Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and	)	WT Docket No. 10-4
95 of the Commission's Rules to Improve	)	
Wireless Coverage Through the Use of Signal	)	
Boosters	)	

COMMENTS OF CELLPHONE-MATE, INC.

Hongtao Zhan
Chairman and CEO
Cellphone-Mate, Inc.
48820 Kato Rd. Suite 300B
Fremont, CA 94538

Bruce A. Olcott
Squire, Sanders & Dempsey (US) LLP
1201 Pennsylvania Avenue, N.W.
Suite 500
Washington, D.C. 20004
(202) 626-6600

Its Attorneys

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SUMMARY

The market for wireless signal boosters is growing rapidly as consumers and businesses recognize the substantial benefits that can be provided by these devices. Signal boosters enhance the coverage of broadband wireless services, helping to ensure that they are universally available to the greatest number of consumers.

Signal boosters may also provide other significant benefits in the near future. For example, "smart" signal boosters could act as an integrated server for a subscriber's 4G smartphone, backing up the phone's data, caching browsed web pages, and more. Wireless signal boosters may also contribute to reducing RF emissions to users of wireless devices by enabling such devices to operate at far lower power levels, communicating primarily with a booster device and less often with a much more distant base station.

The substantial benefits of signal boosters may not be realized, however, if the Commission is persuaded to adopt unnecessary and overly burdensome restrictions on the design and operation of such device. Instead, the Commission should adopt only those measures that are reasonably necessary and minimally burdensome to prevent harmful interference. In this regard, Cellphone-Mate, Inc. supports the adoption of self-monitoring and shutdown or power reduction requirements in the event a signal booster malfunctions, detects oscillation, or approaches a carrier's base station.

In contrast, other proposed measures could harm significantly the grown of the wireless signal booster market segment. For example, coordination or product location registration requirements would impose excessive burdens on consumers of such devices, discouraging the purchase and use of such products, or encouraging widespread non-compliance. Further, proposed requirements for mobile signal boosters to operate only in narrowband mode, or when

tethered or docked with an individual wireless handset, or with remote shutdown capabilities would also constitute overly burdensome regulations that are not only unnecessary, but may not be technically feasible to implement at a reasonable cost to consumers.

Instead, the Commission can address adequately the limited interference potential that signal boosters present by manufacturing and design requirements that ensure that signal boosters self-monitor certain critical factors – including power level, oscillation, and base station proximity – and automatically either shut down or reduce power in order to prevent harmful interference.

TABLE OF CONTENTS

I. THE COMMISSION SHOULD NOT ATTEMPT TO REGULATE SEPERATELY FIXED AND MOBILE SIGNAL BOOSTER 2

II. THE COMMISSION CAN ADDRESS ADEQUATELY ANY LEGITIMATE INTERFERENCE CONCERNS THROUGH THE ADOPTION OF AUTOMATIC SHUTDOWN OR POWER REDUCTION CAPABILITIES ADDRESSING OSCILLATION AND SIGNAL OVERLOAD 4

III. THE COMMISSION SHOULD REFRAIN FROM ADOPTING OTHER MORE BURDENSOME REQUIIREMENTS FOR WIRLESS SIGNAL BOOSTERS 7

A. The Commission Should Not Attempt to Impose Notification or Registration Requirements on Users of Wireless Signal Boosters 8

B. The Commission Should Also Refrain From Mandating Coordination Requirements for Signal Boosters 10

C. The Commission Should Not Restrict Wireless Signal Boosters to Narrowband Capabilities 12

D. The Commission Should Not Require the Provision to Wireless Carriers of Remote Shutdown Capabilities 13

E. The Commission Should Not Impose Tethering of Docking Requirements for Mobile Signal Boosters 15

IV. THE SIGNAL BOOSTERS ALREADY IN USE BY BUSINESSES AND CONSUMERS DO NOT RAISE SIGNIFICANT INTERFERENCE CONCERNS FOR THE WIRELESS INDUSTRY 16

V. CONCLUSION 17

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To: The Commission

COMMENTS OF
CELLPHONE-MATE, INC.

Cellphone-Mate, Inc. ("Cellphone-Mate"), by its attorneys and pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. § 1.415, hereby files comments on the Notice of Proposed Rulemaking ("*NPRM*") in the above captioned proceeding.[1]

Cellphone-Mate is the technology leader in the design and manufacture of wideband signal boosters and is the only company currently supplying Commission certified fourth generation ("4G") long term evolution ("LTE") and 4G advance wireless service ("AWS") amplifiers on the aftermarket. Based in Silicon Valley, Cellphone-Mate is a California-incorporated small business that was founded a decade ago with a vision that intelligent signal boosters could eventually be integrated by businesses and consumers as a routine and complementary supplement to their existing wireless services.

[1] *See* Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters, *Notice of Proposed Rulemaking*, FCC 11-53, WT Docket No. 10-4 (April 6, 2011) ("*NPRM*").

During our company's history, we have shipped thousands of amplifiers to customers. We believe, however, that the overall market for wireless amplifiers is only at the incipient stage and innovative products will continue to be introduced to support the ongoing dramatic growth in the 3G/4G mobile broadband market. Fortune 100 and 500 companies, such as Dollar Tree, ExxonMobil, Hewlett-Packard, LG Electronics, Newell-Rubbermaid and Qualcomm use Cellphone-Mate products, as well government entities such as the U.S Air Force and the U.S. Army, and educational institutions such as Duke University and Stanford University.

Cellphone-Mate urges the Commission to adopt rules for wireless amplifiers that address adequately any legitimate interference concerns presented by the use of such equipment. To this end, the concerns raised by wireless carriers can be addressed fully through requirements for automatic shutdown or power reduction capabilities as a signal booster approaches a base station with which it is communicating, or in the event a signal booster detects oscillation. In contrast, the adoption of rules requiring consumers of wireless amplifiers to coordinate or register the locations of their devices would be unnecessary and burden this fledgling market segment, harm small wireless equipment manufacturers, and potentially deprive consumers of the substantial benefits in signal connectivity and reliability that wireless amplification equipment can provide.

I. THE COMMISSION SHOULD NOT ATTEMPT TO REGULATE SEPERATELY FIXED AND MOBILE SIGNAL BOOSTER

The *NPRM* proposes the adoption of two separate regulatory frameworks – one framework for fixed signal boosters (possibly including coordination requirements), and a different framework for mobile signal boosters (possibly including tethering or narrowband requirements).[2] The primary problem with such an approach is that signal boosters are

[2] *See id.*, ¶ 47.

increasingly being marketed and used for hybrid purposes, employed as a fixed device in a home or office, but often transported to different locations and, in many cases, used in transit.

Given the investment that consumers must make in wireless signal boosters (the costs of which, unlike handsets, are not subsidized by carriers), it is not surprising that a growing number of consumers seek to purchase a single device that can be used in both fixed and mobile environments. To accommodate such flexible use, manufacturers are designing signal boosters to employ adjustable transmit powers and both AC and DC input power, permitting the same unit to be used in a home, office, boat or recreational vehicle.

Recognizing this trend in the wireless amplification market sector, the Commission should adopt one set of rules for all such devices. Those rules should be based primarily on the Commission's proposal in the *NPRM* for mobile signal boosters.[3] As discussed herein, however, the rules for mobile signal boosters should not restrict such devices to narrowband capabilities (transmitting the signals of only one carrier) and should not include docking or tethering requirements.[4]

The use of a regulatory structure that accommodates signal boosters used in both fixed and mobile environments would address the increasingly transient and evolving uses of signal boosters by consumers. The adoption of rules based on the Commission's proposal for mobile signal boosters would also resolve the significant concerns raised by the overly burdensome regulatory concepts that are proposed in the *NPRM* for fixed signal boosters.

[3] *See id.*, ¶ 53.

[4] *See id.*, ¶ 54.

II. THE COMMISSION CAN ADDRESS ADEQUATELY ANY LEGITIMATE INTERFERENCE CONCERNS THROUGH THE ADOPTION OF AUTOMATIC SHUTDOWN OR POWER REDUCTION CAPABILITIES ADDRESSING OSCILLATION AND SIGNAL OVERLOAD

The *NPRM* proposes appropriately that the primary tool that should be used to ensure that signal boosters are not the source of harmful interference is for such equipment to self-monitor their operations and shut down or reduce power in the event that interference might result.[5] Cellphone-Mate supports such an approach as long as the self-monitoring requirements do not impose excessive cost requirements for consumers and are reasonably related to a legitimate concern regarding potential interference.

For example, signal boosters can be designed to monitor their output power. It is much more difficult, however, and of questionable value, for a signal booster to monitor its out-of-band emissions ("OOBE"). Once the design of a signal booster satisfies the Commission's OOBE rules as a part of the certification process, it is highly unlikely that the OOBE characteristics of the device will change during its operational lifetime.

The *NPRM* also proposes that signal boosters have the capability to detect signal feedback or oscillation and deactivate promptly upon such detection.[6] This is another good example of a reasonable and manageable technical requirement intended to address a legitimate potential interference concern.

The rest of the requirements proposed in the *NPRM*, however, are unnecessary to address the limited potential for harmful interference that could result from wireless signal boosters. In this regard, Cellphone-Mate has shipped thousands of wideband signal boosters throughout the

[5] *See id.*, ¶ 37.

[6] *See id.*

years. We have first hand knowledge that properly designed and installed wideband signal boosters are transparent to the wireless network operators and will not cause harmful interference.

It is only under extreme and unusual cases that a signal booster might cause harmful interference to wireless services. In all such cases, these problems are typically very easy to solve via our technical support line[7] and require minimal or no support from the cellular carrier. Further, the self-monitoring and shutdown capabilities discussed above can resolve interference concerns in nearly all potential situations, such as when a device is installed or used improperly by a consumer.

Cellphone-Mate acknowledges that an additional requirement proposed in the *NPRM* – the obligation for mobile signal boosters to power down as they approach the base station transmitter with which they are communicating[8] – may also pose a reasonable and only moderately burdensome requirement for signal booster equipment.[9] In considering the adoption of such a requirement, however, the Commission should recognize that such an obligation would impose a cost on consumers in the form of less reliable and available wireless services.

[7] In this regard, it may be appropriate to require all manufacturers and/or distributors of wireless signal boosters to maintain 24/7 help desks available online and through a toll-free telephone number.

[8] *See id.*, ¶ 53.

[9] At least one category of signal booster, the so-called inline booster, should not be required to have the automatic shutdown feature. Inline boosters are typically operated in fixed locations and do not work as a stand-alone device. Instead, they are attached to a modem and usually employ a lower decibel gain than a standard cellular amplifier. Since it cannot oscillate on its own, there should be no need to require it to have an automatic shutdown feature compared to a standard cellular booster or amplifier.

Granted, if a signal booster shuts down when approaching the base station of a carrier providing service to the user of the signal booster, that process is likely to go unnoticed by the user because the user's handset will be able to continue transmissions directly with the carrier's base station. In contrast, if a signal booster shuts down when approaching the base station of a carrier that is *not* providing service to the user of the signal booster, the process may interrupt wireless service to the user if the nearest base station for its own carrier is not within range of the handset.

In addition, if the Commission moves forward with the adoption of shutdown reduction requirements, the Commission should draft its rules in a sufficiently flexible and technically neutral manner in order to give manufacturers of wireless signal boosters the option to employ other measures, if desired, that may be less disruptive to the user, but equally effective in preventing interference. For example, as a signal booster in a mobile environment approaches a base station, it may be a far superior solution for the signal booster to gradually reduce its transmit power rather than shut down abruptly.

The need to inject flexibility and technical neutrality into the Commission's rules for signal boosters is critical given the nescient and rapidly evolving nature of this market sector. In addition to the increased access and availability to broadband wireless services provided to businesses and consumers by signal booster devices, other additional benefits may become available in the near future. As signal boosters become "smarter" and more intuitive in their interactions with smartphones and networks, it is not unreasonable to imagine boosters becoming an integrated part of the cellular network and becoming even more of an integral part of providing innovative new functions within the smart phone/network landscape. For example, besides being simply a signal booster, it could also become an integrated server for a subscriber's

4G smartphone, potentially increasing its capacity, reliability and speed through such functions as backing up the phone's data, caching browsed web pages, and more.

Wireless signal boosters also potentially facilitate the penetration and growth of small competitive wireless carriers, which generally lack the extensive coverage areas of the major providers. Further, wireless signal boosters may be the most promising solution to address potential RF radiation hazard concerns by enabling wireless handsets to operate far more frequently using reduced transmit power levels. With a signal booster in use, handsets need only use sufficient power to communicate with the booster and not with a far more distant cell site. As a result, RF emissions from the handset to the human body are greatly reduced.

Given these expanding potential roles, signal boosters may eventually be sold less as an aftermarket product, and more as routine equipment, possibly being included as standard or optional equipment in new cars, and installed routinely in new buildings. It is therefore critically important for the Commission to ensure that any regulations that are adopted do not impair unnecessarily the growth of this relatively young and promising market sector.

III. THE COMMISSION SHOULD REFRAIN FROM ADOPTING OTHER MORE BURDENSOME REQUIIREMENTS FOR WIRLESS SIGNAL BOOSTERS

The *NPRM* discusses the possible adoption of additional regulatory requirements on the design and operation of signal booster devices, including notification, coordination and, with respect to mobile signal boosters, prohibitions on wideband capabilities and tethering or docking requirements. Cellphone-Mate believes that each of these proposed requirements is unnecessary and could harm significantly the continued growth and future existence of the wireless market sector for signal boosters, potentially depriving consumers of the substantial public benefits that these devices can provide.

Instead, automatic shutdown or power reduction requirements are sufficient to prevent oscillation and overload into cellphone base station receivers. Any additional requirements that are imposed could stifle the market sector for signal boosters, potentially depriving consumers of important benefits, and driving the small independent businesses that manufacture these devices out of business.

A. The Commission Should Not Attempt to Impose Notification or Registration Requirements on Users of Wireless Signal Boosters

The adoption of notification or registration requirements for wireless signal boosters would impose an unnecessary burden on users of such devices and would be nearly impossible to enforce effectively. Wireless amplification devices are used by a myriad of consumers, including large and small businesses, mobile users, including mobile home owners, RV owners, and boat owners. In addition to original registrations of amplifiers upon purchase, a re-registration requirement would have to exist to contend with numerous relocations and transfers as businesses and individuals move to different locations and potentially transfer such devices to other people and entities.

It is also unclear how the Commission could enforce such a requirement given the significant difficulties that the Commission has already faced in the past enforcing rules governing such consumer devices as CB radios, radar detectors, police scanners, and GPS re-radiation equipment, to name a few. In each of these examples, the lesson has been clear, the Commission's regulation of such consumer devices is focused most effectively on the manufacture and design of such equipment, and should not rely on compliance by individual consumers with potentially burdensome regulations.

Further, by requiring registration of every single booster, it could very well overburden the Commission's administrative resources and would certainly over-regulate the signal booster

industry, severely limiting its growth potential and the benefit to the public. In assessing this possibility, the Commission should consider the arguably fragile nature of the signal booster market sector. Despite the attractive benefits that such devices can provide to businesses and consumers, a natural reluctance exists on the part of consumers to invest in such equipment. Although most wideband signal boosters are not very expensive (often a few hundred dollars), they pose an often unanticipated expense for new purchasers of wireless services. Such users often received their handsets from wireless carriers at heavily subsidized or below-cost prices. Subscribers also often purchase wireless services based on an assumption that they will enjoy ubiquitous signal coverage in the United States. These subscribers may be reluctant to purchase an additional device to provide the coverage capabilities that they thought were already available.

With this background in mind, additional regulations requiring consumers to register the locations of wireless signal boosters and update those registrations on a regular basis could easily constitute a sufficient burden to dissuade consumers from purchasing signal boosters in the first place. Such regulations could also dissuade additional manufacturers of consumer electronics from entering the market for signal boosters and introducing new and innovative products.

Although manufacturers of signal amplification equipment are part of the aftermarket for wireless services, they play a critical role in bringing 3G/4G and even 2G technology and service to millions of families and businesses. For example, Cellphone-Mate has just announced the introduction of a 4G LTE signal booster, which provides 4G LTE service to areas where there was no previous 4G service. The widespread availability and use of such devices would benefit consumers significantly.

Faced with heavy regulation, however, mainstream manufacturers of such equipment may exit the business, potentially resulting in such equipment being sold largely as a niche consumer device, often on a quasi gray market basis by less reputable manufacturers. Such distribution channels may overlook many of the legitimate regulations and certification requirements adopted by the Commission. Further, such less reputable distributors may be far less likely to advise consumers of their obligations as purchasers and users of signal booster equipment. The resulting interference concerns would be significantly greater and far more difficult to address than the relatively nominal spectrum management issues that are relevant to the existing market for wireless signal devices.

B. The Commission Should Also Refrain From Mandating Coordination Requirements for Signal Boosters

The *NPRM* proposes the imposition of coordination requirements for users of fixed signal boosters.[10] For obvious reasons, the *NPRM* acknowledges that such coordination requirements could not be imposed on users of mobile booster devices.[11] For this reason alone, the proposal to require coordination of fixed devices should be abandoned. Wireless signal boosters are rapidly becoming more flexible in their design and capabilities. Many consumers now require and use signal boosters in both fixed and mobile environments. As a result, any coordination requirement would be nearly impossible to enforce and arguably ineffective given the significant potential for consumers to be less than diligent in complying with such requirements.

Further, any regulation imposed by the Commission requiring individual consumers to coordinate with wireless carriers or obtain an individual license before installing and operating a

[10] *See NPRM*, ¶¶ 49-50.

[11] *See id.*, ¶ 53.

signal booster would severely restrict the market for such devices and dissuade consumers from considering the purchase of such equipment. The burdens of mandating coordination of such devices would be particularly substantial if consumers were required to coordinate with all wireless carriers in a given area (up to five or six carriers), rather than just the one carrier providing wireless services to the consumer.

The major wireless carriers have no incentive and have never shown any willingness to cooperate with consumers in the coordination of wireless signal boosters. Many wireless carriers compete in the market for such devices by providing comparable products, such as Femtocells, which they market in competition with independent companies that manufacture and sell signal boosters. It is therefore arguably in conflict with the business interests of the major wireless carriers to approve the usage of signal boosters, which can compete with their own product and give consumers a choice of products for enhancing their cellular services.

Our customers have brought to our attention situations in which wireless carriers have reportedly told them that signal boosters, other than those sold by the carriers themselves, are illegal. These consumers have been offered products marketed by the carriers, usually with higher costs and less effective results, thus forcing consumers into accepting less attractive solutions.

We are not aware of any wideband signal booster, no matter how well designed, that has been approved for use by any single carrier. In fact, it is appears to be the carrier's policy to only approve narrowband signal boosters which operate on one or more of their own spectrum bands. In this manner, wireless carriers not only increase costs for consumers, but they potentially harm smaller competing carriers that benefit from access to wideband boosters to supplement their often smaller coverage areas.

The Commission should refrain from allowing its regulatory authority to be misused in this manner. Instead, the Commission should adopt only those regulations that are absolutely necessary and minimally burdensome to ensure that wireless signal boosters employed by consumers do not result in harmful interference to cellular networks.

C. The Commission Should Not Restrict Wireless Signal Boosters to Narrowband Capabilities

As noted above, many wireless carriers maintain policies of approving the use of signal boosters only when they have narrowband capabilities, retransmitting signals only in that carriers' spectrum or portions thereof. Such policies are reflected in the proposals of AT&T and CTIA, which have urged the Commission to restrict manufacturers to the sale of carrier-specific narrowband boosters that limit transmissions to the spectrum licensed to that carrier.[12] The *NPRM* also discusses possible rules for narrowband signal boosters, presenting them as a possible requirement for mobile booster operations.[13]

Narrowband signal boosters have two significant drawbacks that cannot be overcome in the near future. First, it is cost prohibitive to design and market such devices. Narrowband signal boosters typically cost much more to manufacture than wideband signal boosters with retail prices of at least $1,000, making them far too expensive for most potential buyers.

Second, the functional capabilities of narrowband signal boosters are unattractive to most consumers because they improve only the signals of one carrier and only on one specific spectrum band. As a result, an individual consumer that purchases a narrowband signal booster would be forced to purchase a new booster in order to switch carriers.

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[12] *See id.*, ¶¶ 57-58.

[13] *See id.*, ¶ 54.

The disadvantages for businesses are even greater. In order to provide general wireless coverage for a store, or any public location, two booster units would be needed just to cover the 800 MHz A and B block cellular bands. Six booster units could be required to cover the A, B, C, D, E, and F blocks of the PCS band. Finally, a business would require at least two more units to effectively cover each of the 4G LTE band (upper 700 MHz for Verizon and lower 700 MHz for AT&T). Ten narrowband signal boosters are listed already, and that does not even include the other 4G band, the AWS band. It is untenable to suggest that any consumer, business or government agency would be willing to pay and install ten different systems, as needed, when a much less expensive multiband unit could be designed to perform the same function.

Given these facts, it becomes fairly obvious that wideband signal boosters are the only viable and commercially reasonable solution. Any regulatory obligation requiring the sale of narrowband signal boosters would therefore drive reputable manufacturers of signal boosters out of the market, likely depriving consumers and businesses of the economic benefits and convenience of such devices.

D. The Commission Should Not Require the Provision to Wireless Carriers of Remote Shutdown Capabilities

It would also be impractical and technically challenging to offer to wireless carriers the capability to shut down remotely signal booster devices. As the *NPRM* notes, the possible use of remote shutdown capabilities has been discussed in the various submissions of AT&T, CTIA and Wilson Electronics.[14]

[14] *See id.*, ¶ 61.

In the experience of Cellphone-Mate, remote shut-off capabilities are rarely, if ever, needed to prevent harmful interference. Other solutions, such as self-monitoring capabilities, are more effective and expeditious in resolving any problems that might occur.

Further, the proposed imposition of remote shutdown capabilities raises a variety of potentially difficult questions. For example, would remote shutdown capabilities be available only to the carrier providing service to the user of a signal booster, or would competing carriers have remote shutdown capabilities as well? If other carriers are provided with shutdown capabilities, would they be required to demonstrate that such shutdowns were justified solely by verified and specifically-identified cases of harmful interference (rather than just indications of higher levels of noise in a certain area), and not for competitive or other reasons? Further, would such competing carriers be required to confer with the providing carrier before a shutdown order is issued?

More importantly, would users of signal boosters have a right of prior notification or appeal, such as to the Commission, before a signal booster is shut down? In addition, would signal booster users be given the ability to override a remotely-issued shut down in the event of an emergency, such as if the user needs the signal booster to complete an E911 emergency call? If not, what liability concerns would arise?

Cellphone-Mate understands that Wilson Electronics may be exploring the inclusion of remote shutdown capabilities in some of its devices. Before the Commission considers the imposition of such a requirement on the entire industry, the Commission should investigate whether it is technically feasible and operationally practical. Obviously, it would not be beneficial for consumers if the Commission were to adopt a regulatory obligation that was not

only uncertain in its efficacy, but could be satisfied in the foreseeable future by only one manufacturer of signal booster devices.

E. The Commission Should Not Impose Tethering of Docking Requirements for Mobile Signal Boosters

The *NPRM* acknowledges that it is not possible to require coordination of mobile signal boosters.[15] As an alternative, the *NPRM* requests comment on whether mobile signal boosters should be required to be wired or "tethered" to the wireless device the signal of which they are amplifying, or whether the "docking" of wireless handsets with the booster be required.[16]

Such requirements would be unnecessary and overly burdensome to address the potential for overload noise into a base station. This issue can be resolved in a far less cumbersome manner by requiring that signal boosters detect when they are approaching a base station and reduce power or shutoff.

Not only would tethering or docking requirements be unnecessary, but they would be very difficult to implement from a technical and practical perspective. Granted, most signal booster products include an RF input port that would permit the addition of a docking unit or other inline signal input equipment. It has been many years, however, since wireless handsets such as cell phones and smartphones were manufactured with the inclusion of an output jack that could enable its connection with a signal booster or docking device. Not only are such output jacks lacking in the vast majority of wireless devices, but the very streamlined profile of such devices would make it exceedingly difficult, if not impossible, to accommodate such output jacks in future versions of such products, if mandated by the Commission. Further, the

[15] *See id.*, ¶ 53.

[16] *See id.*, ¶ 54.

tremendous variety of wireless handset designs that exists on the market today would make it exceedingly difficult to develop a docking station capable of accommodating most handset designs. It would be even more difficult to develop an inexpensive docking station that could accommodate multiple handsets.

Not only would such requirements be difficult to implement, but they would be very unattractive for consumers because they would limit the functional use of a signal booster to a signal handheld device, when consumers often seek to enhance the coverage capabilities of multiple devices. A docking requirement would also make it very difficult for consumers to use wireless devices designed for texting or browsing the Internet.

Therefore, the Commission should refrain from requiring that mobile signal boosters be tethered or docked to a wireless device in order to amplify its signal. Other far less burdensome requirements, such as self-shutdown or power reduction capabilities, address adequately the potential interference concerns raised by the growing use of mobile signal boosters. Further, the imposition of such an impractical requirement would discourage the use of such devices by consumers, or encourage widespread non-compliance.

IV. THE SIGNAL BOOSTERS ALREADY IN USE BY BUSINESSES AND CONSUMERS DO NOT RAISE SIGNIFICANT INTERFERENCE CONCERNS FOR THE WIRELESS INDUSTRY

Finally, the *NPRM* requests comment on any measures that should be taken to address signal boosters that are already in use by consumers, including those that may not satisfy any technical and operational requirements that are adopted in this proceeding.[17] The practical reality is that very little if anything is needed to be done by the Commission to manage the

[17] *See id.*, ¶¶ 62-63.

existing generation of wireless signal boosters. Since the arrival of 4G capabilities, the vast majority of wireless amplifiers in circulation today are expected to become obsolete within a few years. Demand by consumers and businesses for 4G capabilities and signal amplifiers that can accommodate these capabilities will force a migration to a new generation of multi-band, 4G compatible signal booster devices.

Second, signal boosters, on average, have a relatively limited functional working lifetime, further forcing the migration by consumers to a new generation of signal booster equipment. The Commission should therefore take comfort in the fact that the rules and technical requirements that are adopted in this proceeding will be incorporated rapidly by manufacturers into a new generation of signal booster devices. And importantly, as long as the rules adopted by the Commission are reasonable and not exceedingly burdensome, consumers can be expected to purchase this new generation of fully compliant booster devices and rapidly employ them as a replacement to the equipment that already exists in circulation.

V. CONCLUSION

For the foregoing reasons, the Commission should facilitate the continued growth of the market for signal booster devices in order to enable additional consumers and businesses to benefit from such equipment. The Commission should authorize the continued sale and use of such devices subject to only to those regulatory requirements that are reasonably necessary to prevent harmful interference. Specifically, the Commission should require that signal boosters self-monitor and either shut down or reduce power in the event of oscillation or to prevent overload to wireless base stations. The Commission should not, however, impose additional burdensome requirements, such as coordination or registration rules, or requirements that mobile signal booster be capable of remote shutdown, or operate only in a narrowband mode, or tethered

or docked to a specific wireless device. Such measures are not only unnecessary, but could easily extinguish this growing and highly beneficial wireless market segment.

Respectfully submitted,

CELLPHONE-MATE, INC.

By: _____

Hongtao Zhan
Chairman and CEO
Cellphone-Mate, Inc.
48820 Kato Rd. Suite 300B
Fremont, CA 94538

Bruce A. Olcott
Squire, Sanders & Dempsey (US) LLP
1201 Pennsylvania Avenue, N.W.
Suite 500
Washington, D.C. 20004
(202) 626-6600

Its Attorneys

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