

# AFTC5



## Audio Frequency Track Circuit – GEN 5

The Next-Generation Audio Frequency Track Circuit (AFTC5) is designed for heavy and light rail passenger transit systems. Fully compliant with AREMA and CENELEC 4 standards, AFTC5 delivers reliable train detection and vital communications.



**KB SIGNALING™**

# AFTC5

## Key Benefits

### Vital Train Detection Functions:

- Digital signal processing filters ensure proper rejection of substation harmonics and other undesired signals
- Software Diagnostics tools that simplify troubleshooting
- Generates and detects up to 8 carrier frequencies, ranging from 1 kHz to 10 kHz
- Generates up to 3 train detection code rates ranging from 1.25 Hz to 27.5 Hz
- Secure, containerized, and scalable architecture, based on open data standards and protocols
- Operates using either single code (same train detection and cab signal rates) or dual code (different train detection and cable signal code rates)
- Provides broken rail detection with optional alarms

### Vital Cab Signal Functions:

- Transmits up to 2 cab signal frequencies from 990 Hz to 10 KHz
- Produces up to 15 cab signal code rates from 1.25 Hz to 27.5 Hz
- Settable Temporary Speed Restrictions

## General Description

The AFTC5 offers a highly configurable, jointless audio frequency track circuit solution. It generates and receives vital rate-coded carrier frequencies for train detection and transmits speed commands to the train. Bi-directional, non-vital train-to-wayside communication signals are also supported. Ethernet-based communication eliminates discrete wiring, enabling seamless connection with other AFTC5 units and interlocking processors.



## Customer Benefits

### Easily Configurable

Parameters, such as frequencies, code rates, transmit/receive levels, and IP addresses, are software configurable, allowing identical track circuit hardware to be used. AFTC5 provides the clear advantages of accurate frequency transmission and reception, as well as improved stability due to its digital signal processing capabilities.

### Compact Size

The AFTC5 is a compact solution that supports up to six track circuits within a single 19-inch subrack. Up to 4 subracks can be mounted in a 19-inch free-standing rack to support a total of 24 track circuits. The power supply subrack(s) are equipped with either single or redundant power supplies and are included with the AFTC5 System.

### Reduced Maintenance Costs

Engineered to result in lower lifecycle maintenance expenses, AFTC5 features only three lowest-level replacement units (LLRUs). This streamlined design leads to a reduction in spare parts inventory needs. Remote preventative maintenance is available via any network-connected PC.

### Compact Size

The AFTC5 supports installed KB Signaling compatible trackside equipment, including:

- WEE-Z® (impedance) bonds
- Tuned loops - 4-ft.
- Untuned loops -2-ft., 4-ft., long wire, and high-definition loops
- Terminating receivers
- Train-wayside communication antennas
- Bridging receivers

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## Specifications

Mean Time Between Failures (MTBF)	200,000 hours
Mean Time Between Hazardous Events (MTBHE)	greater than 10 <sup>9</sup> hours
Mean Time to Repair (MTTR)	less than 15 minutes
Compliance to Standards	AREMA & CENELEC SIL 4

## Electrical / Mechanical

Power Supply Unit	110VAC ±20% 47 Hz to 63 Hz
Power Factor	greater than 95%
Power Consumption	115 W maximum / Track Control Unit
AFTC5 subrack dimensions (including cables)	in: 19 W x 10.5 H x 23.5 D cm: 48.3 W x 26.6 H x 59.7 D
PSU subrack dimensions	in: 19 W x 5.2H x 11.9D cm: 48.3 W x 13.3H x 37.6 D
Field connection cable length	5500 ft. maximum (longer if used with compensating capacitors)



## Ordering Information

Part	Description	Part Number
TxRx2 Module AFTC5	Transmit / Receive	DTR2000028050
TTP2 Module AFTC5	Transit Track Processor	DTR2000028052
Power Supply Unit (PSU)	Power Supply	DTR0000395632



Contact your KB Signaling Business Development Manager  
Call 1-800-825-7090, or Email us at [aso.techsupport-kb@alstomgroup.com](mailto:aso.techsupport-kb@alstomgroup.com) for more information today.

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