Technical Note TN-1842h

FCC Narrowbanding Overview

6 October 2015

This Technical Note provides an overview of the FCC's narrowbanding regulations and explains how these affect Tait radio equipment. For a description of FCC's narrowbanding see www.fcc.gov/narrowbanding

1.   FCC Narrowband Regulation

From January 1, 2013 radio equipment imported into the United States must not be allowed to transmit Medium (20kHz) or Wide (25kHz) deviations within 150-174 MHz (VHF) or 421-470MHz (UHF) bands.
There are some paging channels which are not affected, please refer to FCC's website for a detailed list of these.

2.   How This Affects Tait Radio Equipment

Historically, many Tait products provided the ability to select deviation via software.
To meet FCC's new requirements, all Tait product software has been updated. The new releases only allow wideband channels to be programmed in the above frequency ranges, if the radio equipment has a wideband Software Feature Enabler key (SFE).

To provide FCC compliance and product conformity a Wideband SFE is required for the above frequencies – **TxAS083**.

If required, the wideband SFE can be requested via the normal logistics supply chain by providing the radios serial number and model.

3.   Wideband SFE Key Codes

Product	Wideband SFE
Base Station*	TBAS083
Mobile/TB7100	TMAS083
Portable	TPAS083

*except TB7100s, which use mobile SFEs

4.   TP8100 Portables

As software feature enabler (SFE) keys are not supported on the TP8100 product range two programming applications have been produced.

TP8100 Programming Application v2.15 will not allow Medium or Wideband to be programmed in B1 (VHF) and H5/H6 (UHF) bands, except the excluded frequencies. Other bands are unchanged.

TP8100 Programming Application v2.16 allows wideband channels to be programmed across all frequencies. This version is not available to USA users.

5.   Terminal Wideband Capabilities

If firmware is upgraded on terminals, different behaviour can be observed on various product ranges, as some products now store their manufacture date while others do not.

If a TM9100 or TP9100 is manufactured before the introduction of a 'build-date' and is firmware upgraded, the radio will still allow wideband channels to be programmed without the need to use the SFE TxAS083.

All TM9300, TP9300 and all TM9400 and TP9400 terminals manufactured will have a 'build-date' so will always demand a SFE Key.

All TB7100, TM8100, TM8200 and TP8100's manufactured with, or upgraded to, FCC compliant firmware will have wideband deviation restricted.
These models do not save their date of manufacture, so the firmware version and programming application determine if wideband can be programmed as per the tables below.

Do I lose my SFE if I downgrade to a pre Wideband build of Firmware?

No. Though earlier builds won't recognise the WB SFE. If the Terminal is later upgraded to a WB build or later the SFE will become available again.

Terminals

TM8100 (Refer to TN-1844-SR)

Chassis Serial Number	Sub-assembly Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	Any	v2.18 or older	N
Any	Any	Any	v2.19 or later	Y

TM8200 (Refer to TN-1845-SR)

Chassis Serial Number	Sub-assembly Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	Any	v6.01 or older	N
Any	Any	Any	v6.02 or later	Y

TM9100 (Refer to TN-1836c-SR)

Chassis Serial Number	Sub-assembly Serial Number	Date of Manuf.	Hardware has 'build date'?	Firmware	Wideband SFE required?
Prior to 20058966	Prior to 6632966	Prior to 12 Nov. 2012	No	Any	N
From 20058966	From 6632966	From 12 Nov. 2012	Yes	Prior to v7.81.05	N
From 20058966	From 6632966	From 12 Nov. 2012	Yes	v7.81.05 or later	Y

Terminals (Cont.)

TP9100 (Refer to TN-1836c-SR)

Chassis Serial Number	Sub assembly Serial Number	Date of Manuf.	Hardware has 'build date'	Firmware	Wideband SFE required?
Prior to 21198800	Prior to 4118378	Prior to 12 Nov. 2012	No	Any	N
From 21198800	From 4118378	From 12 Nov. 2012	Yes	Prior to v7.81.05	N
From 21198800	From 4118378	From 12 Nov. 2012	Yes	v7.81.05 or later	Y

TP8100 (Refer to TN-1843-SR)

	Serial Number	Hardware	Firmware	USA users	Non-USA users
Conventional or MPT1327	Any	Any	v1.10 (Conv) or v2.11(Trunk) or older	Prog App v2.15	Prog App v2.16
	Any	Any	v1.11 (Conv) or v2.12 (Trunk) or later	Prog App v2.15	Prog App v2.16

6. Base Station Wideband Capabilities

All TB8100 and TB9000 Base Stations manufactured with, or upgraded to, FCC compliant firmware will have wideband deviation restricted.
These models do not save their date of manufacture, so the firmware version and programming application determine if wideband can be programmed as per the tables below.

Do I lose my SFE if I downgrade to a pre Wideband build of Firmware?

No. Though earlier builds won't recognise the Wideband SFE. If the Base Station is later upgraded to a Wideband build or later the SFE will become available again.

Base Stations

TB7100 (Refer to TN-1832b-SR)

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	v2.18 or older	N
Any	Any	v2.19 or later	Y

TB8100 (Refer to TN-1830-SR)

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	v3.27 or older	N
Any	Any	v3.28 or later	Y

TB8200 (Refer to TN-1846-SR)

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	v1.28 or older	N
Any	Any	v1.30 or later	Y

TB9100 Trunked (Refer to TN-1840-SR)

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	v3.72 or older	N
Any	Any	v3.73 or later	Y

TB9100 Conventional (Refer to TN-1839-SR)

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	v3.64 or older	N
Any	Any	v3.65 or later	Y

TB9300

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	Any	Wide Band Not Available

TB9400

Serial Number	Hardware	Firmware	Wideband SFE required?
Any	Any	Any	Wide Band Not Available

7. FCC Frequency Bands
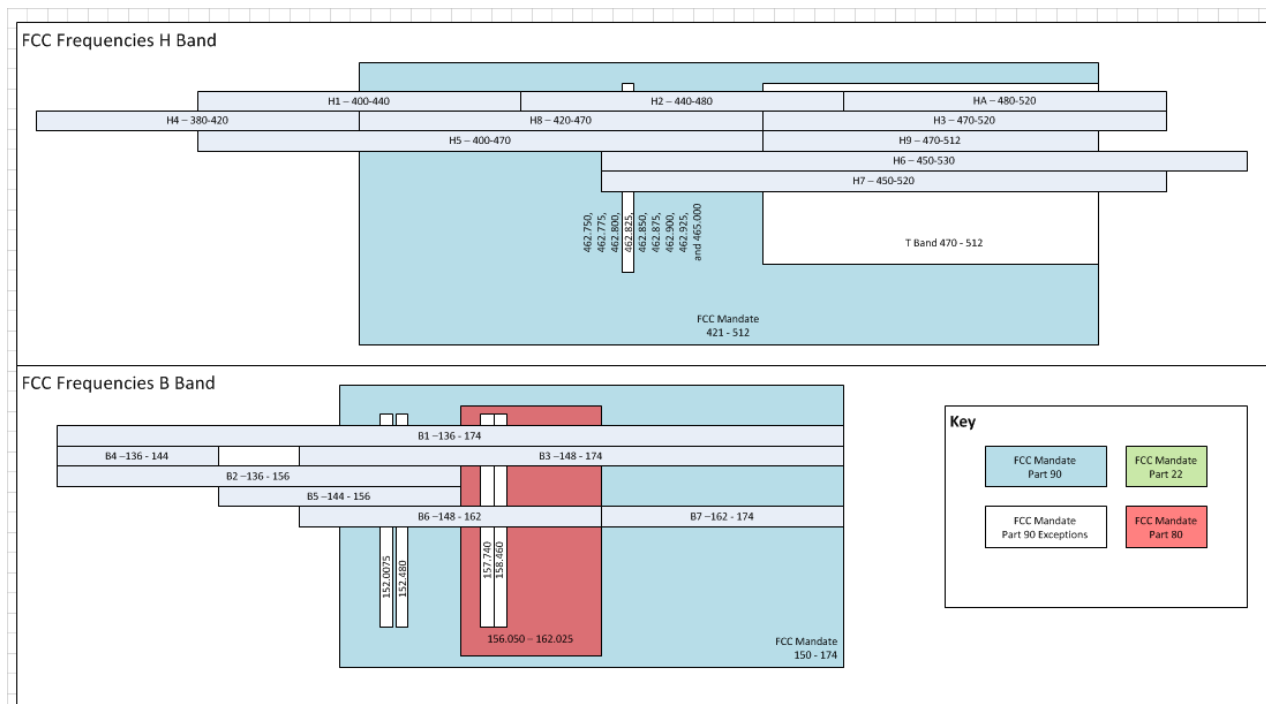
8. Publication Information

Related Documentation   Software Release Notes as listed above.

Compliance Issues   None.

Compatibility Issues   None.

CSO Instruction   Inform all service staff and dealers of the released information.

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Distribution Level   Associate.

Document History

Issue	Date	Description	Author
–	21 December 2012	First release	N Intemann
(b)	14 January 2013	Corrected TM/TP9100 S/N's	G Brenchley
(c)	19 April 2013	Added First 'S' S/Numbers and additional Compatibility info	M Brown
(d)	23 April 2013	Updated TP8100 Applications	G Brenchley
(e)	1 May 2013	Added Build dates for TM/TP9100	M Brown
(f)	8 May 2013	Added details for SFE for terminals after downgrade	M Brown
(g)	15 May 2013	Added details for SFE for Base Stations after downgrade	M Brown

| (h) | 6 October 2015 | Wide band SFE not available for TB9300 and TB9400 | J Northcott |