

DSP Voice Firmware v.R5wi077 for BCM 2.5, BCM 2.5 FP1 and BCM 2.5 FP1 MR

Patch Description: This DSP firmware update for a BCM 2.5 system. This version of the firmware will improve the faxing capabilities of the BCM.

Problem:

Problems seen with fax/modem equalization training and divergence post-training with some line impairments.

Solution:

This release improves fax/modem performance under some line conditions.

The following changes have been made:

- a) Equalizer adaptation rate during image training has been increased. It was found that the equalizer wasn't fully adapting during the training period.
- b) Equalizer adaptation rate during image transmission has been decreased. This change is to prevent the equalizer from diverging as a result of a few data errors.
- c) Equalizer performance has been improved by rounding instead of truncation of 48 to 24 bit results.
- d) Image transmission reliability has been improved by lowering the error threshold at which a modulation TCF will be rejected. This change causes the fax/modem to be more likely to revert to a lower speed modulation.

Designer Sanity:

Tested all fax/modem emulations using PV's Genoa Faxlab. All emulations passed except those which generate out-of-spec CNG tone (112/117 passed). The 5 which failed are expected to fail, since they're not detected as fax/modems by the system.

Testing of fax/modem performance under severe line impairments (TNS Line7 without satellite delay).

R5WI076 probability of page failure: 2.7%

R5WI077 probability of page failure: 0.9%

USR Sportster probability of page failure: 54.9%

Psion Dacm Gold Card Global probability of page failure: 10.2%

Release Notes:

Time Frame:

The CRs this is intended to address have been raised as PR 1, although they're really PR 3, according to our problem reporting procedures.

SR's Resolved:

DSPFirmware_R5WI077

- Q00203294: Allied Universal: Miami, Fl
- Q00319035: TEKFOR: Woosher, Oh

DSPFirmware_R5WI076

- Q00429443: Echo on External call on PRI Trunks.
- Q00336592: AA/CCR CUT-OFFS IN MIDDLE OF PROMPTS

DSPFirmware_R5WI075

- Q00384528: NETWORK DIGITAL: FLUCTUATING VM VOLUME
- Q00322337: ARIZONA GAME & FISH: LOW AUDIO LEVEL ON VM MESSAGES
- Q00321496: COUNTY OF ALPENA: GREETING VOLUME FLUCTUATION
- Q00250281: NOCO CANADA, ETOBICOKE, ON : LOW VOLUME AT START OF MESSAGE
- Q00146871: AMIS: Volume of received AMIS messages is very low

DSPFirmware_R5WI068

- Q00112193: Echo on IP sets.
- Q00168178: Echo heard on IP clients at customer site.
- Q00138400: Fax Messaging intermittent receive failure.
- Q00156935: Echo canceller NLP causing muting of speech path.

Software Components Changed:

DSP Firmware v.R5wi068 for PEC III's

- msc1abot.pci
- msc1appl.pci
- msc1arun.s
- msc1aovl.s
- pec1_ovl.s
- pec1_run.s
- pec1boot.pci

- pec1pll.pci
- pec3boot.pci
- pec3pll.pci
- pec3_run.s
- pec3_ovl.s
- tonedefs.dat
- upld_ovl.s
- upld_run.s

BCM Release and Affected Profiles: BCM 2.5 GA

Prerequisite Patch(es): None

Previous Patch(es) Included: DSPFirmware_R5WI068 and DSPFirmware_R5WI075 included