



## MODEL NUMBERS

### Now Available:

- >> **CSI-DSP85-1W-P**  
Frequency Programmable Repeater, PCS
- >> **CSI-DSP85-1W-C**  
Frequency Programmable Repeater, Cellular
- >> **CSI-DSP85-1W-PSS8**  
Frequency Programmable Repeater,  
Public Safety/SMR 800

## >> THE WIRELESS ENGINE: DIGITAL REPEATER

Software-defined filtering for unrivaled selectivity and agility.

### Product Features

#### Software Defined Filters

##### High Selectivity

- >> DSP (Digital Signal Processing) technology provides a higher standard of filter characteristics

##### Spectrum Agility

- >> Change filters locally or remotely
- >> Unlimited number of passbands
- >> Band edges are user-defined
- >> From full PCS to multiple 1.25 MHz channels

##### Change Filters on Demand

- >> Download filters either locally or remotely
- >> Install new filters to meet changing spectrum requirements
- >> Store up to 60 pre-defined filters on board

#### Alphanumeric User Interface

- >> Integrated digital power/AGC meter allows precise set-up without additional test equipment
- >> User-friendly technical language interface

#### Oscillation Detection and Gain Control Feature Prevents Network Interference

#### DSP Wireless Modem

- >> Remote query of power output, AGC status, gain, amplifier and shutdown/restart control
- >> Filter configuration remotely selectable
- >> Security control for remote and local access
- >> Major and minor alarms
- >> CDMA or GPRS Compatible

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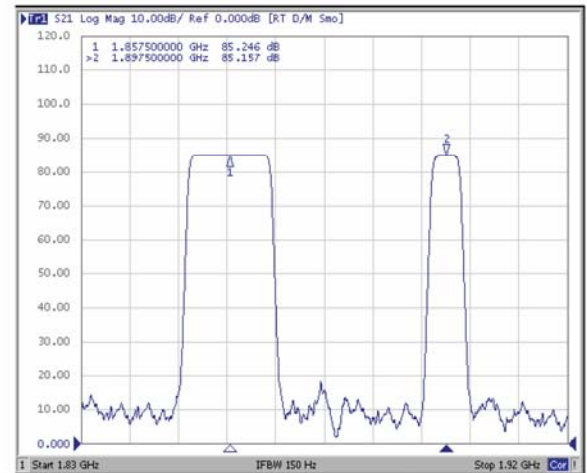
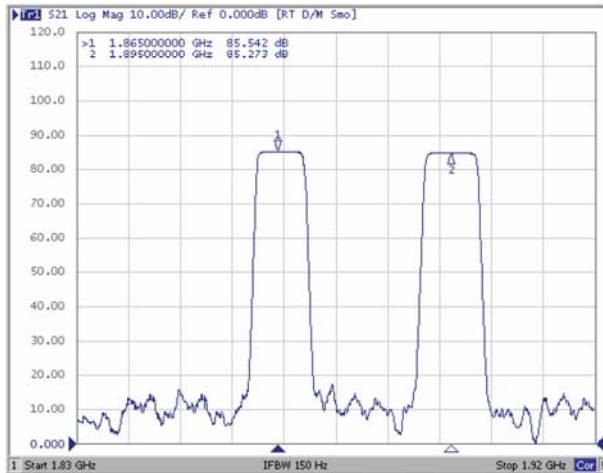
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## >> THE WIRELESS ENGINE: DIGITAL REPEATER

### Specifications

Gain	85 dB	Propagation Delay	3.0 $\mu$ sec Maximum
Linear Output Power		Gain Adjustment Range	30 dB, 1 dB Steps
Public Safety/SMR 800	28 dBm	Filter Switching Time	1 second typical
Cellular	29 dBm	Power Requirements	120-240 Vac @ 2.5A
DCS & PCS	27 dBm	Dimensions	15.2" x 18.5" x 9.2" (386.08 x 469.9 x 233.68 mm)
WCDMA	20 dBm	Weight	27.5 lbs / 12.47 Kg
Noise Figure	6 dB	Connectors	N-Female
AGC Dynamic Range	30 dB		

### Digital Repeater Filter Examples



PCS Spectrum

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## >> **THE WIRELESS ENGINE : DIGITAL REPEATER**

### **APPLICATION NOTES**

#### **Application Notes Overview**

The CSI Digital Repeater utilizes DSP (Digital Signal Processing) technology to provide precise filtering for signals in Cellular, SMR, Public Safety, and PCS Frequency Bands. Cavity Filters and SAW Filters are not used for band pass shaping.

#### **Frequency Agility**

Allows the operator to change filter configurations to support virtually any passband combination within a specific set of wireless frequencies. Filters are easily changed in the field or remotely. This solves the issue of rebanding or augmenting of existing channels requiring forklift repeater upgrades.

#### **Frequency Selectivity**

Exceptional adjacent channel rejection performance is realized with the DSP Repeater. Greater than 50 dB signal rejection can be realized in as little as 300 kHz from pass band edge.

#### **FCC Approval**

Has been granted.

#### **Unlimited Number of Passbands**

There is no practical limit to the number of passbands that can be configured for intended frequency band.

#### **Adjacent Channel Interference Mitigation**

CSI DSP permits fine tuning of band edges to eliminate or mitigate adjacent band interferers. Such filter sets are established by CSI Engineering on a custom basis, by request. Filter plots can be generated and shared with customer for review prior to implementation.

#### **Works with any Wireless Protocol**

CSI Digital Repeater can amplify signals for all mainstream Wireless Service Provider (WSP) modulation types, including: iDEN, CDMA, W-CDMA, GSM, GPRS, EDGE, TDMA, UMTS, HSDPA, Analog, etc.

#### **Initial CSI Digital Repeater Band Configuration**

All band pass configurations are designed to meet user specifications. In some cases frequency plots are available prior to delivery of CSI Digital Repeater.

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## >> **THE WIRELESS ENGINE : DIGITAL REPEATER** **APPLICATION NOTES**

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### Passband Filter Storage/Transfer Options

- >> Two sets of filters can be located in EEPROM for immediate access.
- >> Up to 60 more filter sets can be stored on flash memory and uploaded to EEPROM
- >> Additional or new files can be 'downloaded' via:
  - >> Remote wireless access
  - >> Serial port interface
  - >> USB Download
  - >> Via wireless remote interface system

### Polynumeric User Interface

Onboard display permits full control of all parameters of operation without use of laptop. Display offers real-time data pertaining to power settings, gain settings, maximum gain available, live composite uplink/downlink power meters, fan speed, AGC on/off, etc.