

ANTENNA TUNER

3049 ANTENNA TUNING UNIT

The 3049 is an HF band Antenna Tuner designed for use with most end-fed long wire and base whip antenna systems for base station applications. With its robust design, extended interface cable capability, and high performance specifications, the 3049 provides an ideal choice for base stations requiring a tuned HF base station antenna solution.

KEY FEATURES

- 2 to 30 MHz
- 125 W PEP
- Memory tune < 500 ms
- 2G and 3G ALE compliant
- Suited for whip and long wire antennas
- Up to 100m cable lengths
- Robust construction
- IP67 rated

ANTENNA COMPATIBILITY

The 3049 tuner is designed to tune antenna elements with lengths ranging from 2.4 m and up to 23 m across the full 2 to 30 MHz band, covering typical tuned base antenna types like the Codan Code 406 Whip and Code 403 Long wire.

ROBUST DESIGN

With its UV stabilised glass reinforced nylon housing and IP67 ingress rating the 3049 tuner has a robust design making it suitable for installation in both indoor and outdoor environments. Additional protection can be provided with the optional sunshield accessory, recommended for installations where the 3049 tuner is expected to sustain continuous hot summer sun exposure.



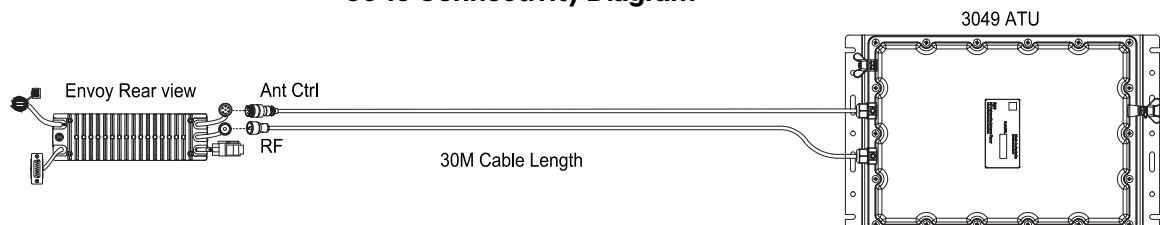
HIGH PERFORMANCE

With 125 W RF power handling capability, the 3049 can be used for full duty cycle voice and data operation over the full 2 to 30 MHz frequency band, within rated environmental conditions. The tuner is designed for up to 125 W RF power levels and with Codan fast tune interface and tune from memory capability, it is compatible with timing dependant calling protocols such as 2G and 3G ALE and voice and data operation.

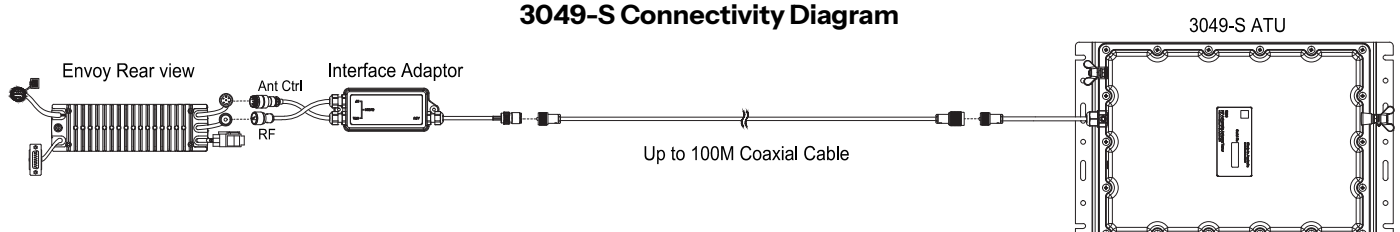
FLEXIBLE INTERFACE

The 3049 tuner is available in two variants that provides a flexible approach for different installation scenarios. The 3049 variant is fitted with permanently attached but separated coaxial cable and transceiver control cables, each 30 m in length. The 3049-S variant is coupled with a dedicated Interface Adaptor unit which allows for a single coaxial cable connection between the Codan HF transceiver and the antenna tuner, up to 100m in length. Both variants of the 3049 derive power from the connected Codan HF transceiver.

3049 Connectivity Diagram



3049-S Connectivity Diagram



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GENERAL (3049 & 3049-S TUNER)

Frequency range	Tx: 2 to 30 MHz Rx: 250 kHz to 30 MHz
Antenna length	2.4 m to 23 m
RF power rating	125 W PEP
Duty cycle	100% all modes up to 55°C
Input impedance	50 Ω
VSWR	Peak: $\leq 1.8:1$ Average: $\leq 1.2:1$
Tuning speed	Initial tune: 6.7 second average Tune from memory: <200 ms (3049) Tune from memory: <500 ms (3049-S)
Memory channel	Unlimited
Tune power	20 W PEP
DC power requirements	12 V DC nominal Peak Current: 1.5 A Tuned state: 800 mA maximum

INTERFACES (3049 & 3049-S TUNER)

Tune interface protocol	Codan proprietary fast tune
Antenna	M6 threaded stud
Ground	M6 threaded stud
RF input / output	3049: 30 m RG58 flying lead coaxial cable terminated in UHF plug 3049-S: 200 mm RG58 flying lead coaxial cable terminated in N-type socket
Transceiver control	3049: 30 m fixed cable to standard Codan 6 pin circular plug 3049-S: Transceiver control via coaxial cable, requires use of Interface Adaptor

INTERFACES (INTERFACE ADAPTOR) - ENVOY

Antenna tuner	200 mm RG58 flying lead coaxial cable terminated in UHF socket
Transceiver control	200 mm flying lead to standard Codan 6 pin circular plug
Transceiver RF	200 mm RG58 flying lead coaxial cable terminated in UHF plug

INTERFACES (INTERFACE ADAPTOR) - SENTRY-H 6120-BM

Antenna tuner	200 mm RG58 flying lead coaxial cable terminated in UHF socket
Transceiver control	170 mm flying lead to standard Codan 6 pin Military connector
Transceiver RF	200 mm RG58 flying lead coaxial cable terminated in N-type plug

NOTE: The Sentry-H 6120-BM transceiver RF power must not exceed 125 W when used with the 3049-S Antenna Tuner.

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MECHANICAL (3049 & 3049-S TUNER)

Housing material	Glass reinforced nylon – UV stabilised
Colour	Black
Dimensions	415 x 260 x 100 mm, tuner unit without cables (16 x 10 x 4 in)
Weight	3.2 kg, 3049 / 3049-S tuner unit without cables (7.1 lbs) 6 kg, 3049 tuner unit with 30 m cables (13.2 lbs)

MECHANICAL (INTERFACE ADAPTOR)

Housing material	ABS plastic – non UV stabilised
Colour	Black
Dimensions	165 x 65 x 35 mm, enclosure only (6.5 x 2.5 x 1.5 in)
Weight	200 g (0.4 lbs)

ENVIRONMENTAL

Storage temperature	-20°C to 70°C (-4°F to 158°F)
Operating temperature range	-20°C to 70°C (-4°F to 158°F)
IP rating	3049 / 3049-S Tuners: IP67 Interface Adaptor: IP42

COMPLIANCE

Safety	Complies with IEC 62368-1:2014
RoHS	RoHxS 3, 2011/65/EU Amendment 2015/863
EMC	CE: EMC Directive 2014/30/EU (ETSI 301 489-1/-15) FCC: Part 15B IC: ICES-003 RCM: CISPR32

Values noted are typical. Equipment descriptions and specifications subject to change without notice or obligation.

ACCESSORIES

Compatible Codan Antennas

- 9.5 m Base Whip – ground mount
- 9.5 m Base Whip – roof mount
- 20 m Base Long Wire

Optional Accessories

- Sun shield
- High Voltage (HV) RF cable
- Radial ground plane – ground mount
- Radial ground plane – roof mount
- Copper earth stake – 1.8 m
- Copper earth strip
- RG58 or RG213 coaxial cable

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