

## Brief Specifications

Transmission Mode	Solid State UHF Digital TV Broadcasting					
Cooling System	Open loop or pressurized closed loop liquid cooled system using appropriate mixture of water and Antifrogen-N as the coolant Automatically controlled thermostatic mixing valve High quality, high efficiency Heat Exchanger with automatically temperature controlled cooling fans Redundant Pump Unit includes temperature, pressure and min/max coolant level sensors with Smart Standalone Cooling Control Unit Configurable to be implemented inside/outside of the transmitter Rack					
Operation Temperature Range	0°C to 45°C					
Storage Temperature Range	-20°C to 55°C					
Relative Humidity	Up to 95% Non-Condensing					
Altitude	Up to 2000m A.M.S.L.(up to 3000m on request)					
Electrical AC Supply	Single phase 220Vac±15% or four wire three phase 380Vac ±15%, 50Hz ±2% with more than 90% power factor					
Automatic Power Control	The automatic power control circuitry provides the output power regulation with a stability of ±2% over the time and whole FM frequency range and protects the system against open or short circuit, capable of withstanding a VSWR up to 1.5:1 at nominal power without power reduction, 1.5:1 up to 2.5:1 with appropriate power reduction and Automatic RF shutdown with five recycling times above 2.5:1					
Output Power Reduction	0 to -10dB					
Type of Modulation	DVB-T/H/T2/T2-Lite					
External Inputs	1PPS and 10MHz Reference Frequency Input					
Crest Factor	13 dB Maximum					
MER	Better than 34 dB(typically 36 dB)					
Shoulder and harmonics Level	Better than -37 dBc(typically -40 dBc) before transmitter mask filter					
Local Control and Operation Interface	Status LEDs, Buttons and Touchscreen Display Unit					
Remote Control and Operation Interface	Web GUI over RJ-45 Ethernet Port, GSM modem and antenna(on request)					
Available Customized Models	FA900LC DUTx01	FA900LC DUTx02	FA900LC DUTx03	FA900LC DUTx05	FA900LC DUTx08	FA900LC DUTx09
Number of SSPAs	1	2	3	5	8	9
Digital Output Power	900 W	1.6 kW	2.5kW	4.1kW	6.6kW	7.5kW
Frequency Range	470 to 858 MHz (Channel 21 to 69)					
Channel Bandwidth	5,6,7 or 8 MHz					
Inputs	2 ASI(BNC 75 Ω Female), 2 TSoIP (RJ45) Inputs with clever switching between inputs					
RF Output	7/16	1 5/8" EIA			3 1/8" EIA	
Efficiency	25%					
Power Consumption	4KVA	8KVA	12KVA	20KVA	32KVA	36KVA
Dimensions(H x W x D)	210cm x 60cm x 120 cm					
Number of Tx's available per Rack	Up to 3	Up to 2	Just 1	Just 1	Just 1	Just 1



## FARA AFRAND CO.

Address : No. 11, 8th Alley, Shahid Sabounchi Ave,  
Shahid Beheshti St. Tehran, 15337, Iran

(+98) 21 8874 3574-6

(+98) 21 8874 3577

info@fara-afrand.com

www.fara-afrand.com

## Liquid Cooled UHF DVB-T/T2 Transmitter

FA900LCDUTx Family

High Quality, High Power Density, Compact Footprint



**Key facts:**

- Features superior quality, typically 36dB MER
- Delivers up to 7.5 kW output power per rack
- Performs fully redundant pump unit
- Reduces installation costs thanks to compact footprint
- Provides easy installation, service and low maintenance costs thanks to modular system design
- Could be configured as Single Drive or Dual Drive with Automatic Change Over Unit
- N+1 redundant system configuration is available
- Sourced from innovate fully hot-pluggable 900 watt power amplifiers have been blended with built-in high efficiency power supplies
- Utilizes the latest generation of 50 V RF LDMOS technology
- Prepared very low loss, high quality Progressive Transmitter Power Combiner has been realized with small footprint built-in liquid cooled Absorber Load Unit
- Incorporates best in class DVB-T/T2 Exciter providing excellent on-air vision quality with real time Adaptive Pre Correction
- Fully broadband 470 to 862 MHz without any requirement to trimming or part replacement thanks to innovate System Management Unit
- Provides full task system control and monitoring with user friendly GUIs (locally or remotely via a computer from anywhere in the world) thanks to its task oriented System Management Unit
- Proudly offers extreme robustness and low service costs due to innovate system design

**Company at a glance**

Fara-Afrand was founded in 1999 as an independent, privately owned company. Fara-Afrand puts science to work by manufacturing robust, reliable and innovate solutions for on-air broadcasting systems. Concentrating more than 18 years on broadcasting transmitters, makes Fara-Afrand to a reliable supplier, offers a wide variety range of innovative products and services for markets including broadcasting systems, communication systems, telecom, ISM and electronic solutions. Up to day more than 2K transmitter blocks of the company has been launched at many broadcasting stations, playing Digital and Analog Radios and Televisions in whole broadcasting frequencies from few MHz up to 1GHz with a few watts of power up to ten kilowatts.

**FA900LCDUTx Family**

FA900LCDUTx is designed to meet high power requirements of the market in Digital TV Transmitters. Innovate and compact design of FA900LCDUTx, offers a small footprint and high power density with ultra-high quality, such that all in one 7.5 kW transmitter is available within a 19 inch rack. Thanks to latest 50 V LDMOS technology, FA900LCDUTx family prepares a robust, rugged and reliable solution for high power Digital TV transmitters with dramatically reduced cost of ownership and maintenance of the transmitter.

**FAUDA900 Solid State Power Amplifier**

FA900LCDUTx family provides high power density, quality and reliability, due to its fully hot-pluggable power amplifier. FAUDA900 is a solid state power amplifier with built-in high efficiency power supplies. Thanks to its compact design and last generation high linearity 50 V RF LDMOS usage, 900W DVB-T/T2 RF power could be achieved in a 3HU, 19 inch and 67cm box. Low loss RF power combiner, agile amplifier control unit and appropriate RF driver amplifier, also have been housed in the amplifier box. Innovate and compact design of FAUDA900, make it to a high quality small footprint SSPA that could be launched only with 1mw RF input signal to achieve more than 25% efficiency at 900W DVB-T/T2 output power.

**FATG4C Exciter**

FA900LCDUTx family has been powered by the best in class FATG4C Exciter with excellent quality on-air performance. For extra redundancy, the transmitter could be configured as Dual Drive Mode with Automatic Change Over Unit. FATG4C supports all Digital Terrestrial TV broadcasting standards with superior quality Linear and Nonlinear Adaptive Pre Correction core with both standard ASI and TSolP inputs.

**Fully Redundant Pump Unit**

FA900LCDUTx family has been accomplished with a reliable cooling unit has been housed inside the transmitter rack for FA900LCDUTx01, 02, 03 and 05 and outside of the transmitter Rack for the other models. Utilizing cooling system with appropriate liquid sensors such as coolant temperature, pressure, level sensors, combined with use of a very agile and smart control unit make it to a very reliable system. Preparing the system with a spare pump block in the pump unit lets the control unit to drive the transmitter even with the main pump failure. Also, cooling system contains a thermostatic valve that has been controlled by the cooling control unit to gain better cooling efficiency in all temperature conditions. High quality, high efficiency Heat Exchanger with automatically temperature controlled fans, allows heat to pass away from the transmitter.

**Low Loss Progressive RF Power Combiner**

FA900LCDUTx family uses an extremely low loss, high quality RF power combiner with excellent phase /amplitude balance and isolation between combining ports. Thanks to progressive implementation of the combiner, combining system needs lower capacity absorber loads. Combining absorber loads also has been realized as built-in liquid cooled units, inside the transmitter rack.

**Agile System Management Unit**

FA900LCDUTx family uses an agile System Management Unit. Well done user friendly menus and GUIs make its control or monitoring very easy and powerful. Stand-Alone realization of the transmitter blocks such as power amplifiers, exciters, cooling unit and etc., makes the System Management Unit very agile and powerful such that each transmitter block executes the System Control Unit instructions, without any overhead have been applied to it.

Each transmitter block transmits its real time status to the System Management Unit and receives and executes its task and part oriented instructions via robust protocols like CAN. System Management Unit prepares full task control and monitoring of the transmitter and all of its blocks with all of their detailed parameters, via a 7 inch touchscreen display and associated keypad combined with user friendly menus and GUIs for local operation. In the remote mode, prepared system Ethernet port is playing the role to establish a bridge connection to the transmitter via a computer from anywhere in the world. Also a GSM modem and antenna could be configured inside the System Management Unit to establish a connection over the GSM network, for full task control and monitoring of the transmitter.