E_TSUM Requested by: DAVE	Date: 17.03.2022 2:46:24 PM	DB: BOEING RF TECH DEMO - A~	Plan Id.:	Notice type: NONGEO
A	*A1a* Sat. Network: VARUNA	*A1f1* Notif. adm.: USA	*A1f3* Inter. sat. org.:	*BR1* Date of receipt: 15.03.2022
BR20 BR IFIC no.:	*BR6a/BR6b* Id. no.: 1	*BR3a* Provision reference: 9.1/IA	*BR2* Adm. serial no.:	

Résumé / Summary / Resumen

Article 9, sous-section IA / Article 9, sub-section IA / Artículo 9, sub-sección IA

第9条第1A分节 / Статья 9, подраздел IA / المادة 9، القسم الفرعي IA

B1a Beam designation	B2 Emi-Rcp	BR8 Action code	BR7a Group id.	BR9 Action code	BR47 Frequency band (MHz)	BR62 Expiry date for bringing into use	C4a Class of station
SRX	R		3		2049.85 - 2050.15		ET
SRX2	R		6		2049.85 - 2050.15		ET
URX	R		4		402.88 - 402.92		ET
URX2	R		7		402.88 - 402.92		ET
UTX	E		5		400.48 - 400.52		ET
UTX2	E		8		400.48 - 400.52		ET

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A *A1a* Sat. Network: VARUNA *A1f1* Notif. adm.: USA *A1f3* Inter. sat. org.: *BR1* Date of receipt: 15.03.2022 *BR20* BR IFIC no.:

BR6a/BR6b Id. no.: 1 *BR3a* Provision reference: 9.1/IA *BR2* Adm. serial no.: SRX R

A1f2 Submitted on behalf:

A1g Short Mission Duration Res 32: N

A4b1 No. of orbital planes: 1 *A4b2* Ref. body: T *BR43* Orbital configuration:

A4b1a Constellation: N *A4b1b* Configuration type: *A4b1c* Number of sub-sets mutually exclusive: *A4b1d* Attachment no.:

A4b3a No. of space stations simult. trans. on Northern Hemisphere: *A4b3b* No. of space stations simult. trans. on Southern Hemisphere:

Orbital plane id. no.	*A4b4a Inclination angle*	*A4b4b No. of satellites in this plane*	*A4b4c Period*	*A4b4d Apogee*	*A4b4e Perigee*	*A4b4f Min. altitude*	*A4b4i Arg. of perigee*	*A4b4j Long. asc. node*	*A4b4m,n,o Sun synchronous*		
									Y/N	*Node reference time*	*Node local time*
1	54	1	0-01:46	1056e0	1056e0	1056e0			N		

Orbital plane no.	*Satellite no.*	*A4b4h Initial phase angle*	*A4b4k Date*	*A4b4l Time*	*B4a Orbit link / List of beams*
1	1				

B1a/BR17 Beam designation: SRX *B1b* Steerable: *B2* Emi-Rcp: R *B3a1* Max. co-polar gain: 4

B2a1 Transmit only when visible from notified service area: Y *B2a2* Min. Elev. Angle:

B3c1 Co-polar antenna pattern

Co-polar ref. pattern	Coef. A	Coef. B				Co-polar rad. diag.

List of orbital planes

ALL

B4a3a1 Angle alpha: *B4a3a2* Angle beta:

BR92 Attach. for missing angle alpha/beta:

BR7a/BR7b Group id.: 3 *BR1* Date of receipt: 15.03.2022 *C2c* RR No. 4.4:

BR14 Special Section:

C4a Class of station: ET *C3a* Assigned freq. band: *C5a* Noise temperature: 330

C4b Nature of service: OT *C6a* Polarization type: CR *C6b* Polarization angle:

C11a2 Service area: G I *C11a3* Service area diagram:

A2b Period of valid.: 5 *A3a* Op. agency: 161 *A3b* Adm. resp.: A *BR16* Value of type C8b:

BR96 Start date for 9.1/9.1A:

BR60 Regulatory deadline(s) 11.44/11.44.1:

C1 Frequency Range

C1a Lower limit		*C1b* Upper limit	
2049.85	MHz	2050.15	MHz

	C7a Design. of emission	*C8a1/C8b1* Max. peak pwr	*C8a2/C8b2* Max. pwr dens.	*C8c1* Min. peak pwr	*C8c2* Attch.	*C8c3* Min. pwr dens.	*C8c4* Attch.	*C8e1* C/N ratio	*C8e2* Attch.	*C8f2* E.i.r.p. on the beam axis
1	300KG1D--	20	-34.7	0		-54.7		16		

C7b Carrier frequency of the emissions (300KG1D--)

2050	MHz																

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A | *A1a* Sat. Network: VARUNA | *A1f1* Notif. adm.: USA | *A1f3* Inter. sat. org.: | *BR1* Date of receipt: 15.03.2022 | *BR20* BR IFIC no.:

BR6a/BR6b Id. no.: 1 | *BR3a* Provision reference: 9.1/IA | *BR2* Adm. serial no.: | SRX | R

C10b1 Assoc. earth station id.	*C10b2* Type	*C10c1* Geographical coord.		*C10c2* Ctry	*C10d1/C10d2* Cls. / Nat.			*C10d3* Max. iso. gain	*C10d4* Bmwdth						
IT-01	S	009E21 44	45N35 36	I	1	TT	OT	34.3	3.2						
UK-01	S	000W51 30	60N44 54	G	1	TT	OT	35.1	2.6						

	C10d5a Co-polar antenna pattern						
C10b1 Assoc. earth station id.	Co-polar ref. pattern	Coef. A	Coef. B	Coef. C	Coef. D	Phi1	Co-polar rad. diag.
IT-01	REC-465-5						
UK-01	REC-465-5						

13C Remarks: CMD RX

B1a/BR17 Beam designation: SRX2 | *B1b* Steerable: | *B2* Emi-Rcp: R | *B3a1* Max. co-polar gain: 4

B2a1 Transmit only when visible from notified service area: Y | *B2a2* Min. Elev. Angle:

B3c1 Co-polar antenna pattern						
Co-polar ref. pattern	Coef. A	Coef. B				Co-polar rad. diag.

List of orbital planes
ALL

B4a3a1 Angle alpha: | *B4a3a2* Angle beta:

BR92 Attach. for missing angle alpha/beta:

BR7a/BR7b Group id.: 6 | *BR1* Date of receipt: 15.03.2022 | *C2c* RR No. 4.4:

BR14 Special Section:

C4a Class of station: ET | *C3a* Assigned freq. band: | *C5a* Noise temperature: 330

C4b Nature of service: OT | *C6a* Polarization type: CR | *C6b* Polarization angle:

C11a2 Service area: G I | *C11a3* Service area diagram:

A2b Period of valid.: 5 | *A3a* Op. agency: 161 | *A3b* Adm. resp.: A | *BR16* Value of type C8b:

BR96 Start date for 9.1/9.1A:

BR60 Regulatory deadline(s) 11.44/11.44.1:

C1 Frequency Range			
C1a Lower limit		*C1b* Upper limit	
2049.85	MHz	2050.15	MHz

	C7a Design. of emission	*C8a1/C8b1* Max. peak pwr	*C8a2/C8b2* Max. pwr dens.	*C8c1* Min. peak pwr	*C8c2* Attch.	*C8c3* Min. pwr dens.	*C8c4* Attch.	*C8e1* C/N ratio	*C8e2* Attch.	*C8f2* E.i.r.p. on the beam axis
1	300KG1D--	20	-34.7	0		-54.7		16		

C7b Carrier frequency of the emissions (300KG1D--)																	
2050	MHz																

C10b1 Assoc. earth station id.	*C10b2* Type	*C10c1* Geographical coord.		*C10c2* Ctry	*C10d1/C10d2* Cls. / Nat.			*C10d3* Max. iso. gain	*C10d4* Bmwdth						
IT-01	S	009E21 44	45N35 36	I	1	TT	OT	34.3	3.2						
UK-01	S	000W51 30	60N44 54	G	1	TT	OT	35.1	2.6						

E_TSUM Requested by: DAVE | Date: 17.03.2022 2:46:24 PM | DB: BOEING RF TECH DEMO - A~ | Plan Id.: | Notice type: NONGEO

A | *A1a* Sat. Network: VARUNA | *A1f1* Notif. adm.: USA | *A1f3* Inter. sat. org.: | *BR1* Date of receipt: 15.03.2022 | *BR20* BR IFIC no.:

BR6a/BR6b Id. no.: 1 | *BR3a* Provision reference: 9.1/IA | *BR2* Adm. serial no.: | SRX2 | R

	C10d5a Co-polar antenna pattern						
C10b1 Assoc. earth station id.	Co-polar ref. pattern	Coef. A	Coef. B	Coef. C	Coef. D	Phi1	Co-polar rad. diag.
IT-01	REC-465-5						
UK-01	REC-465-5						

13C Remarks: CMD RX

B1a/BR17 Beam designation: URX | *B1b* Steerable: | *B2* Emi-Rcp: R | *B3a1* Max. co-polar gain: 1.8

B2a1 Transmit only when visible from notified service area: Y | *B2a2* Min. Elev. Angle:

B3c1 Co-polar antenna pattern						
Co-polar ref. pattern	Coef. A	Coef. B				Co-polar rad. diag.

List of orbital planes: ALL

B4a3a1 Angle alpha: | *B4a3a2* Angle beta:

BR92 Attach. for missing angle alpha/beta:

BR7a/BR7b Group id.: 4 | *BR1* Date of receipt: 15.03.2022 | *C2c* RR No. 4.4: Y

BR14 Special Section:

C4a Class of station: ET | *C3a* Assigned freq. band: | *C5a* Noise temperature: 330

C4b Nature of service: OT | *C6a* Polarization type: L | *C6b* Polarization angle: 0

C11a2 Service area: G | I | USA | *C11a3* Service area diagram:

A2b Period of valid.: 5 | *A3a* Op. agency: 161 | *A3b* Adm. resp.: A | *BR16* Value of type C8b:

BR96 Start date for 9.1/9.1A:

BR60 Regulatory deadline(s) 11.44/11.44.1:

C1 Frequency Range			
C1a Lower limit		*C1b* Upper limit	
402.88	MHz	402.92	MHz

	C7a Design. of emission	*C8a1/C8b1* Max. peak pwr	*C8a2/C8b2* Max. pwr dens.	*C8c1* Min. peak pwr	*C8c2* Attch.	*C8c3* Min. pwr dens.	*C8c4* Attch.	*C8e1* C/N ratio	*C8e2* Attch.	*C8f2* E.i.r.p. on the beam axis
1	40K0F1DBN	18.1	-27.9	-1.9		-47.9		16		

C7b Carrier frequency of the emissions (40K0F1DBN)																	
402.9	MHz																

	C10b1 Assoc. earth station id.	*C10b2* Type	*C10c1* Geographical coord.		*C10c2* Ctry	*C10d1/C10d2* Cls. / Nat.			*C10d3* Max. iso. gain	*C10d4* Bmwdth						
	SANTA CLARA, CA	S	121W57 40	37N22 48	USA	1	TT	OT	21.5	12						
	LITTLETON, CO	S	105W08 01	39N34 24	USA	1	TT	OT	20.8	13.4						
	IT-01	S	009E21 44	45N35 36	I	1	TT	OT	16	23						
	UK-01	S	000W51 30	60N44 54	G	1	TT	OT	16	23						

	C10d5a Co-polar antenna pattern						
C10b1 Assoc. earth station id.	Co-polar ref. pattern	Coef. A	Coef. B	Coef. C	Coef. D	Phi1	Co-polar rad. diag.
SANTA CLARA, CA	AP8						

E_TSUM Requested by: DAVE Date: 17.03.2022 2:46:24 PM DB: BOEING RF TECH DEMO - A~ Plan Id.: Notice type: NONGEO

A | *A1a* Sat. Network: VARUNA | *A1f1* Notif. adm.: USA | *A1f3* Inter. sat. org.: | *BR1* Date of receipt: 15.03.2022 | *BR20* BR IFIC no.:

BR6a/BR6b Id. no.: 1 | *BR3a* Provision reference: 9.1/IA | *BR2* Adm. serial no.: | URX | R

LITTLETON, CO	AP8
IT-01	AP8
UK-01	AP8

13C Remarks:

B1a/BR17 Beam designation: URX2 | *B1b* Steerable: | *B2* Emi-Rcp: R | *B3a1* Max. co-polar gain: 1.8

B2a1 Transmit only when visible from notified service area: Y | *B2a2* Min. Elev. Angle:

B3c1 Co-polar antenna pattern

Co-polar ref. pattern	Coef. A	Coef. B				Co-polar rad. diag.

List of orbital planes

ALL

B4a3a1 Angle alpha: | *B4a3a2* Angle beta:

BR92 Attach. for missing angle alpha/beta:

BR7a/BR7b Group id.: 7 | *BR1* Date of receipt: 15.03.2022 | *C2c* RR No. 4.4: Y

BR14 Special Section:

C4a Class of station: ET | *C3a* Assigned freq. band: | *C5a* Noise temperature: 330

C4b Nature of service: OT | *C6a* Polarization type: L | *C6b* Polarization angle: 0

C11a2 Service area: G | I | USA | *C11a3* Service area diagram:

A2b Period of valid.: 5 | *A3a* Op. agency: 161 | *A3b* Adm. resp.: A | *BR16* Value of type C8b:

BR96 Start date for 9.1/9.1A:

BR60 Regulatory deadline(s) 11.44/11.44.1:

C1 Frequency Range

C1a Lower limit		*C1b* Upper limit	
402.88	MHz	402.92	MHz

	C7a Design. of emission	*C8a1/C8b1* Max. peak pwr	*C8a2/C8b2* Max. pwr dens.	*C8c1* Min. peak pwr	*C8c2* Attch.	*C8c3* Min. pwr dens.	*C8c4* Attch.	*C8e1* C/N ratio	*C8e2* Attch.	*C8f2* E.i.r.p. on the beam axis
1	40K0F1DBN	18.1	-27.9	-1.9		-47.9		16		

C7b Carrier frequency of the emissions (40K0F1DBN)

402.9	MHz																		

C10b1 Assoc. earth station id.	*C10b2* Type	*C10c1* Geographical coord.		*C10c2* Ctry	*C10d1/C10d2* Cls. / Nat.			*C10d3* Max. iso. gain	*C10d4* Bmwdth
SANTA CLARA, CA	S	121W57 40	37N22 48	USA	1	TT	OT	21.5	12
LITTLETON, CO	S	105W08 01	39N34 24	USA	1	TT	OT	20.8	13.4
IT-01	S	009E21 44	45N35 36	I	1	TT	OT	16	23
UK-01	S	000W51 30	60N44 54	G	1	TT	OT	16	23

C10d5a Co-polar antenna pattern

C10b1 Assoc. earth station id.	Co-polar ref. pattern	Coef. A	Coef. B	Coef. C	Coef. D	Phi1	Co-polar rad. diag.
SANTA CLARA, CA	AP8						
LITTLETON, CO	AP8						

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A | *A1a* Sat. Network: VARUNA | *A1f1* Notif. adm.: USA | *A1f3* Inter. sat. org.: | *BR1* Date of receipt: 15.03.2022 | *BR20* BR IFIC no.:

BR6a/BR6b Id. no.: 1 | *BR3a* Provision reference: 9.1/IA | *BR2* Adm. serial no.: | URX2 | R

IT-01	AP8						
UK-01	AP8						

13C Remarks:

B1a/BR17 Beam designation: UTX | *B1b* Steerable: | *B2* Emi-Rcp: E | *B3a1* Max. co-polar gain: 2.1

B2a1 Transmit only when visible from notified service area: Y | *B2a2* Min. Elev. Angle:

B3c1 Co-polar antenna pattern

Co-polar ref. pattern	Coef. A	Coef. B				Co-polar rad. diag.

List of orbital planes

ALL

B4a3a1 Angle alpha: | *B4a3a2* Angle beta:

BR92 Attach. for missing angle alpha/beta:

BR7a/BR7b Group id.: 5 | *BR1* Date of receipt: 15.03.2022 | *C2c* RR No. 4.4:

BR14 Special Section:

C4a Class of station: ET | *C3a* Assigned freq. band:

C4b Nature of service: OT | *C6a* Polarization type: L | *C6b* Polarization angle: 0

C8d1 Max. tot. peak pwr.: | *C8d2* Contiguous bandwidth:

C11a2 Service area: G | I | USA | *C11a3* Service area diagram:

A2b Period of valid.: 5 | *A3a* Op. agency: 161 | *A3b* Adm. resp.: A | *BR16* Value of type C8b:

BR96 Start date for 9.1/9.1A:

BR60 Regulatory deadline(s) 11.44/11.44.1:

C1 Frequency Range

C1a Lower limit		*C1b* Upper limit	
400.48	MHz	400.52	MHz

C7a Design. of emission	*C8a1/C8b1* Max. peak pwr	*C8a2/C8b2* Max. pwr dens.	*C8c1* Min. peak pwr	*C8c2* Attch.	*C8c3* Min. pwr dens.	*C8c4* Attch.	*C8e1* C/N ratio	*C8e2* Attch.	*C8f1* E.i.r.p. on the beam axis
1 40K0F1DBN	6	-40	-40		-60		16		

C7b Carrier frequency of the emissions (40K0F1DBN)

400.5	MHz																		

C10b1 Assoc. earth station id.	*C10b2* Type	*C10c1* Geographical coord.		*C10c2* Ctry	*C10d1/C10d2* Cls. / Nat.			*C10d3* Max. iso. gain	*C10d4* Bmwdth	*C10d6* Noise temp.		
SANTA CLARA, CA	S	121W57 40	37N22 48	USA	1	TT	OT	21.5	12	500		
LITTLETON, CO	S	105W08 01	39N34 24	USA	1	TT	OT	20.8	13.4	500		
IT-01	S	009E21 44	45N35 36	I	1	TT	OT	16	23	575		
UK-01	S	000W51 30	60N44 54	G	1	TT	OT	16	23	575		

	C10d5a Co-polar antenna pattern						
C10b1 Assoc. earth station id.	Co-polar ref. pattern	Coef. A	Coef. B	Coef. C	Coef. D	Phi1	Co-polar rad. diag.
SANTA CLARA, CA	AP8						
LITTLETON, CO	AP8						

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BR6a/BR6b Id. no.: 1 | *BR3a* Provision reference: 9.1/IA | *BR2* Adm. serial no.: | UTX | E

IT-01	AP8						
UK-01	AP8						

13C Remarks:

B1a/BR17 Beam designation: UTX2 | *B1b* Steerable: | *B2* Emi-Rcp: E | *B3a1* Max. co-polar gain: 2.1

B2a1 Transmit only when visible from notified service area: Y | *B2a2* Min. Elev. Angle:

B3c1 Co-polar antenna pattern

Co-polar ref. pattern	Coef. A	Coef. B				Co-polar rad. diag.

List of orbital planes

ALL

B4a3a1 Angle alpha: | *B4a3a2* Angle beta:

BR92 Attach. for missing angle alpha/beta:

BR7a/BR7b Group id.: 8 | *BR1* Date of receipt: 15.03.2022 | *C2c* RR No. 4.4:

BR14 Special Section:

C4a Class of station: ET | *C3a* Assigned freq. band:

C4b Nature of service: OT | *C6a* Polarization type: L | *C6b* Polarization angle: 0

C8d1 Max. tot. peak pwr.: | *C8d2* Contiguous bandwidth:

C11a2 Service area: G | I | USA | *C11a3* Service area diagram:

A2b Period of valid.: 5 | *A3a* Op. agency: 161 | *A3b* Adm. resp.: A | *BR16* Value of type C8b:

BR96 Start date for 9.1/9.1A:

BR60 Regulatory deadline(s) 11.44/11.44.1:

C1 Frequency Range

C1a Lower limit		*C1b* Upper limit	
400.48	MHz	400.52	MHz

C7a Design. of emission	*C8a1/C8b1* Max. peak pwr	*C8a2/C8b2* Max. pwr dens.	*C8c1* Min. peak pwr	*C8c2* Attch.	*C8c3* Min. pwr dens.	*C8c4* Attch.	*C8e1* C/N ratio	*C8e2* Attch.	*C8f1* E.i.r.p. on the beam axis
1 40K0F1DBN	6	-40	-40		-60		16		

C7b Carrier frequency of the emissions (40K0F1DBN)

400.5	MHz																		

C10b1 Assoc. earth station id.	*C10b2* Type	*C10c1* Geographical coord.		*C10c2* Ctry	*C10d1/C10d2* Cls. / Nat.			*C10d3* Max. iso. gain	*C10d4* Bmwdth	*C10d6* Noise temp.		
SANTA CLARA, CA	S	121W57 40	37N22 48	USA	1	TT	OT	21.5	12	500		
LITTLETON, CO	S	105W08 01	39N34 24	USA	1	TT	OT	20.8	13.4	500		
IT-01	S	009E21 44	45N35 36	I	1	TT	OT	16	23	575		
UK-01	S	000W51 30	60N44 54	G	1	TT	OT	16	23	575		

	C10d5a Co-polar antenna pattern						
C10b1 Assoc. earth station id.	Co-polar ref. pattern	Coef. A	Coef. B	Coef. C	Coef. D	Phi1	Co-polar rad. diag.
SANTA CLARA, CA	AP8						
LITTLETON, CO	AP8						

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BR6a/BR6b Id. no.: 1	*BR3a* Provision reference: 9.1/IA	*BR2* Adm. serial no.:	UTX2	E

IT-01	AP8							
UK-01	AP8							

13C Remarks

BR22 Administration remarks

BR23 Radiocommunication Bureau comments