

Titan IF Matrix Router

128 x 128 signal routing taken to new levels



Fig 1 – Titan Front View

The Titan is a highly compact matrix in a 16U shelf and offers a full fan-out / fully distributive system covering 40 to 200MHz.

New features include auto re-routing and a colour XGA Touchscreen for fast control & monitoring.

All active RF and CPU cards are designed to be hot-swapped from front and rear without removing RF cables or connectors.

ETL's new ground breaking Titan (TTN) series is designed for modern multiple antenna sites, particularly Government and Military use.

Offering upto 128 x 128 routing in one chassis, this resilient matrix offers high performance solution to frequent signal routing changes.

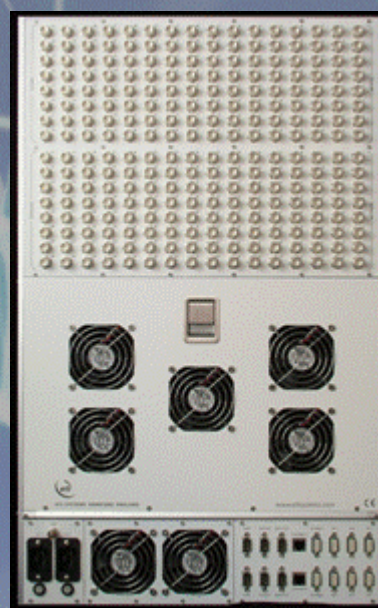


Fig 2 – Titan Rear View



RESILIENCE

FLEXIBILITY

RF PERFORMANCE

Titan New Features

A number of new features have been introduced to the Titan matrix, including those described below:

Control & Expansion - Monitoring & Control is via RS232 / 485 or RJ45 ethernet. Serial ports on the rear allow future expansion.



Fig 3 – Expansion & Control Ports

On board log records all routing changes for each user



Fig 4 – Routing screen

Touchscreen VGA control with security log on for upto 10 users



Fig 5 – Touchscreen control

Aliases (10 character) are set on front screen to identify signal sources



Fig 6 – Setting Aliases

Titan Flexibility

The Titan Matrix can be adapted and grown to a number of different sizes. This example shows a 256 x 256 IF Matrix for a government project.

Master Matrix offers routing control from touchscreen or remotely

All modules offer hot-swap CPUs and PSUs for peace of mind

Splitters and combiners allow Titan modules to be joined



Fig 7 – 256 x 256 Titan IF Matrix System

Titan Resilience

The Enigma matrix has been designed with resilience in mind. The impact of component failure is minimised and all active components can be hot swapped. Problems are rapidly identified and can be easily sorted out.

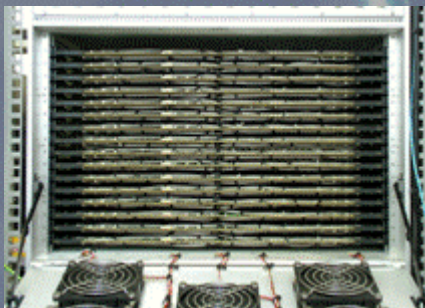


Fig 8 – Matrix Card Access Door

Minimal impact from card failure

The matrix design incorporates input, mid and output matrix cards, which allow auto re-routing in the unlikely event of card failure.

Minimal impact from CPU failure

The matrix contains dual redundant CPU's which both operate in parallel. If one CPU fails the other automatically becomes the master. CPU's can be hot-swapped.



Fig 9 – Dual Redundant CPU Cards



Fig 10 – Hot-swap power supplies

Hot-Swap Power Supplies

Upgraded dual redundant PSUs can be quickly hot-swapped from the front.

Rapid diagnosis of problems

The matrix continuously monitors the conditions of amplifiers, CPUs and PSUs. Any faults are immediately reported through the front panel and remotely. Alarms report the specific faults down to component level.



Fig 11 – Touchscreen Monitoring Page

Technical Specifications Model TTN-10-B7

• RF Parameters

Max Capacity	128 x 128
Frequency Range	40-200 MHz
Insertion Gain	0 \pm 2dB nominal
Gain Tracking	2dB
Isolation (I/P to O/P)	\geq 60dB
Isolation (O/P to O/P)	\geq 60dB
Isolation (I/P to I/P)	\geq 60dB
Flatness	
40-200 MHz	\pm 2dB
Any 60MHz band	\pm 0.5dB
Any 1MHz band	\pm 0.015dB
Input Return Loss	\geq 14dB
Output Return Loss	\geq 14dB
Noise Figure	20dB
1dB Compression Point *	\geq +2.5dBm
IP3	\geq +14dBm
IP2	\geq +25dBm

• System Control & Software

Local Control	Touchscreen and VGA display
Remote Connection	Via RS232/RS485 and RJ45 Ethernet
SNMP Traps	For alarms & monitoring
Comms/Power Failure	Retains settings
Remote Control Software	Available

* (input power)

ETL Systems develop, design and manufacture specialist equipment for satellite ground stations. For a fuller description of the ETL product range, please visit our website. This range can be used as the basis to meet your specific demands.

• Physical

Rack Size	16 RU
Connectors	BNC, SMA, F-type
Impedance	50 Ω or 75 Ω
Dimensions	16U x 620mm x 19"
Weight (fully populated)	85 Kgs
Colour	White
Scalability	128 x 128, 256 x 256, 512 x 512, up to 1024 x 1024

• Power

Input RF Power	+13dBm max
Power requirement	85/264V AC, 1000W, 47/63 Hz

• Key Features

CPU	Dual, Hot-Swap
PSU	Dual, Hot-Swap
Self Diagnostics	Continuous Monitoring

• Environmental

Operating Temperature	0 to 35°C
Location	Indoor Use Only
Storage Temperature	-20°C to +75°C
Humidity	85% Non Condensing



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