

MARK-IV DIGITAL Narrowband Signal Booster with in-band translator option.

Commercial 800 MHz Band SMR, Analog & Digital Modulations (iDEN & others)

Part 90 Signal Boosters THIS IS A 90.219 CLASS A DEVICE

WARNING. This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. You MUST register Class A signal boosters (as defined in 47 CFR 90.219) online at www.fcc.gov/signal-boosters/registration. Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation."

Model: M4DBDA8



The CTI MARK-IV DIGITAL NARROWBAND SIGNAL BOOSTER, integrates two sets of front-end programmable narrowband filters with multi-carrier power amplifiers, to deliver a Bi-Directional Narrowband Signal Booster. The individual AGC per channel feature essentially reduces the uplink near-far concern prevalent in many Public Safety broadband DAS systems.

Fiber-fed models are available, with or without the Multi-Carrier Power Amplifier (MCPA) stages.

The optional in-band frequency translator functions allows to receive (input) on a given frequency channel and then transmit (output) on a different channel within the same sub-band. The frequency translation does not include demodulation and re-modulating the baseband content; therefore the original off-air signal is tracked and re-amplified exactly.

Features & Applications:

- Up to 10 or 20 fully programmable filters per path, Uplink and Downlink.
- Software-defined-radio architecture
- Digital filtering supports analog and digital transmission modulation formats (APCO-P25, TETRA, TETRAPOL, NXDN)
- Optional frequency translation from input to output within the same sub-band, for a reduced number of channels.
- Available several sub-bands
- <-110 dBm input sensitivity per filter-window
- 120 dB Small-Signal Gain per filter-window
- Individual Automatic Gain Control (AGC) per filter, ensures effective recovery of weak signals from far-end or worst case situations users, despite other strong simultaneous signals on-scene.
- Individual Rx. Threshold level (Squelch) per window, ensures clean output spectrum with no amplified noise if un-active.
- 50 W output compression point (P1dB) highly linear Multi-Carrier Power Amplifiers (MCPAs) deliver very low in-band Intermodulation products.
- Web-server software for configuration
- Optional RF-over-Fiber-transceivers.
- Very low power consumption.



The filter's bandwidths & selectivity can be specified by the user in order to achieve very narrow filters windows, such as, for example, 70 dB rejection at 200 kHz offset for less than 13 μ sec, or 70 dB rejection at 90 kHz offset at the expense of 30 μ sec delay Typical digital filter frequency response, 30 micro-second Group-Delay, with 70 dB ACR @ 75 kHz offset. (Other Configurations are available, user field upgradeable).

The **MARK-IV DIGITAL** amplifiers can be specified as truly channelized narrowband filters tuned to transmit only your licensed channels, in compliance with the FCC 90.7 definition for Class-A Signal Booster.

The **MARK-IV DIGITAL** is a rugged design for multi-carrier two-way rebroadcast systems, where significantly high dynamic range is required on a channel-per-channel basis, while delivering lower group delay.