - 928 MHz band. However, Transcore needs to conduct final design verification using signals emitted in the spectrum in which the system will operate overseas.

Transcore respectfully requests agency action so that it may begin experimentation on April 20. It cannot conduct the tests any later. Transcore scheduled the tests for this period to meet user requirements, including product delivery requirements.

Proposed Testing Locations:

Transcore proposes to conduct the testing on one of two property sites near its engineering and production facilities in Albuquerque, NM. No more than three tag readers operating simultaneously will be set up within 1.2 kilometers of the following location.

Albuquerque, NM North Latitude 35 deg 11' 29" West Longitude 106 deg 35' 35" Datum: NAD83
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Technical Specifications:

Frequency (frequency stability will be maintained within ± 2.5 PPM)	865-875 MHz
Station Power (power levels will comply with FCC limits relating to human exposure to radiation)	43 dBm EIRP
Bandwidth	0.100 kHz maximum for the carrier signal; 515 kHz for the modulated signal
Modulation	The carrier signal has no modulation; The modulated signal will carry Manchester encoded data, with a 35 dB depth of modulation
Emission Designators	OK10N0N for the carrier signal; 515KL1D for the modulated signal
Station Antennas	Directional up to 14 dBi Gain (Additional information is provided below)

Transcore requests a waiver of the station identification requirements set forth in Section 5.115 of the Commission's rules, 47 C.F.R. § 5.115 (2006).

Interference Protection:

For purposes of the experimental activities conducted under the authority requested in this application, Transcore proposes to place the carrier and modulated signals and the orientation of antennas (described further below) so as to avoid causing interference to any licensee. Transcore recognizes that the band is used for public safety operations, cellular services, and trunked SMR operations. As such Transcore would coordinate with these licensees and take steps to reduce the likelihood of any harmful interference. All operation will be under the control of Transcore personnel. In the event that interference is experienced, the Transcore contact named on page 4 below will have the testing shut down immediately.

Antenna Information:

Transcore will be testing two antennas – an Andrew antenna, and a modified version of the AA3152 Universal Toll Antenna (“UTA”). The principal plane radiation patterns for the two antennas are provided on page 5 of this Exhibit. The antenna gain for both antennas is approximately 13 - 14 dB. Transcore will control the RF power fed into the antenna to ensure that the maximum EIRP does not exceed 43 dBm.

The antennas will be no higher than six (6) meters above the ground and will be affixed to a gantry. As such, no FAA coordination is required.

Horizon plots showing that antenna gain on the horizon also are provided for both antennas at page 6. These plots show that the energy emitted toward the horizon is substantially diminished (*i.e.*, approximately 0 and -3 dBi gain toward the horizon for the Andrew and UTA antennas respectively) due to the downward tilt of the mounted antennas. The antenna tilt will be 75 degrees down from the horizontal, which is essentially pointing directly downward.

Types and Number of Units To Be Tested:

Transcore requires three readers to obtain valid data and present an accurate demonstration of real-world operations. The installations will be temporary fixed facilities that direct their signal toward a tag mounted on a passing vehicle that will move within several meters of the reader’s antenna.

Restrictions on Operation:

The equipment to be used in this testing is being developed solely for export outside the United States as part of a Transcore contract to develop a system of vehicle identification and location in certain countries in the Middle East, which are friendly U.S. trading partners. The equipment under test will be labeled as follows:

FCC STATEMENT

Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to Transcore, Inc., is strictly temporary and may be cancelled at any time. Operation is subject to the condition that it not cause harmful interference. This device has been developed solely for export outside the United States. It may not be offered for sale or use or sold for delivery in the United States unless and until the approval of the FCC has been obtained.

Public Interest Statement:

Transcore submits that issuance of special temporary authority is in the public interest, convenience, and necessity. Grant of the authority will permit Transcore to develop innovative equipment that will promote domestic industry and provide much-needed technology to a friendly trading partner of the United States.

Contact Information:

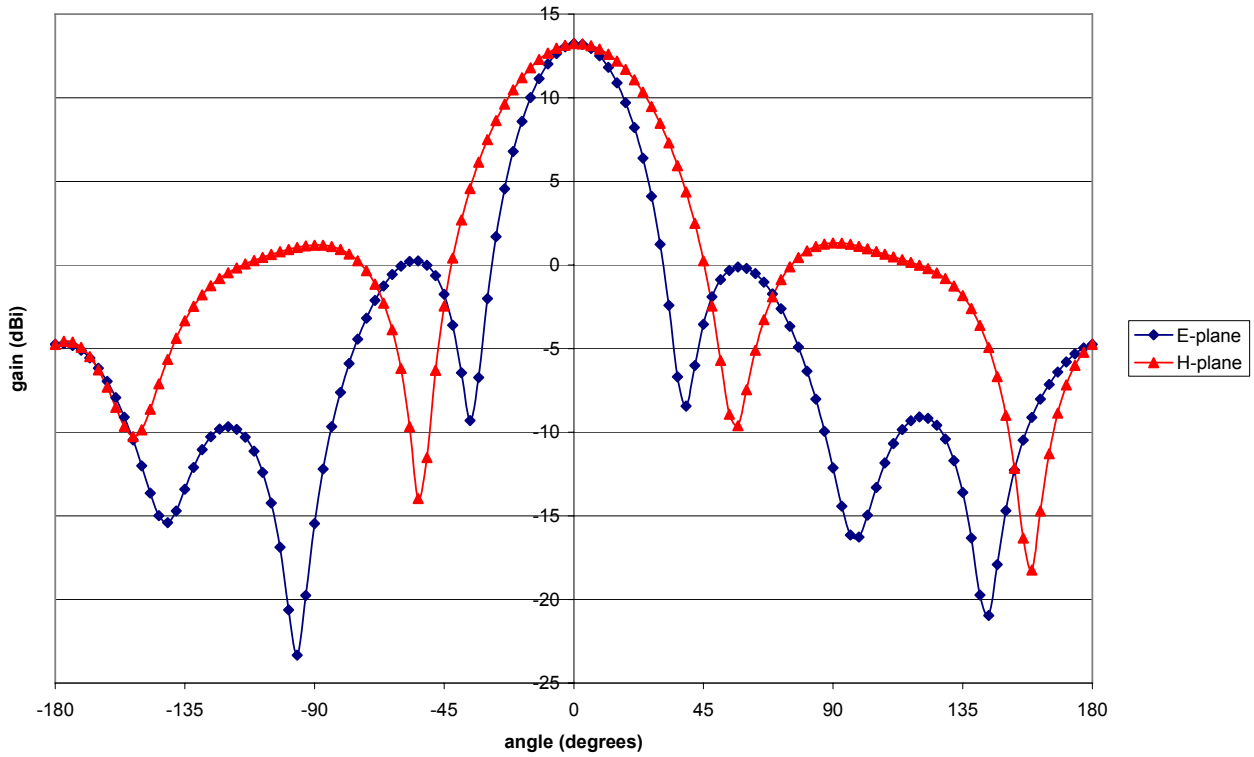
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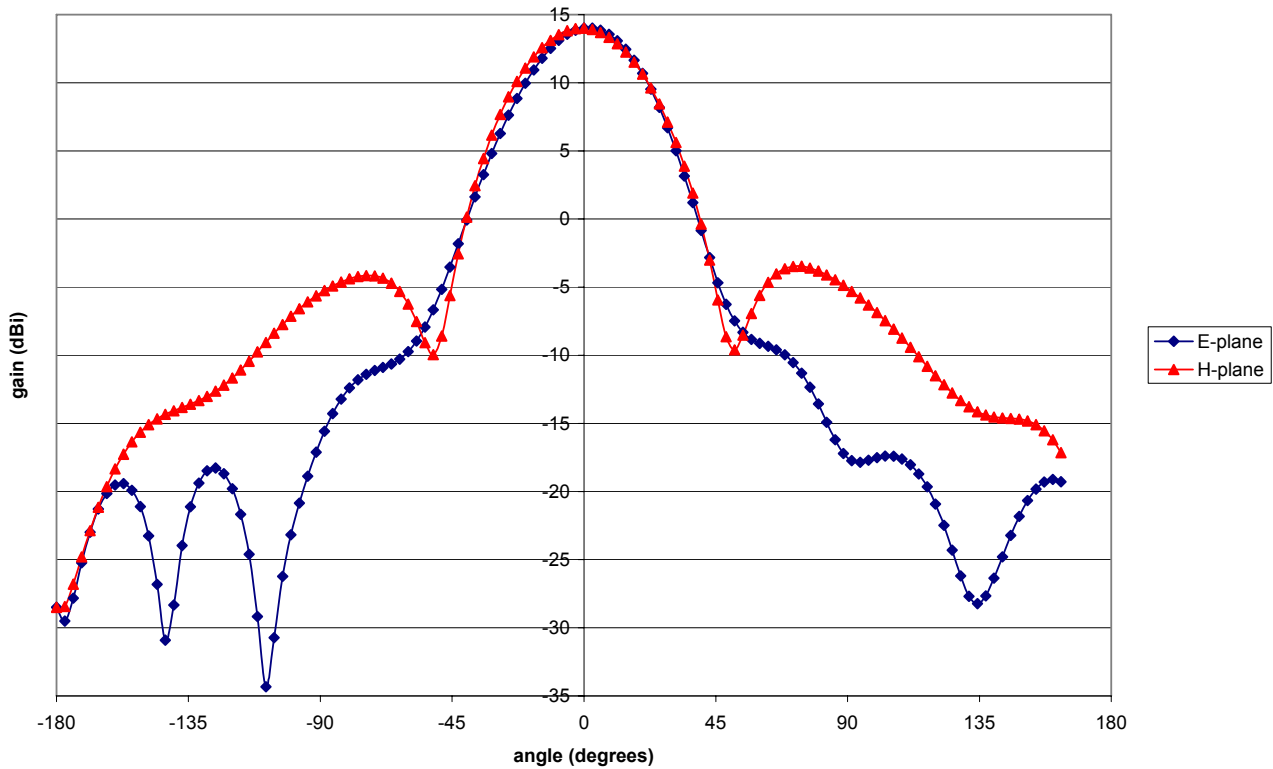
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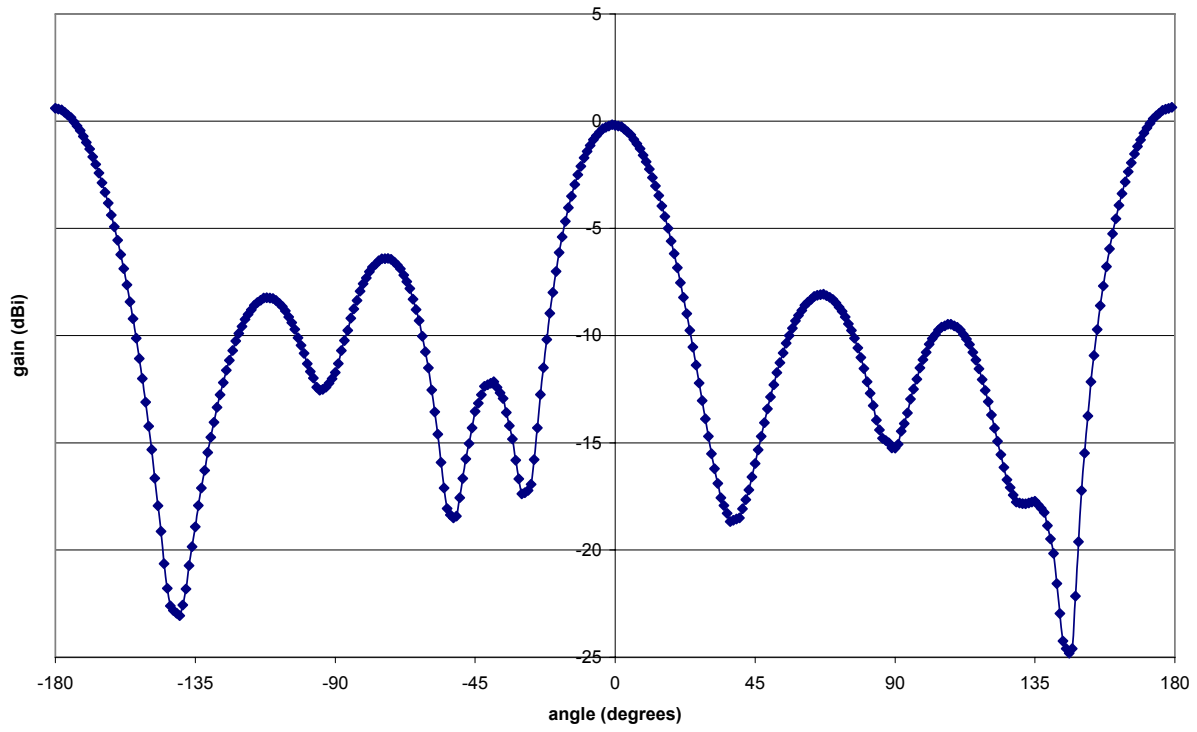
Principal plane patterns, 870 MHz, Andrew antenna



Principal plane patterns, 870 MHz, UTA antenna



Horizon pattern for Andrew antenna, 870 MHz



Horizon pattern for UTA antenna, 870 MHz

